

Social World Sensing via Social Image Analysis from Social Media

SOCIAL WORLD SENSING VIA SOCIAL IMAGE ANALYSIS FROM SOCIAL MEDIA

Shalin Hai-Jew

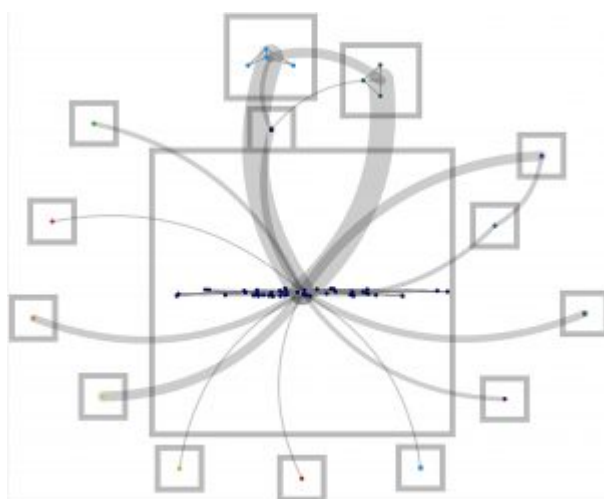
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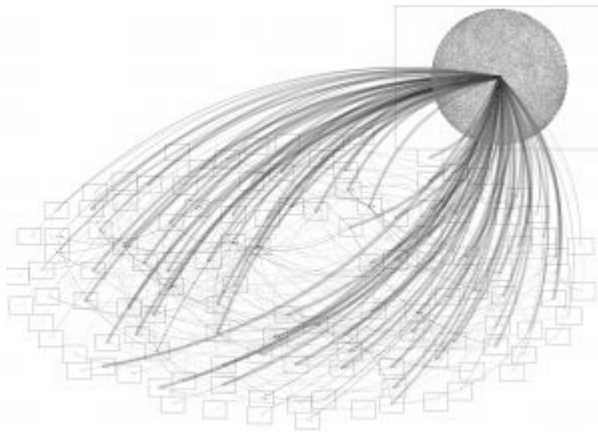
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INTRODUCTION: A WORLD "TOGETHER APART"

Shalin Hai-Jew



Social World Sensing via Social Image Analysis from Social Media (2020) is an extension of earlier work that I have done in exploring social imagery through manual coding in a prior book, *Techniques for Coding Imagery and Multimedia: Emerging Research and Opportunities* (2017). As sometimes happens with book projects, the obsession has continued even after the initial publication, and I have wanted to test the methods to see if more meaning-making may be achieved across different topics.

A colleague of mine working in higher education on a different

continent was working on a collection about the roles of social media in interweaving transnational issues. My chapters went through the double-blind peer review process, revision, and were finalized for his collection, slated to be published in April 2020. Suddenly, the publisher exercised the escape clause in the contract after the company had to lay off a fifth of their workforce. This is not to say that academic publishing has not always been a little touch-and-go (although I have had a good run of luck with publishers for many years). Rather, this turn of events occurred because the world itself was on fire, and the publisher was acting under duress and *force majeure*, in the face of deep uncertainties caused by a novel zoonotic coronavirus.

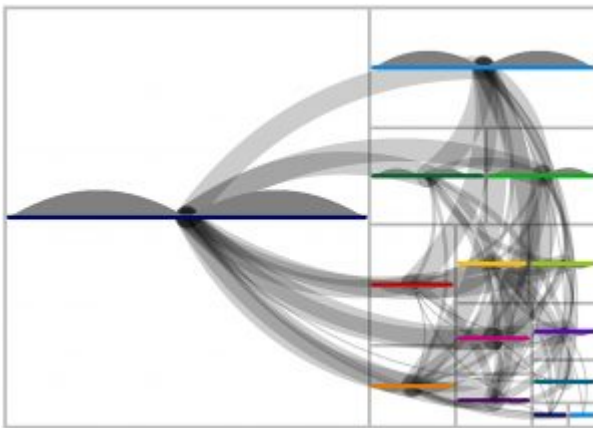
The social world, at this moment, is roiling. Humanity is living through a global pandemic, with the ravages of the novel SARS-CoV-2 virus leading to the COVID-19 disease in people in over 200 countries and on every continent except Antarctica.

The viral threat is being studied by scientists from various disciplines, and government officials and policymakers are struggling to contain the viral spread through "social distancing," hygiene, sanitation, and other measures. People are living through rolling lockdowns, with industries shut down, and mass population self-quarantines,

with people's lives at a standstill. Simultaneously, we are living through something that feels like the very sharp immediate moment as well as something echoic of history, prior outbreaks when mass swathes of humanity were lost.

Initially, I supported my colleague in querying yet another publisher to see if these chapters could find a home there. When that did not pan out and the former project editor went radio silent, I decided to decouple my chapters from the original project. And instead of going with a commercial publisher, I decided to query my university's open-access publishing house, the New Prairie Press, to see if there might be interest. I have an interest

in making the work available, and I do not have the luxury of a lot of time spent re-negotiating another publishing context and going through all the effort to get the works reframed to the editorial visions of other publishers and other editors. I am confident that this is the right path forward, given my re-orientation to meet expanded professional responsibilities. [Interestingly, the commercial publisher's administrator initially said that they only put a hold on the publication and would continue the project once they got up to speed again. I let her know that the forwarded email I saw said that the project was cancelled and that all contents reverted back to the respective authors and co-authors. The publisher then wanted to use these chapters in other works that they were publishing, and I declined her request. She reviewed the terms of the contracts and ultimately agreed with me that once projects were cancelled, the publisher's access to the original works also ended. All rights have reverted to me.]



This authored collection is comprised of seven chapters that are interrelated by a cross-cutting approach in the analysis of social media messaging (particularly imagery) and other contents. In another sense the works are readable in stand-alone ways. The

text does not have to be read sequentially. There are five topical parts to this work.

An Extended Table of Contents (TOC)

Part 1: Global Public Health

1. "Emergent COVID-19 and SARS-CoV-2 in Social Imagery and Social Video: Initial Three Months of Viral Dispersion"

The pandemic potential of emergent SARS-CoV-2, a zoonotic virus which causes COVID-19, has captured the world's attention, through formal mass media and informal social media (esp. social imagery and social video). This work explores multiple social imagesets (thousands of images) from Google Images (captured from various seeding terms related to the outbreak) and social video transcripts from Google's YouTube platform to infer focuses of mass human attention in terms of (1) messaging and information sourcing, (2) meta-messaging and subtexts, and (3) invisibilities (what is not expressed). This compares the imageset messaging against mass media articles from the same time frame. This work has implications for a mass-scale social response to an unfolding global biosafety/biosecurity risk based on learning from more organic and emergent social communications.

Part 2: Protecting the Environment

2. "Transnational Meta-Narratives and Personal Stories of Plastics Usage and Management via Social Media"

Daily, people interact with plastic, a human-made material that may last for generations in the soils, the air, and the water, with health effects on humans, animals, and the environment. What

are the transnational meta-narratives and personal stories of plastics on social media—on (1) a mass-scale digitized book corpus term frequency search, (2) social video sharing site, (3 and 4) two social image sharing sites, (5) a crowd-sourced online encyclopedia, (6) a social networking site, (7) a microblogging site, and (8) a mass-scale search term analysis based on time-based associations with correlated search terms? This work samples macro-scale stories of innovation (biodegradable plastics, bacteria that consume plastics), of lowering consumption, of plastic collection and recycling, of skimming the oceans of dumped plastics, and of mass-scale public awareness. There are also countervailing narratives of high consumption, resulting in overflowing landfills, plastics dumping on mountains and in rivers, and microplastics in people's bodies.

Part 3: Asserting Human Rights

3. "Global Citizens against Socio-Technological Incursions on Privacy, Human Rights, and Personal and Social Freedoms: Temporary Pixels and Ephemeral Voices"

With the simultaneous advances in technologies across various fronts, private citizens have had to face their fears of government surveillance and over-reach and private industry manipulations of personal data for various types of sell. There is fear that individuals and humanity will be over-matched and outpaced, judged, bullied, and ultimately captured and constrained by technological enablements. This work explores the thinking, writ large, of threats to privacy, human rights, and personal and social freedoms, as expressed on social media. This uses game theory to inform an early and narrated game tree about the power and limits of online voices.

4. "Blowing Whistles on Transnational Social Media: From Micro-to-Mass Scales, Privately and Publicly"

Internal whistleblowing against perceived wrongdoing has long had a place in both public and private sectors; this activity is

seen as enabling more effective business and governance by bring law-breaking, fraud, waste, theft, and other issues to administration attention. With the popularization of transnational social media, additional channels have opened that enable both private and public outreaches to external others. The low cost of entry and potential for wide reach may lead some to imagine that public attention is a net positive and will lead to its solution. However, such outreaches may have major downsides: intended and unintended audiences (attracting allies and detractors), the lack of hard power in public opinion and public pressure (in many cases), and "blowback." This work explores some roles of social media in the whistleblower phenomenon and defines the "social whistleblower" phenomenon.

Part 4: Political Expression

5. "In Flames, In Violence, In Reverence: Physical Protest Effigies in Global and Transnational Politics from a Social Imageset"

The popularization of the Internet, the WWW, and social media, has enabled various populations around the world to be politically "woke" together, with varying levels of agreements and disagreements around a variety of issues, with conservatism around some and radicalism around others (generically speaking). In social imagery, there are visuals of various protest effigies, depictions of public figures representing certain values, ideologies, platforms, policies, attitudes, styles, stances on issues, and other aspects of the political space. In some cases, the political figures are stand-ins and stereotypes that may represent undesirable change and a sense of threat. The study of physical "effigy" in social imagery from Google Images may shed some light on the state of global and transnational protest politics in real space and the practice of using physical protest effigies to publicize social messages, attract allies, change conversations in the macro political space, to foment social change.

6. "Exploring the Transnational Allure of 'Street Democracy' via Twitter based on a Contemporaneous Real-World Case"

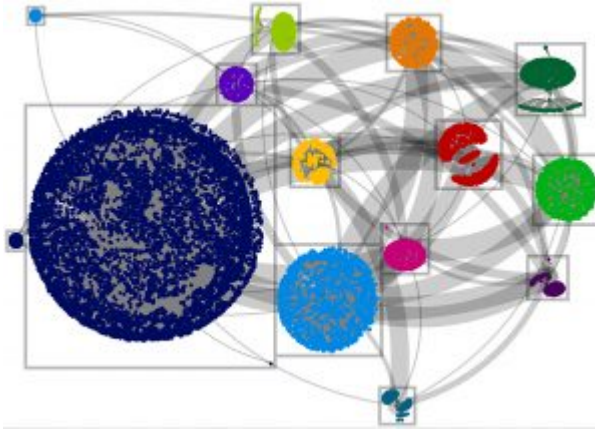
In the popular massmind, "democracy" seems to mean different things to different people. For some, it is something worth fighting, and demonstrating and dying for. For others, they cannot be bothered to engage in the minimal civil duties of staying informed and voting. This chapter involves the study of 16 contemporaneous social media accounts that were surfaced in a search for "Hong Kong protests" on the Twitter microblogging site to understand expresses senses of "street democracy". The resulting Tweets were analyzed for topical content, sentiment, and meaning, using a combination of human close reading and computational text analysis (in NVivo 12 Plus). What do the popular senses of "street democracy" around the pro-democracy Hong Kong protests on the Twitter microblogging site suggest about (1) its meanings to the demonstrators, and then what are some of the implications to (2) strategic and tactical international or external "democratic promotion" in the U.S. context abroad generally and towards Hong Kong specifically?

Part 5: Faux Human Interrelating

7. "The Remote Woo: Exploring Faux Transnational Interpersonal Romance in Social Imagery"

One aspect of globalization combined with information and communications technology (ICT) and social media is the advent of online data and resulting long-distance romances. The relationships that have come to the fore, though, are about transnational (and more local) romance scams perpetrated online that result in loss of funds, loss of time, loss of personal dignity, loss of personal reputation, and other harms. This work explores social imagery to better understand some of the messaging behind the "remote woo" and romance online and romance fraud and what insights these may provide on this issue, in this exploratory study.

Some technologies used

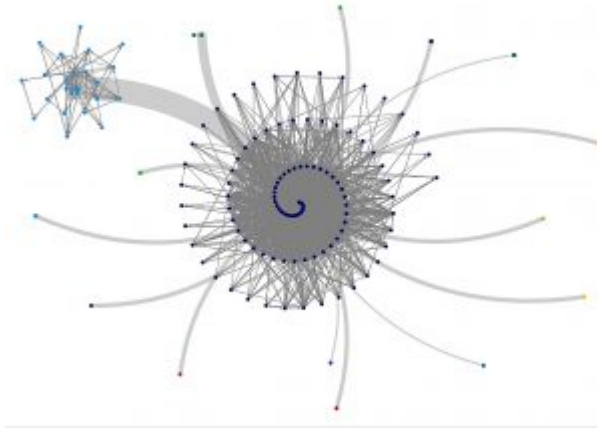


The technologies used in this work include the following (in a partial list):

- **Social Media Platforms:** Google Images, Twitter, Facebook, YouTube, Wikipedia, and Flickr
- **Data Extraction Tools:** NodeXL, NCapture, Google Correlate, and various web browser-based image downloaders
- **Data Analytics Tools:** NVivo 12 Plus and NVivo, LIWC2015, NodeXL, and Excel

The decorative graphs used as separators were created by the author using NodeXL.

In physical biosafety lockdown...



I am hopeful that this text, *Social World Sensing via Social Image Analysis from Social Media* (2020), offers some insights about a complex world of so many peoples in their expressiveness and sharing. In a time such as this, how people connect over social media in mutual respect and caring and support will make all the difference in our mutual well-being. If nothing else, this moment reminds me of just how needful we are of each other, even in our respective solitude.

Thanks!

Thanks to Dr. Floribert Patrick C. Endong for his work on the initial edited text that ultimately did not make because of publisher pullback, based on the onset of SARS-CoV-2 / COVID-19. This is only one text, and there will be others. Every book involves blood and sweat, and sometimes, rarely, tears.

Thanks to faculty librarians Ryan Otto and Emily G. Finch at the

Center for the Advancement of Digital Scholarship (CADS) at the Kansas State University Libraries for making this happen!

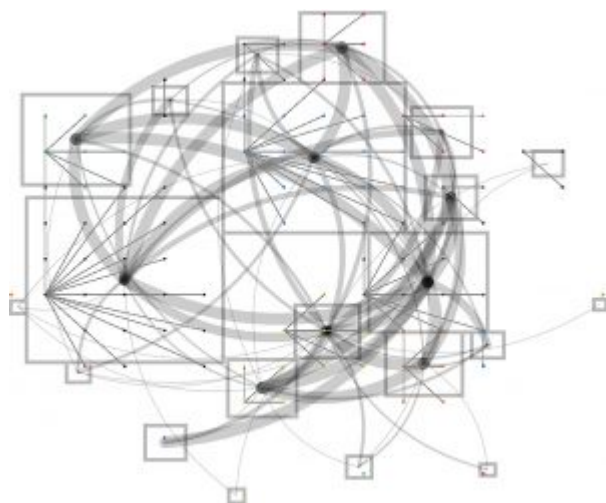
Thanks also to Scott Finkeldei (my supervisor) for his encouragement to pursue publishing with the New Prairie Press at K-State.

I am grateful to the makers of Pressbooks, who have made a very easy-to-use platform for creating online books.



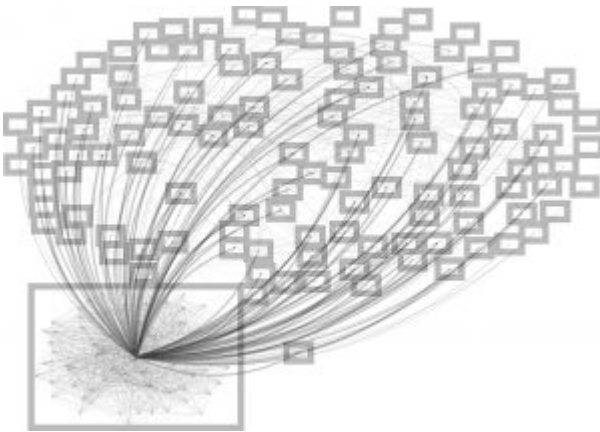
(The image is a watercolor portrait of me by my son in his childhood many years ago!)

- **Dr. Shalin Hai-Jew**
 - ITS, Kansas State University
 - Spring 2020



PART I

PART 1: GLOBAL PUBLIC HEALTH



1

EMERGENT COVID-19 AND SARS-COV-2 IN SOCIAL IMAGERY AND SOCIAL VIDEO: INITIAL THREE MONTHS OF VIRAL DISPERSION

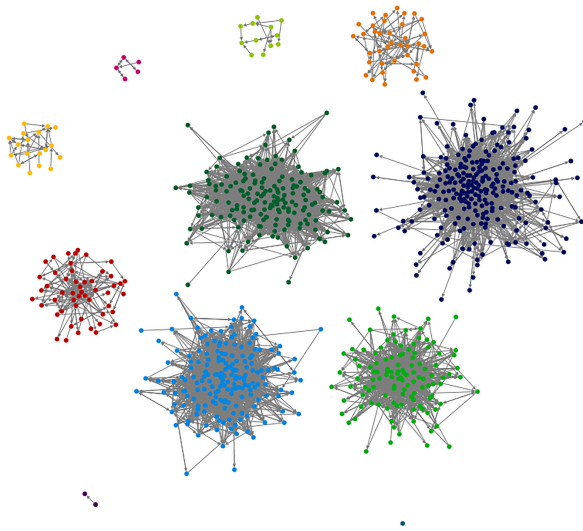
Shalin Hai-Jew

Abstract

The pandemic potential of emergent SARS-CoV-2, a zoonotic virus which causes COVID-19, has captured the world's attention, through formal mass media and informal social media (esp. social imagery and social video). This work explores multiple social imagesets (thousands of images) from Google Images (captured from various seeding terms related to the outbreak) and social video transcripts from Google's YouTube platform to infer focuses of mass human attention in terms of (1) messaging and information sourcing, (2) meta-messaging and subtexts, and (3) invisibilities (what is not expressed). This compares the imageset messaging against mass media articles from the same time frame. This work has implications for a mass-scale social response to an unfolding global biosafety/biosecurity risk based on learning from more organic and emergent social communications.

Key Words

Novel Coronavirus, 2019-nCoV, COVID-19 disease, SARS-CoV-2, Severe Acute Respiratory Illness, Community Spread, Self-Quarantine, Quarantine, Social Distancing, Chains of Infection, Contact Tracing



Introduction

“Assume this virus is everywhere. This is a global influenza pandemic caused by a coronavirus.”

— Michael Osterholm in Peter Bergen’s “The disease expert who warned us” in CNN (March 10, 2020)

COVID-19, the disease outbreak caused by the novel zoonotic virus termed SARS-CoV-2 (and prior, 2019-nCoV), is a major threat to human health in part because people do not have a natural immunity to this pathogen, which spreads quickly and invisibly. At this moment, World Health Organization experts suggest that COVID-19 has an estimated fatality rate of 2 – 4%+ in Wuhan (and 0.7% elsewhere) based on current available information and limited testing (Winsor & Schumaker, Feb. 24, 2020), as compared to 0.1% mortality rate for the common flu. [The “case fatality rate” is higher across all the age ranges than the common flu. Of those who progress to the actual COVID-19 disease, the case fatality rate is estimated to be 1% at present

from known data in China and S. Korea (Gottlieb, as cited in “Former FDA chief warns...,” Mar. 8, 2020)]. At present, there are not any known antivirals or other drugs that may be used against SARS-CoV-2 available commercially. This virus emerged from an unknown animal host and intermediate host to infect people in Wuhan, Hubei Province, in the People’s Republic of China, in December 2019, and by the end of February 2020, had spread to over 88,000 in 67 countries and territories, with over 3,000 deaths and 45,100 recovered. [More recent press accounts suggest that the viral outbreak started in November 2019 but was not detected by Chinese health officials until later and that there was a delay in notifying the world about the novel coronavirus outbreak.] Some 33,000 have recovered from infection by this respiratory virus but with the caveat that they may be re-infected based on reported health cases (Bacon, Feb. 19, 2020). The mechanics of the human bodies’ defenses and their “relapses” or reinfections (Kline, n.d., as cited in Begley, Feb. 4, 2020, p. 7) are not yet fully clear except that the protective antibodies seem to lose potency over time. The infections have occurred even in the presence of government defenses, mass quarantines, external (and internal) border controls, broad RNA-based testing in some regions, epidemiological work to map infections (through contact tracing and other work), mandatory house stays, mass sanitation efforts, and other interventions. At both the micro (individual) and macro (societal) levels, at the present moment, the defenses are few and only somewhat effective at slowing the viral spread. Buying time enables people to better control the load on their healthcare systems and to enable time to hopefully develop an effective vaccine (Evans, Feb. 23, 2020, p. 2). There have been negative byproducts of the various responses, including social stereotyping, stigmatizing and harassment (including violent assaults) of particular groups (and individuals); heavy-handed trampling of civil rights (forcible detentions and quarantines, privacy compromises, door-to-door police visits, and other challenges); and others. Three months in, there are still

many questions about the pandemic potential of SARS-CoV-2 and its capabilities.

Beyond the direct first-order effects of COVID-19 (illnesses and death), many second-order and third-order ones have occurred (affecting industries, politics, trade, and other spaces). Given the scale of the outbreak and the integration of countries in globalization, the possibility space is enormous. There have been follow-on repercussions on various health systems, economics systems, political systems, industries, tourism, and others—both in highly public ways and in much quieter ones.

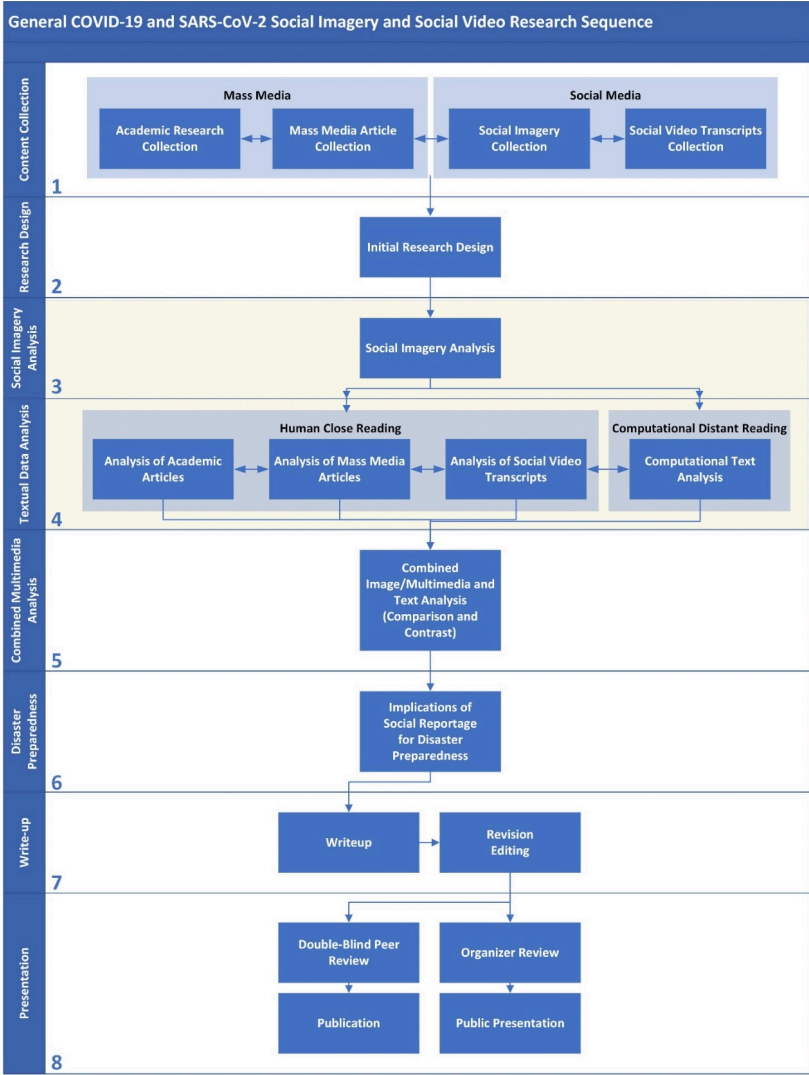
While various experts—epidemiologists, coronavirus experts, physicians, economists, policymakers, and others—have shared their knowledge in this space, common folk have also been sharing information. After all, they are witnesses to mass-scale city shutdowns, experiencers of cruise ship quarantines, survivors of the novel coronavirus, and others who have amateur knowledge in this unprecedented time. They not only share microblogging messages in text, imagery, and video, but they also share longer blog entries, interviews, and other information content. This less formal sharing may be studied for insights about digital services in times of crisis, with this study occurring in the moment, three months into the global epidemic (and without any benefit/harm of hindsight to the research).

This work involves the capture of multiple social imagesets with different seeding terms from Google Images and the capture of social video transcripts from Google's YouTube...and their manual analysis for understandings of mass human attention in a real-time crisis:

- (1) messaging and information sourcing,
- (2) meta-messaging and subtexts, and
- (3) invisibilities (what is not expressed)

The coding is compared against the reportage of some 669 online articles related to the outbreak in the same time frame (February 2020). These articles are all in English and from over a dozen different sources: CNN, Reuters, Associated Press, *Forbes*, *New York Times*, *New York Post*, KOMO, KIRO, KING5, *Seattle Times*, ABC, NBC, CBS, CNBC, FoxNews, *The Telegraph*, *The Guardian*, *The Washington Post*, *Foreign Policy*, *South China Morning Post*, *Time Magazine*, *Business Insider*, Bloomberg News, *Newsweek*, *USA Today*, *The Hill*, My Northwest, and various local media outlets. The idea was to sample broadly and in an “agnostic” way in terms of politics. This work has implications for a mass-scale social response to an unfolding global biosafety/biosecurity risk based on learning from more organic and emergent social communications through social media platforms that are public.

The work was conducted as described in Figure 1. The visual suggests linear work, but this may be better understood as recursive, moving forwards and backwards.



This flowchart shows the research sequence of this chapter.

Figure 1: General COVID – 19 and SARS-CoV-2 Social Imagery and Social Video Research Sequence

More specifics will follow. The image coding was done in a bottom-up way. The computational text analysis was conducted

using NVivo 12 Plus. Data were collected from the following online social media sources: Google Images and Flickr.

Review of the Literature

In a more pure science sense, it should not be a surprise when viruses cross over from one species to another, given the probabilities alone. Some scientists have discussed generational outbreaks, with the idea that such high-risk mutations are expected given the natural context and human actions of high-trade and high-travel globally. Human lifestyles requiring incursions into different animal habitats also enable higher chances of interactions, with different pathogenic effects possible. One science writer explains:

The virosphere and the biosphere exist together and interpenetrate each other, like milk in tea, like mist in air. Everything that lives gets infected with viruses. As far as anyone knows, viruses replicate in the cells of all species of living things, *all* of them, from bacteria to blue whales. The virosphere permeates the earth's atmosphere, which is filled with viruses blowing in the wind. Around ten million virus particles land on every square meter of the earth each day, drifting down from the air. Viruses saturate the soil and the sea. A liter of seawater contains more virus particles than any other form of life. Viruses exist in vast numbers in the human gut, infecting all of the four thousand different kinds of bacterial that live naturally in a person's intestines. Viruses can sometimes infect other viruses. (Preston, 2019, p. 34)

When crossovers occur, humanity benefits when their surveillance is able to detect this, for the sake of **biosafety** (the protection of human, animal, and environment from the unintentional exposure of disease-causing microorganisms and biological hazards) and **biosecurity** (the guarding of human, animal, and envi-

ronment from the intentional release of pathogenic microorganisms and biohazards).

A review of the mass media reportage from late January 2020 through the end of February 2020 (with an extra day for leap year) finds some early published works by science writers who have taken on the role of sentinels providing early warning, such as Laurie Garrett [Pulitzer Prize-winning author of *The Coming Plague* (1994), *Betrayal of Trust* (2000), and *Ebola: Story of an Outbreak* (2014)]. In one early work, several weeks after the Chinese government was said to have become aware of a cluster of illnesses in Wuhan, Garrett wrote a prescient piece titled, “Just in time for Lunar New Year, another SARS-like epidemic is brewing in China: Scores of people in Wuhan and Hong Kong have been sent to hospitals because of a mysterious respiratory ailment—and true to form, China is trying to keep it quiet” (Garrett, Jan. 8, 2020, p. 1). It was written in part as a goad to encourage an apparently reticent Chinese government into increased transparency. She cites a red alert posted on the website of the Medical Administration of Wuhan Municipal Health Committee on Dec. 30 announcing a “pneumonia of unknown cause” (Garrett, Jan. 8, 2020, p. 3). On New Year’s Day, other information was released with identification that the outbreak was “caused by the SARS virus, which is a member of the coronavirus family,” and shortly thereafter, temperature screenings ensued at airports and train stations in China, HK, Singapore, and Taiwan (Garrett, Jan. 8, 2020, p. 3). [The name “coronavirus” comes from the Latin word “corona,” referring to a “crown” or “halo.” Electronic microscope images of the very small virus—about 27 – 34 kilobases (“Coronavirus,” Feb. 29, 2020)—shows a virus that “looks like a solar corona” (Gibbons, Jan. 24, 2020). Coronaviruses are “in the sub-family *Orthocoronavirinae* in the family *Coronaviridae* and in the order of *Nidovirales*.

Other news started leaking from others that the genetic profile did not fit SARS and that a novel pathogen was likely. There

is reference to a report of two people with pneumonic plague in November, with a two-week delay of reportage to the WHO: “A number of mysteries about the illness remain outstanding, including its connection to a nearby rat infestation, reported plague cases in Mongolia, and its ultimate resolution. After a flurry of coverage in Chinese media, the story died out, government officials issued no further statements, and it isn’t known how extensive the problem may have grown” (Garrett, Jan. 8, 2020, p. 5). It is unclear whether the illnesses are related, but there seems to be a possibility that the issue may have been around for longer than is known currently. Garrett makes the case that more information is needed before the mass travels of the Lunar New Year (Garrett, Jan. 8, 2020, p. 7), but that did not happen, and the mass movement of peoples with no defenses and no knowledge of the outbreak points to a massive missed opportunity to try to contain the virus. The meta-narrative of the country with the largest population and the world’s second largest economy hiding its realities is a recurrent theme. The coronavirus story is seen as “too big...to spin” (Zhao, Feb. 14, 2020). [If not for the public and a few whistleblowers holding their government to account, the story may have been delayed even longer. Those inside and outside China monitor social media channels in order to make sure not to get left behind from the unfolding news, including information shared outside of official channels.]

In a snarkily-titled work, she labels the coronavirus outbreak to be a “belt and road pandemic,” in reference to Chinese president Xi Jinping’s political agenda (“a multitrillion-dollar program to expand Chinese trade and infrastructure around the world—the centerpiece of his foreign and economic policy”) (Garrett, Jan. 24, 2020, p. 1). The deeper integrations of people and places, across vast distances, also means that animal- and human-borne infections may travel along and wreak havoc. She writes: “It’s hard to look at the new routes built with Chinese aid over Siberia and the Himalayas and as far as Africa without seeing potential routes for

disease that could carry contagion to every corner of the world” (Garrett, Jan. 24, 2020, p. 4).

A work later that month focused on ways to stay healthy, involving wearing gloves outside the home, keeping her hands from touching her face, assigning towels to household members and washing them twice a week, using elbows or shoulders to open and close doors (because of the contaminants on hand-touched and handheld objects), using serving spoons for shared dishes, not consuming any “live animal or fish until it is known what species was the source of the virus,” ventilating rooms in a home when the weather allows, and wearing a tight-fitting mask if caring for a sick relative (Garrett, Jan. 25, 2020, pp. 2-3), among others. Of towels, she writes: “Damp towels provide terrific homes for viruses, like common colds, flues, and yes, coronaviruses” (Garrett, Jan. 25, 2020, p. 2). Gaining control over people’s unconscious hand movements requires retraining, mindfulness, and self-control.

In late January, several articles show hallway images from Wuhan hospitals. One shows a walk-through of the hallway with dead bodies covered in quilts and sheets. Another one shows a coronavirus patient convulsing on a cart (Adedokun, Jan. 27, 2020). [At the time of the writing of this work, some of the videos had been taken offline.] Near the end of January, the Chinese government pledged to build a 1,000-bed hospital for those with coronavirus and succeeded in 10 days, taking in its first patients by Feb. 3 (McDonald, Feb. 3, 2020); they completed a second one, a 1,600-bed hospital, shortly thereafter (Wang, Zhu, & Umlauf, Feb. 6, 2020). The bravura feat of government messaged a commitment to care for its peoples and to gain control of the outbreak.

And yet, as time passes, there are reports of health workers coming down with the infection and some dying, given the shortage of safety equipment, gear, and personal protective clothing (Saio, Feb. 11, 2020; Quinn, Feb. 14, 2020) and the lack of training

for handling such pathogenic agents, according to multiple articles. There are several stories of heroic doctors wearing diapers to make it through “long shifts” (Steinbuch, “Doctors battling...,” Feb. 13, 2020, p. 1) and nurses shaving their hair to avoid cross-contamination (Saio, “Nurses fighting coronavirus...,” Feb. 13, 2020), which smack of propagandistic storylines. There are questions of relief measures and resources for those on the front lines, given their critical skills and knowledge. Other stories emerge about treatment types, such as using plasma from recovered patients to treat those severely ill to try to boost an immune response (Young, Feb. 14, 2020), and to concentrate antibodies. Indeed, the hospitals seem overwhelmed by the refocus on those with COVID-19, displacing others who are critically ill from other causes (Feng & Change, Feb. 25, 2020). Different reports show varying levels of supportive care for those with COVID-19.

The government set up edicts to lock down cities of people and to control for the movement of its citizenry, and they enforced these with police and military. They forbade work for weeks at a time. They closed schools through April, provisionally, until the coronavirus passes the typical flu season, in order to lessen the impact of illness and fatalities.

The Chinese government ramped up RNA testing (through PCR testing or “polymerase chain reaction” analysis), based on mucus samples from noses and throats) for the coronavirus and shared their findings globally. They sent out patrols to enforce the uses of facemasks in public. They tested people’s temperatures on the streets, in cars, and in their homes, and forcibly removed those with fever or other symptoms of coronavirus infection into isolation or quarantine units (some of which looked like mass gymnasiums with cots), for “social distancing”. [Ideally, people who are infected would be housed in units with negative air pressure to contain the circulating air and particles, so that there is not spread. However, with the scope of the infections, it can be hard to provide that sort of approach.] Citizens (who may or may

not have the infection) were asked to self-quarantine at home to prevent human mixing and the spread of the virus. At the same time, various governments arranged flights for their citizenry to return home to quarantines in their own homes or in military bases. All the while, some level of triage was occurring in order to provide higher levels of care for those in more serious condition (such as those needing intensive care) and showing less priority for those with milder symptoms. News reports show emptied streets, some strewn with garbage. There are stores emptying of food and other staples as well as cleaning supplies.

Some of the Initial Science

The unfolding of a disease outbreak may be seems to spark fear and anxieties right away once the news starts to move through the respective formal mass media channels. Many of the initial focuses have been on symptomology: coughing, shortness of breath, fever, or other similar symptoms similar to those from the flu; some have also experienced aches, running nose, nasal congestion, sore throat, diarrhea, gastrointestinal challenges, tiredness, suppressed appetite, and others. [It is said that many of the most dangerous illnesses in people start with the same symptoms as the common cold or flu, so the symptoms alone are not indicative of the ultimate effects on the ill person.] Further into the outbreaks, others suggest that the “loss of smell and taste” could be symptoms (Gupta, Mar. 23, 2020).

Some have described uncontrollable fits of coughing anecdotally. There have been questions about how long the viral **incubation period** (how long a person may be infected but not show symptoms) may be. Initial thinking was that most showed symptoms within 3 days of infection and up to 14 days, depending on the individual, but some research suggests that the incubation period might be as long as “24 days” (Saio, “Coronavirus incubation period...,” Feb. 13, 2020). People were infectious even before they showed signs of being ill. Some people have mild cases of the

infection and were asymptomatic but could still pass the virus on to others.

Along with press reports are people wearing loose-fitting paper and cloth masks; some are improvised “masks” such as those created from empty plastic bottles (over a child’s head). [During the stories and later, there are many reports from doctors and public health professionals that such masks are ineffectual as a defense in public spaces ...and because of the gaps and porosity of the masks. Those symptomatic should wear masks so as not to potentially infect others (Schiff, Feb. 9, 2020, p. 5), but mask usage has to be done effectively to be effectual: with masks “not touched once in place, changed if damp or soiled, and discarded after a single use (p. 5).]

The evolution of the zoonotic virus enabled people to be infected by the animal-borne virus, in a zoonotic spillover (the transmission of a pathogenic agent from a vertebrate animal to human). Initially, it is thought that people could only be infected by consuming infected animals (of some kind) from the Wuhan wet market (Wuhan South China Seafood Wholesale Market or Huanan Seafood Wholesale Market)...or by inhaling the viruses shed by the infected animals. One writes: “It is not clear whether any bats or pangolins, live or dead, were on sale in December at the Huanan Seafood Wholesale Market in Wuhan, where more than half of the people first identified with the virus had shopped. And it is possible that the viral leap into humans occurred somewhere else, as some early cases occurred in people with no known link to it” (Achenbach, Feb. 7, 2020, p. 2). There have been calls for increased regulation of the wild animal trade (Ellyatt, Feb. 12, 2020) and calls for its abolishment altogether. [Farmed food animals also are prone to various infections, which is why biosafety boundaries are maintained around pig farms, poultry farms, and others, to avoid viral spillovers. This boundary is to minimize human interactions with the domestic animals

as well as wildlife, all of which can expose the food animals to varied microorganisms, some of which may be pathogenic.]

Then headlines emerged that there could be human-to-human transmission, such as through close personal contact (within three to six feet and over a period of time), through respiratory droplets from coughing and sneezing. One source suggested the fecal-oral transmission route, often through improper hand hygiene. One work explains: “The virus is primarily transmitted through saliva that is released when an infected individual coughs into the air, but can also be transmitted through diarrhea” (Berry, Feb. 22, 2020).

Then, there were concerns about potential fomite (“objects or materials which are likely to carry infection, such as clothes, utensils, and furniture” as defined in the Oxford English Dictionary) transmission. The viral transfer leading to infection may occur from touching contaminated surfaces and then touching the face (eyes, nose, mouth) and transferring germs (Rowan, Nov. 28, 2012). Various studies found that people touch their faces on average 3.6 times an hour (other studies suggest even more frequent facial touching). Even with frequent handwashing, the speed of recontamination is fast. Multiple observational research studies also suggest that only a small minority of people—5%—wash their hands correctly and with sufficient time for the bacteria on their hand to be killed (“Gross!...,” June 10, 2013). Disease vectors can be intermediary hosts of the pathogen or inanimate objects like fomites that enable the transmission. In this case, it is important to know how robust or fragile the viral pathogen is on contaminated surfaces (Howard, Feb. 17, 2020) in ambient temperatures. [One work comparing the viability of SARS and MERS found that these human coronaviruses persisted on inanimate surfaces “including metal, glass or plastic surfaces—for as long as nine days if that surface had not been disinfected” in research in *The Journal of Hospital Infection* recently (Howard, Feb. 17, 2020, p. 1). An update from the CDC suggests

that coronavirus survived on cruise ships for “up to 17 days after passengers left” (Feuer, Mar. 24, 2020). More recent research suggests that SAS-CoV-2 particles in the air may be viable to cause infection for up to three hours (Marchione, Mar. 11, 2020). The lab researchers also found that “viable virus could be detected up to three hours later in the air, up to four hours on copper, up to 24 hours on cardboard and up to two to three days on plastic and stainless steel” (Marchione, Mar. 11, 2020).] Some coronaviruses reportedly are sensitive to heat and so are more common in the Fall and Winter seasons. The approach to SARS-CoV-2 is a One Health one, which includes consideration of humans, animals, and the environment (although there are disparate implications on each).

Based on past experiences, there are questions of whether there are “super spreaders,” individuals who are connected to a high rate of infection transfer to others (Saio, Feb. 10, 2020, pp. 1-2). In this case, this role has been assigned to a “British businessman” (Saio, Feb. 12, 2020) and a “flight attendant” (“Flight attendant...”, Feb. 28, 2020), with the first credited with infecting nearly a dozen and the latter, multiple dozens. There is a female church attendee in S. Korea tied to several dozen infections (Shin, Feb. 23, 2020, p. 2). The super spreading involves the shedding of viruses in a number of contexts that result in high numbers of infections.

At present, even though several newborns were found to be infected, it is not generally thought that the virus passed to them from their mother but could have come from nosocomial (hospital-acquired) infections.

Counting cases of infection

Who has it, and who doesn’t? Diagnostic testing is a lagging indicator because of the incubation period, the guesswork in knowing who to test (such as from contact tracing), and the challenges of having sufficient cases to detect a signal. Many countries also

had to ramp up their surge capacity in order to be able to do lab-standard testing. The slowness of deployment is thought to have enabled silent spreading of the infection, many undiagnosed cases, and the existence of hidden clusters without societal awareness.

How to count the various infections also has changed over time. Initial counts came from testing of those who were very ill with respiratory illnesses, lung-based disease and / or pneumonia, and the testing was based on RNA. On Feb. 13, 2020, Chinese health authorities started counting cases that were “clinically diagnosed” based on lung imaging, which included more presumptive positive cases (those found to be positive in state lab tests but without the confirmatory testing by the Centers for Disease Control and Prevention yet), but was also less exact (without genetic validation).

The diagnoses through “pneumonia imaging features” (Talmazan, Feb. 13, 2020, p. 2) serves as a quick shorthand but the validations may occur later with follow-on RNA testing. Follow-on analysis found that there are visual indicators for lung infection by SARS-CoV-2, with “hazy and gray” rounded lung lesions near the outer parts of the lungs (as differentiated from bacterial lung infections) as discovered by radiologists Adam Bernheim and William Chung (“W.H.O. raises coronavirus warning...,” Feb. 28, 2020). The patches are “fluid in the lung spaces” (Woodward, Feb. 20, 2020, p. 7).

The new numbers made the death rate lower (because the denominator of cases rose). The computed tomography (CT) scans of lungs, as “clinically diagnosed” cases, was then reversed about a week later by Chinese health officials based on “improved testing capacity” (Woodyatt, Kottasová, Griffiths, & Regan, Feb. 21, 2020, p. 1). External global health experts asked China to count asymptomatic cases because people without symptoms may still be infectious, and such individuals are regularly included in counts globally, so that such numbers are com-

parable (Woodyatt, Kottasová, Griffiths, & Regan, Feb. 21, 2020, p. 4). The numbers coming out of the country at the epicenter of the coronavirus outbreak has always had detractors who question the reliability.

However, the counting has been problematic anyway because of the lockdowns preventing people from going to hospitals...and because of the dearth of test kits for the RNA testing...and other factors. The U.S. CDC rollout of testkits were not without problems either (Steinbuch, "Some coronavirus test kits..." Feb. 13, 2020), with problems reported with the reagents.

The infections were spreading quickly outside of China as well, with cases on every continent but Antarctica by February 26, 2020. The first human-to-human case of coronavirus transmission in the U.S. was confirmed in Illinois near the end of January (Schumaker, Jan. 30, 2020, pp. 1 – 2). On Spain's Canary Island, an Italian guest tested positive for the coronavirus, resulting in the lockdown of the hotel (Mulligan, Talmazan, & Radnofsky, Feb. 25, 2020, p. 1).

A sharply increasing frequency trajectory

In the reportage, there have been time periods when infections seemed to be waning, but so far, those have proved to be so-called false dawns. As the capabilities to count more accurately across wider swaths of the population have come online, more cases have been verified. There have been moments commemorated in mass media, such as when the COVID-19 death toll surpassed that of SARS (Pereira, Feb. 9, 2020), and in a much shorter time period. One journalist observes: "It took eight months for SARS to infect more than 8,000 people. COVID-19 has infected more than 75,000 people in about eight weeks" (Woodward, Feb. 20, 2020, p. 5). China still has the most known cases in the world, but the target is a moving one, with larger clustered outbreaks in South Korea, and Italy with the largest outbreak cluster outside Asia (Griffiths, Marsh, & John, Feb. 23, 2020). The count

then was 77,100 in China, 840 in Japan, and 833 in S. Korea, and 219 in Italy with the biggest outbreak outside of Asia (Borghese & John, Feb. 24, 2020, p. 1), at that time. In Qom, some 50 died of the novel coronavirus in February (Aaro, Feb. 24, 2020, p. 2), and Iranian travelers in “Canada, Lebanon, and the United Arab Emirates” were found to be infected, too (Aaro, Feb. 24, 2020, p. 7). There are concerns about North Korea’s claim that the coronavirus does not exist in their borders, given the lack of transparency and state of healthcare.

Even as the numbers tick up and various milestone counts are observed, people are sometimes more responsive to seeing known figures fall ill [like statespersons like in Iran’s deputy health minister, Iraj Harirchi (Chulov, Feb. 25, 2020), who later died] and the late Dr. Li Wenliang, an ophthalmologist who first warned about the new coronavirus ahead of the Chinese government. Putting known faces to the disease humanizes the issue for many.

Likewise, the cases in S. Korea may not have been salient to many Americans until news came out that first a military dependent (McLaughlin, Feb. 24, 2020) and then a U.S. military member was found to be infected with the novel coronavirus. Later news suggests that the U.S. military base may ramp back on operations due to the outbreak.

Formal (provisional) naming

In an unfolding crisis, the pathogen has the advantage of initial stealth and hiddenness, with as-yet unknown capabilities. As it interacts with the environment and living people, its tendencies start to emerge, and empirical-based observations may inform on its various effects. Also, the naming of the pathogen is part of human processes, for accuracy and for common knowledge sharing. On Feb. 10, 2020, the World Health Organization formally named the illness caused by the coronavirus “COVID-19” [with “CO” for “corona,” “VI” for “virus,” and “D” for disease, and

the “19” for “2019” to represent the initial year of case presentation (Gonzalez & Ryan, Feb. 11, 2020, p. 2; Edwards, Feb. 11, 2020). Initially, the Chinese government referred to the disease as the “novel coronavirus pneumonia” or “NCP.”] The pathogenic virus was named SARS-CoV-2 (Gonzalez & Ryan, Feb. 11, 2020) with “SARS” representing “Severe Acute Respiratory” and “Co” for “Corona” and “V” for “Virus,” and “2” representing the version (which follows the first SARS outbreak in 2003), replacing the initial shorthand version dubbed “2019-nCoV” (with “2019” standing for the year of the emergence, “n” for “novel,” and “CoV” for coronavirus), an earlier version of the name also by the WHO. A final name will be decided by the International Classification of Diseases, and it will be voted on the International Committee on Taxonomy of Viruses (Smith, Jan. 31, 2020, p. 3). Naming rights usually belong to the scientists that discovered the particular virus (Branswell, Jan. 23, 2020), so there could still be new names applied before a final one is decided. In the current age, there is awareness of the need to not stigmatize a city or its peoples by putting the location name in the disease name or the virus name. In 2015, the WHO decided to “avoid naming new diseases after people, places, or animals” because of the potential associated stigmas (Smith, Jan. 31, 2020, p. 2). Keiji Fukuda, Assistant Director-General for Health Security of the World Health Organization, is quoted: “We’ve seen certain disease names provoke a backlash against members of particular religious or ethnic communities, create unjustified barriers to travel, commerce and trade, and trigger needless slaughtering of food animals” (Smith, Jan. 31, 2020, p. 2). Current referents are likely temporary placeholder ones, at least in the formal scientific sense.

SARS-CoV-2 effects on the human body

Some of the textual descriptions, even without graphic videos or imagery, from a distance, may read as hyperbolic: coronavirus can “cast a storm over the whole human body” and lead to “honeycomb lungs” (from “punched holes in the lungs” from the

pathogen) and multi-organ effects (particularly the liver and kidney) and failure (McKeever, Feb. 14, 2020, pp. 1-2, p. 4). Coronaviruses can cause a “hyperactive immune response” in the body: “Cytokines are proteins used by the immune system as alarm beacons—they recruit immune cells to the site of infection. The immune cells then kill off the infected tissue in a bid to save the rest of the body” (McKeever, Feb. 14, 2020, p. 3). Such over-reactions of the body can be deadly.

Reverse zoonotic transfer from humans to animals?

On February 29, 2020, a story came out that a pet dog in H.K. was under quarantine for testing “weak positive” for the SARS-CoV-2. (Sanchez & Lockwood, Feb. 29, 2020). Later came word that a tiger in the Bronx Zoo in New York was found to be infected (Goldstein, April 6, 2020).

Modern-day quarantining

Given the sudden onset of the outbreak, people describe lives interrupted. There is a couple whose adoptive child is stranded abroad (Kaur, Chen, & Cartaya, Feb. 10, 2020). There is a young person going to an overseas job who is on hold for the near future. There are graduate students studying in China whose governments cannot afford to evacuate them. There are students on a study cruise who have a member ill who cannot find haven in nearby countries.

Then, the enforced “social distancing” is being effected on a scale never before applied, in the hundreds of millions of people, to lower densities of persons to lower the spread of a highly contagious pathogenic agent. Here, people are often quarantined in their particular circumstances.

One visually salient and eye-catching example related to the forced quarantining of people on cruise liners who were asked to stay in their cabins and not offload at various ports of entry

(which often denied their entry). While the respective port's leadership was trying to protect their own citizens from the novel coronavirus (and to be able to keep tabs on the various individuals in one location), cruise ships were not built with filtration that can control for viral dispersion, and the staff were not trained in quarantine measures (of sanitation, of effective isolation), and they did not have the equipment or personal protective equipment (PPE) for effective protection of the workers. It was found that the on-ship quarantining likely resulted in a number of infections that would not have occurred otherwise had the individuals been flown home sooner (Mansoor, Feb. 13, 2020). At the time, there were "more cases aboard the *Diamond Princess* than anywhere else in the world outside of China" (Feuer, Feb. 13, 2020, p. 2). As part of the Carnival Princess Cruises, the *Diamond Princess* had 2,666 passengers and 1,045 crewmembers; it arrived at Yokohama, Japan, on Feb. 3. When it was found transmissions were continuing on-ship, a phased approach was designed for the removal of passengers to onshore facilities for a 14-day quarantine beginning on their disembarkation (Feuer, Feb. 13, 2020, pp. 2-3). Those older and with underlying health conditions were prioritized above others (Feuer, Feb. 13, 2020, p. 3). Indeed, those who are older and are symptomatic are at much higher risk of a severe case of the respiratory disease. The logistics of taking responsibility for the cruise ship guests and crew would be a challenging feat, involving liabilities for the citizens of various countries and no obvious funding mechanisms. (**Side Note:** It is unclear how many countries have the capability to provide housing, food, medical attention, and other support for thousands of cruise ship travelers who may or may not be infected with a highly contagious and novel virus, all criticism aside. Any decision would involve various trade-offs.)

The U.S. government's evacuation of its citizens from the *Diamond Princess* cruise ship was criticized for its discomfort, with people loaded onto two cargo planes "that had been converted into flying quarantine wards," with flight attendants in hazmat

gear and 14 passengers identified as infected (Italiano, Feb. 22, 2020, p. 1). One area involved “ceiling-to-floor mylar sheet” separations for those who’d tested positive. Further, the journalist writes: “A six-bed ‘bio-hazard lab module’—basically a large, pressurized crate that was strapped to the floor of the plane, and designed to be off-loaded, as is, onto a truck or train—awaited any who began to cough and sneeze” (Italiano, Feb. 22, 2020, p. 3)

There are also various forms of government-enforced to self-enforced home quarantining (self-quarantining), a version of “sheltering in place” during disasters. Writ large, if people can maintain quarantine, they are not interacting with others while shedding viruses, and they are not in public places shedding viruses (which can then be picked up through fomite transfer from public surfaces). The thinking is that people have conveniences and stocked resources in their homes, where they may remain for a length of time. “Home” may feel safe but not always be necessarily safe. There were some storylines echoing the prior SARS outbreak in Hong Kong in 2003, in which an apartment building was sealed off because SARS was spreading through its air handling system. In the more current version, “over 100 residents have been evacuated from an apartment building in Hong Kong after two people fell ill with the deadly new coronavirus, stoking fears 2019-nCoV could be spread through pipes” (Gander, Feb. 11, 2020, p. 2) or “faulty piping” (Winsor, Feb. 11, 2020, p. 2). An earlier infected person was 10 floors away from the more newly infected individual. In another case, a family of nine were all infected after sharing hot pot (Farber, Feb. 10, 2020). One work highlighted different experiences of quarantines under different locations and contexts (Andone, Feb. 9, 2020), with a sense of empathy. In terms of zoomed-in locations of various outbreaks, some of been community hotspots. One was a welfare center for the elderly in S. Korea (Choi, Feb. 23, 2020). Another was an elder care center in Kirkland, Washington, in the U.S. (Boodman & Branswell, Feb. 29, 2020). A S. Korean church was another physical locale for viral spread (“South Korea

reports...," Feb. 20, 2020). In these and other cases, contact tracing was not particularly effective, suggesting that community spread was occurring, with members of the local population cross-infecting each other.

In terms of visuals in the respective articles, there are salient images. One photo shows Venice Carnival revelers in full costume walking past a masked police officer in a fluorescent vest as a point of contrast. There is a health worker in full protective gear picking up a sealed bucket labeled for medical waste. Some photos show stores with depleted shelves. Some show stock images of microbial-based disease researchers in biocontainment. Some demonstrators carry signs against the repatriation of U.S. citizens in various cities, with the signs reading: "Don't turn our city into another Wuhan!" and "Say NO to coronavirus in our city" ("Coronavirus patients at...," Feb. 24, 2020). The unwelcome of the ill is not only to foreigners but fellow citizens.

One iconic image shows an older Chinese woman looking up at a drone that has been used to warn her about the respiratory disease: "Yes auntie, this is the drone speaking to you. You shouldn't walk about without wearing a mask...You'd better go back home and don't forget to wash your hands" (Griffiths & Gan, Feb. 10, 2020, p. 1). Her image has been usurped for various social memes, with the drone addressing her in different ways and with different messages. Artificial intelligence has also been harnessed, such as a "temperature checking tool in Beijing...(that) can detect an abnormal body temperature and alert authorities who can then do a second check on the person" (Kharpal, Feb. 24, 2020, p. 3). Another application can "detect people not wearing masks in public" (Kharpal, Feb. 24, 2020, p. 3). Another application enables knowledge of whether one has been near a person who has been infected with COVID-19 (Kharpal, Feb. 24, 2020). While these endeavors impress on one hand in terms of the capabilities of "mass surveillance" to fight a potential pandemic, there are also fears that such applications may extend well beyond

the outbreak and result in heightened government controls and social oppression. Some innovations use extant technologies but in refreshing ways. S. Korea innovated a drive-through testing center to enable more efficient testing (Elbaum, Novaga, Shi, & Kim, Mar. 3, 2020, p. 2).

Innovations from science

This global health challenge has rallied the world's leaders and scientists and industries to try to find a solution, against very hard and complex challenges to find lifesaving measures, in timelines that are ambitious and even "aspirational," according to one of the scientists (Cannon, Feb. 22, 2020, p. 2), something of a moonshot. One publication described the potential for developing antibodies to the virus using tobacco plants (Oweremohle, Feb. 15, 2020), given their speed of tobacco plant growth. An existing drug that may have an effect on coronavirus is in clinical trials (Tirrell, Feb. 25, 2020). Clinical trials have started on a possible coronavirus treatment at the University of Nebraska Medical Center with participating infected persons who've signed on being cared for in the biocontainment unit (Anderson, Feb. 25, 2020, p. 3). Other biotech companies are working on possible vaccines. Some of the initial trials of the potential vaccines could begin in April, some five months after the initial reports of the COVID-19 outbreak, "but the process of testing and approvals would last at least a year" (Ziady, Feb. 25, 2020, p. 1). One that is on the fast track is the mRNA-1273 vaccine by Moderna that will be one of those tested shortly. The fast-tracked approach shows something of adaptivity given the circumstances and prior groundwork load in the eventuality of a disease outbreak. Multiple other approaches are being taken by various pharmaceutical companies.

There have been innovations in the uses of surveillance technologies as well. As mentioned, drones were deployed to warn citizens of the risks out on the streets. Chinese authorities also

deployed an app to “detect whether users have come in ‘close contact’ with the sick” (Feuer, Feb. 10, 2020, p. 2).

Economics, markets and pricing risks

This disease outbreak has had cascading impacts. Given the risks of human transmission, tourism has shut down around the world. The stoppage of Chinese tourists to destinations in Asia are thought to have impacts on the respective economies (Peck, Feb. 7, 2020); some “150 million Chinese tourists traveled abroad in 2018” (p. 1), each spending large amounts in the various destinations. Various professional conferences have been postponed or cancelled; some have gone virtual (with the assistance of web conferencing tools and other technologies). Some events are being held even though some participants are cancelling their presentations and others are signing petitions to cancel those events because of the health risks. Factories and workplaces have temporarily closed, resulting in disruptions to manufacturing and supply chains (Collins, Jan. 29, 2020) and work. Oil prices have fallen because of less demand. GDP (gross domestic product) is predicted to fall given the stoppage of people’s work. The likelihood of an interest rate cut by the U.S. Federal Reserve has risen given the “economic pandemic” ensuing from the disease outbreaks from the novel pathogen (Riley, Feb. 24, 2020), but these affect demand, and they do not enable supply (which is hindered by the travel restrictions). In the near-term, there is expected to be high disruption. However, there have also been affirmations expressed of long-term prospects for the U.S. economy by one of its billionaires, Warren Buffet (Funk, Feb. 24, 2020). There have been slides to U.S. stock values taking nose-dives and risks to “corporate profits and economic growth” (Horowitz, Feb. 24, 2020). Global stock value drops suggest risks to major economies (McLean, He, & Riley, Feb. 24, 2020). In the week ending February 28, 2020, the DJIA (Dow Jones Industrial Average) fell more than 10% in value in the week, indicating a “correction” on the market in consideration of the coronavirus.

There are effects on small businesses, too. Kim Tae-woo, owner of a convenience store in the East Daegu train station in S. Korea, quipped: “Things are beyond quiet here. It feels like I’m at a meditation centre. I’m thinking of removing the magazine stand. No one has the peace of mind to flip through them now” (Kim, Feb. 23, 2020).

There are expected to be mounting hospital bills and legal liabilities for workplaces that send their employees into events or spaces where they acquire the novel coronavirus. The various potential effects from the COVID-19 outbreak radiate outwards and in various directions.

Infected prisoners in China

Another storyline emerged that there were some 500 cases of infections in four Chinese prisons across three provinces (Wang & Myers, Feb. 21, 2020), with some attributing the infections to a coughing prison guard (p. 1) (which might be an apocryphal storyline). Responsible officials were fired in relation to these prison outbreaks, according to a Chinese official at the Chinese Ministry of Justice (Winsor, Feb. 21, 2020, p. 2). [The reference to prisoners had a darker tone given the harvesting of organs from prisoners given the death penalty. Otherwise-healthy people who survive the infection may have antibodies which may be used to shore up the health of others.]

Politics in a time of mass danger

At the global level, there are bodies like the World Health Organization focused on human health, for a kind of collective public health framework. Governments have stepped forward to fund endeavors to deal with the SARS-CoV-2 COVID-19 outbreak. The PRC has said it would spend \$10 billion (Pound, Feb. 9, 2020). The White House has initially asked for \$2.5 billion (Taylor, Feb. 24, 2020). The Gates Foundation has promised up to

\$100 million to “improve detection, isolation and treatment efforts; protect at-risk populations in Africa and South Asia; and accelerate the development of vaccines, drugs and diagnostics.” (“Bill & Melinda Gates Foundation...,” Feb. 5, 2020).

People tend to be political beings, and this even more so in times of crises. In times of war, under severe social duress, people’s civil rights are often suspended. That analogy applies with the application of so-called “wartime measures” in Wuhan, Hubei Province (Gander, Feb. 13, 2020, p. 1). These have included controls on human movement (travel bans, lockdowns, mass quarantines, door-to-door health checks, enforced home quarantines, and others, in China, the country with the epicenter, and others. In China, citizen journalists have gone missing (Li, Feb. 12, 2020) and disappeared (Gan & Thomas, Feb. 9, 2020), with the citizen activists thought to be arrested by authorities for their activism. There has been censorship and the control of information (Feng & Cheng, Feb. 25, 2020). The Chinese government has also worked to sterilize cash with “either ultraviolet or heat treatments” (Taylor, Feb. 17, 2020, p. 2) and laundering (Yeung, Feb. 17, 2020). In other cases, cash is destroyed and reprinted. There have been messaging that things were returning to normal and that the easing of Wuhan’s quarantine was imminent, but that was retracted shortly thereafter (“China announced easing...,” Feb. 24, 2020). The challenge is that there are huge pressures to take different courses of action, and every day lost to non-work also exacts a societal toll.

Dr. Bruce Aylward, heading the W.H.O. team in China, praised the Chinese lockdown: “China has taken one of the most ancient strategies for infectious disease control and rolled out probably the most ambitious and, I would say, agile and aggressive disease-containment effort in history” (Winsor & Schumaker, Feb. 24, 2020). Such praise stands against the critiques of journalists and others, who are seeing an unfolding and uncontrolled pandemic (Brackett, Feb. 25, 2020). Such endeavors as “shutting down bor-

ders, building walls, cancelling all air travel and quarantining entire nations indefinitely” is not going to continue into the foreseeable future per se because there are other considerations; containment is about slowing down the spread of an outbreak and to “buy time to prepare, but if a pandemic hits, by definition, containment has failed and further attempts will be pointless, if not counterproductive” (Evans, Feb. 23, 2020, p. 1), at which time the main endeavors will be on mitigations.

There are predictions that “Xi Jinping’s dreams of a Chinese century” may be “derailed” by this outbreak (Campbell, Feb. 6, 2020). The threat to the reputation of the P.R.C. as a trustworthy trading partner is on the line as the size of the outbreak and its implications are becoming clearer (Bremmer, Feb. 17, 2020, p. 49). After U.S. officials restricted entry into U.S. from China in late January, the Chinese government returned the favor and advised their citizens to avoid travel to the U.S. for “safety reasons” (COVID-19 Update: South Korean toll soars..., Feb. 24, 2020). One work suggests that the S. Korean approach may be the one for a “new normal,” in their lack of panic, their state of “no rioting, no fearful mobs opposing the housing and care of hundreds of infected patients in their city” but rather just a sense of “stoic calm and quiet” (Pannell, Feb. 24, 2020, p. 2). Chinese government spokespersons have also accused the U.S. of spreading panic over the coronavirus outbreak. The damage may extend to the global system, with this outbreak as “a milestone on the road toward the end of the first phase of globalization” (Bremmer, Mar. 16 – 23, 2020, p. 32).

The United States began airport screenings in January and started expanding these out beyond major hubs on Jan. 17, 2020 (O’Reilly, Jan. 17, 2020). Those new arrivals showing symptoms in New York, Los Angeles, San Francisco, or Chicago (and later Seattle) were tested for coronavirus (if they did not test positive for the flu first) and quarantined, starting February 14, even for those who had not traveled to China (Rahhal, Feb. 14, 2020, p.

2). Problems with the diagnostic test meant that fewer tests were available and that testing could not be distributed geographically until the end of February. The numbers are difficult to gauge given the risks of actual infection rates being masked with the flu season. One reporter observes:

This flu season, 823,555 patient samples have been tested for flu. More than 155,000 of those—nearly 19 percent—have tested positive. But if the testing protocol now installed at labs in Seattle, New York, Los Angeles, San Francisco and Chicago were expanded to the rest of the US, the remaining 668,555 samples that tested negatively for flu would also get tested for coronavirus. (Rahhal, Feb. 14, 2020, p. 3)

Indeed, the stakes are high beyond human health: how political leaders respond will result in public reward or punishment at the ballot box in a democracy (Collinson, Feb. 25, 2020).

For all the importance of government capabilities at scale, people have to adapt together en masse for this to work. So many decisions are made and actions taken at the common citizen level.

Animal conservation

Animal conservation has emerged as an important issue. Grace Ge Gabriel, Asia regional director of the International Fund for Animal Welfare, is quoted: “This issue is not just a conservation issue anymore. It’s a public health issue, a biosafety issue and a national security issue” (Nuwer, Feb. 19, 2020, p. 2). The mass fumigations have had side effects not only on the environment but also on animals. Journalists have recorded 135 dead animals in a mass die-off in Wuhan attributed to disinfecting efforts by Chinese official (Froelich, Feb. 22, 2020).

Advantage-takers

As part of the response to disasters, officials always known to

warn their citizens against fraudsters/hucksters and other advantage-takers. There are those who will bilk homeowners by promising fixes to their property but abscond with the initial payment or do shabby work (without the proper certifications or certifications). Indeed, the coronavirus outbreak has brought out “cybercrooks” with “coronavirus phishing email” attacks (Weisbaum, Feb. 18, 2020, p. 1). At street level, there has been hoarding of various goods and price gouging.

There have been reported cases of pranksters who have caused undue fear like a man falling and convulsing at a metro station and his confederates nearby claiming he had coronavirus (Ullah & Tarasova, Feb. 11, 2020).

There have been challenges to human safety and social order, through xenophobic attacks (against foreigners) (Shah, Feb. 17, 2020, p. 44) and racist assaults (Yan, Chen, & Naresh, Feb. 21, 2020). Cruise lines have banned Chinese nationals (Lovelace & Feuer, Feb. 7, 2020). In the U.S. there has been avoidance of Chinatowns and suggested boycotts of a Chinese restaurant, Panda Express. In one country, individuals in an Islamic mosque were surrounded and tested for fever. The sub-narrative here is that the “others” are the carriers of the virus, the ill, and they are the ones that threaten the domestic populations; here, shared humanity (biological and otherwise) is denied, and people have retreated to their own “tribes.”

In the early phases of a pathogen with pandemic potential, sometimes, information and various types of quarantines and light medical interventions are the only available defensive tools for the health of human populations. In these early phases, as in the “fog of war,” much is still unknown, and often, the rumors can be wild. In the face of fear, people have a “fight or flight” response. There are attendant risks of fear reactions by public groups and by law enforcement (including militaries) that may lead to violence. This is why health professionals emphasize “facts, not fear” or the use of information to mitigate the fear response.

False news of coronavirus infections in the country led to violent protests in the Ukraine, even though no confirmed cases of coronavirus infection exists. One account reads:

The trouble began as a plane carrying evacuees from China landed in Ukraine on Thursday. In a village in central Ukraine, where the evacuees were due to be taken to a health spa to be quarantined, local people began attacking police and tried to blockade the convoy carrying the evacuees. Residents at the village of Novi Sanzhary set alight tires and barricaded the road to the spa, before attacking the convey with the evacuees onboard. (Reevell, Feb. 21, 2020, p. 1)

The high levels of anxiety do not exist there alone but likely around the world. In China, hotlines were set up to help people self-quarantined to cope with mental health issues and their “psychological distress” (Baculinao, Shi, Wu, & Talmazan, Feb. 23, 2020, p. 2). Some people have gone to social media for support. On Chinese platforms, the hashtag campaign was translated as #howtodealwithfeelingveryanxiousathome, and at the time of one article’s writing, there were over 290 million views on Weibo (Baculinao, Shi, Wu, & Talmazan, Feb. 23, 2020). The research on whether people experience more (or any) negative psychological consequences is mixed, with some finding no significant difference between those under quarantine or not (Wang, Xu, Zhao, Cao, He, & Fu, 2011). As to whether people adhere to self-quarantines, one study found only 73% did, among both patients and staff exposed to norovirus (Rao, de Gier, Caram, Frederick, Moorefield, & Woods, 2009). An earlier study related to the 2003 SARS outbreak found that self-quarantines worked better when there was effective messaging from government authorities and the quarantine was seen as legitimate (DiGiovanni, Conley, Chiu, & Zaborski, 2004). A weak extrapolation from the prior quarantine research might suggest that self-quarantines, as quarantines in general, are porous and imperfect. They are also enforced in different ways in different social contexts, with some receiving

house visits from health professionals and others receiving digital reminders, and so on. In this outbreak, there have been multiple reports of people breaking isolation (for those infected or presumed positive) and breaking quarantine (for those not known to be infected) (Edwards, Mar. 3, 2020; Litvinova, Feb. 17, 2020). Government officials also worry about the lack of financial reserves of workers and are advocating for a large-scale federal bailout in the U.S. to encourage those who are ill to remain home and to enable businesses to request that their employees engage in telework, so that the scope of the outbreaks may be lessened and the healthcare systems not overwhelmed (Gottlieb, as cited in “Former FDA chief warns...,” Mar. 8, 2020).

The mass media articles collected in February 2020 around COVID-19 and SARS-CoV-2 have been around particular themes:

- scope-of-threat (how risky the novel coronavirus may be) and counting articles (how many are infected and where);
- how-to articles for common citizens (in various states: to remain healthy and avoid infection, to ride out an infection, to avoid infecting others)
- logistics articles (how countries are fighting the virus, mass expenditures, contact tracing, censoring, arresting activists, quarantines, travel alerts, border controls, evacuations; how foundations are fighting COVID-19; how biotechnology companies are fighting);
- new science approaches (vaccine research, human testing);
- second-order effects (potential effects on economies, supply chains, manufacturing, work life, technologies, stocks; potential effects on politicians and leadership)
- projections into the future (near-future, mid-future, far-future)
- human interest stories (people’s direct experiences and

predicaments with the outbreak).

In terms of the classic “5Ws and 1H,” the order of focus has been “what, who, when, where,” and then the “why” and the “how.” In an abstract sense, the articles began with a sense of it is them vs. us...and we can keep this virus out from local spaces. This came from the border controls and travel alerts. Then, as the reports expanded out with new encroachments in geographical space, it became a race of stamping out sparks of fire by isolating the ill and preventing the spread that way. Instead of “elsewhere,” the sense was, “here.” At various points, there have been shifts between the expected and the unexpected and the acceptance of so-called “new normals.” Emotionally, there have been sparks of mass anger, from blaming other countries or other practices, to refocusing on what will be beneficial in facing the actual challenges.

Beyond articles, there are various other information channels, many in real time, with live reports, live web logs, live alerts, and rolling continuous coverage on cable news. There are online “counter” and data dashboard sites that list the numbers of active cases, closed cases (recovered or dead), and deaths, among others. There are also often choropleth maps showing locations of the new infections. Information may be distributed with “visual explainer” approaches to simplify the messaging. Then, there are the Q&As (questions and answers) and FAQs (frequently asked questions). There are timelines of the viral outbreak. Some pages include collections of hyperlinks. “Online training” is seen as an important tool in fighting the emergent coronavirus (“Online training...,” Feb. 7, 2020).

The core information sources have been government health agencies, then news organizations (disseminators, working with professional analysts), and social media (disseminators, with common folk). There have been specialist informants from various universities, research laboratories, corporations, think tanks, and health organizations. As the information moves from the

center outwards, some of the accuracy may be affected. The seeking of stories outside of the main sourcing also adds different color to the issue.

Social Responses on Social Media

The fast-moving discoveries about the infections by coronavirus and the viral spread of information on mass media and social media caught people up short. On social media, people shared information about their fears of going out in public and the discomforts of self-quarantines. Some showed videos of emptied cities on their smart phone videos. Some complained about the unavailability of certain foodstuffs. Some showed photos of confrontations of people with police in full hazmat personal protective equipment (PPE).

Some who have fallen ill describe their firsthand experiences with the virus, with those experiencing milder cases sharing (uncontrollable coughing, in one description) able to share and those with more severe cases not (with reports of people losing the ability to talk, others with loss of consciousness, others with febrile seizures, and others). One early analysis has identified aspects of people that may make them more vulnerable: age, those with “chronic illnesses” (including “high blood pressure, diabetes, heart disease, chronic lung disease, or cancer”), and maleness (Shapiro, Feb. 22, 2020, pp. 3- 4). Perhaps it is not gender per se that is the differentiating issue but the rates of male smoking vs. female smoking in the Chinese context, with 50% of Chinese males regularly smoking and only 2% of Chinese females. (Shapiro, Feb. 22, 2020, p. 5). Other underlying health conditions that may have more severe effects with SARS-CoV-2 may include asthma, compromised immune systems, and other issues, in co-morbid interactivity. There is survival advantage to the young and healthy, without compromised immune systems. The severe stage of the disease occurs apparently some 3-6 weeks after infection, and for many, “the time to death is three to six

weeks” (Gottlieb, as cited in “Former FDA chief warns...,” Mar. 8, 2020).

Some brought humor as a coping mechanism. Some of the social imagery picked up in mass media articles show a family in a crowded room, with children in bunkbeds, waiting out a quarantine on a cruise ship. Others describe the claustrophobic sense of quarantines, even in the lap of “luxury” on a cruise ship, with tensions among those quarantined together (Wu, Feb. 22, 2020). One male passenger on the *Diamond Princess*, Matthew Smith, Tweeted images of the food on board ship (Schrader, Feb. 7, 2020) to deal with boredom. One meal involved two croissants, hash browns, sausages, bacon, a muffin, an apple, and “Japanese yogurt with aloe vera” (Gaynor, Feb. 8, 2020). Some earlier social images showed even a celebratory air of those quarantined on a cruise ship (Jamieson, Feb. 8, 2020). Another shared imagery (and video) showed a robot (named Little Peanut) delivering food down a long hallway of a hotel to those travelers from Wuhan quarantined in Hangzhou (Albrecht, Jan. 29, 2020). For some, the social sharing offers a way to connect socially and to contribute to the mass narratives and understandings. The various faces of SARS-CoV-2 (formerly 2019 n-CoV) are varied for those willing to share. Most trend younger. Some self-identify as being positive for the coronavirus. Others claim health and fear of the infected. Some works are purely for social sharing. Other works are framed as citizen journalism exposes of government suppression of data. Regardless, mass media professionals and health professionals alike are trawling mass media for crowd-sourced information.

As the virus moves between people and on objects (potentially), it seems that they are manifesting differently in different ways across populations. In the moment, the various locales of focus in mass media are wet markets, hospitals, airports, airplane cabins, cruise ships, apartment buildings, streets, people’s homes, border crossings, restaurants, schools, and other locales. A macabre

guessing game has arisen about where the viral infections will turn up next. There is a phantasmagoric element, perhaps informed by “pandemic” games and movies and zombie apocalypse meta-narratives. (Some of the shared social imagery refer to these ideas directly. For example, one sign reads: “Quarantine Zombie Outbreak: No one shall enter or leave this area without written permission of the local health authority. Anyone found violating this regulation will be fined not less than \$100.00 nor more than \$1,000 for each violation. (US Art. 673).” Another reads: “Warning: Zombie Outbreak. This area under strict quarantine. Authorized personnel only.”

In the real, countries with different healthcare systems and resources will have different levels of ability in protecting their population’s health. With the community spread, where the viral chains cannot be accurately traced person-to-person, the reports of presumptive positives are rising, and the risks are from both without (outside the country) and within (inside the country). “Community spread” refers to a state where there are chains of infections and clusters without ability to identify back to the source through contact tracing (MacKenzie, Feb. 24, 2020). At this point in the disease spread, with falling efficacy of the stoppage of people’s movements, generally, attention turns somewhat more to health mitigations and monitoring and surveillance, to best use scarce resources, and not to continue so-called “medieval” approaches of lockdowns and stoppage of human movement. Public health officials suggest that there are risks and benefits to any of a range of decisions that can be taken, and the proper timing may be difficult to discern. Disruptive interventions may be triggered based on new data, but community mitigations may interrupt people’s regular lives and interfere with livelihoods, so some consideration has to go into what measures are reasonable to ensure the public health while enabling regular societal functioning where possible.

Certainly, there are various types of self-expression around this

outbreak. One article described a painter “known for a particular style of cell biology paintings, in which he emphasizes that molecular processes in our body don’t stand on their own (despite how they’re usually shown in textbooks), but that all these components are part of a crowded environment” (Amsen, Feb. 10, 2020, p. 2). This depiction is of a complex visual. Here, the first coronavirus sketch was initially shared via Twitter on January 27 and evolved over time (Amsen, Feb. 10, 2020, p. 3). The final one was completed Feb. 5 and is “a close approximation of what a coronavirus looks like, showing the spike proteins in pink, the nucleocapsid in lavender and the mucus background in a suitable greenish yellow” (Amsen, Feb. 10, 2020, p. 5). At present, David S. Goodsell, the artist, hosts the image on his “Molecular Art | Molecular Science home page (<https://ccsb.scripps.edu/goodsell/2020/02/10/409/>). While people may take a human-centered view, the art might suggest a more nature-based and systems-based one. And yet, there is also something of a *femme fatale* feeling to the painting, beautiful and deadly and alluring. [This article and others show a fresh angle to the news story, many by freelancers or “stringers” with unique angles based on their access to information, their respective unique locations, and their fresh ideas. Some articles from less reputable publishers are clearly click-bait, designed to attract human traffic and clicks on their articles to sell to advertisers as “attention.”]

The pandemic potential of SARS-CoV-2, a zoonotic virus which causes COVID-19, has captured the world’s attention, through formal mass media and informal social media (esp. social imagery and social video). To contextualize this social image analysis and video transcript analysis work, the set of 669 articles were read and coded, resulting in the prior summaries. The reading and the visual analytics was interleaved so each could inform the other (This may be seen in Steps 3 and 4 in Figure 1 shown earlier.). This work explores multiple social imagesets (thousands of images) from Google Images (captured from various seeding terms related to the outbreak) and social video transcripts from

Google's YouTube platform to infer focuses of mass human attention in terms of (1) messaging and information sourcing, (2) meta-messaging and subtexts, and (3) invisibilities (what is not expressed). This compares the imageset messaging against mass media articles from the same time frame. This work has implications for a mass-scale social response to an unfolding global biosafety/biosecurity risk based on learning from more organic and emergent social communications.

A general sequence of topics may be discerned from a close read-through of the respective articles in the collection. (Table 1)

General Topical Time Order of Mass Media Articles about the Novel Coronavirus (February 2020)

What is coronavirus? What are its features? How does it behave in the world?

How much of a threat is the coronavirus? What is the scope of the threat?

What are the modes of transmission?

What is the death rate? Infection rate? Do super spreaders exist? Can people be reinfected (or do they develop some defense)?

At macro levels? At meso levels? At micro levels?

What are comparable viruses in the past?

What is community transmission?

How can one protect oneself? (various how-to's)

What is personal protection equipment (PPE)? How should masks and gloves and clothing be worn?

What is hand hygiene?

What are fomites?

Where is the coronavirus from? Was it (1) evolved in nature or (2) human-made or (3) researched and accidentally released?

How accurate is the information from various government sources? What is misinformation and why?

What sorts of frauds are occurring in relation to this disease outbreak?

Who are foremost (and recognizable) human personalities in this issue?

What is the formal way to name this viral pathogenic agent? The disease?

What is contact tracing? How effective is contact tracing?

Where are outbreaks occurring? Cruise ships? Vacation islands off Spain? Why?

What are the various government interventions? Messaging from public health officials?

How effective is forced quarantine?

How effective is forced quarantine across various physical contexts and situations?

How are people coping with quarantine? How do they use humor? How do they handle psychological pressures? How do they deal with anxiety?

How effective is self-quarantine? How effective is home quarantine?

How effective is social isolation?

What medicines or therapeutics are effective?

What hospital medical care is most effective?

Can the virus survive out-of-season (winter), or does it seem to be able to manage year-round? \

Has community spread begun?

How are societies coping with the disease outbreaks?

What is meant by xenophobia?

What are social strifes?

In the long-term and the short-term:

What are the **political** implications of these outbreaks (and resulting interventions)? For governments? For leaders?

What are the **economic** implications of these outbreaks (and resulting interventions)? For governments? For societies? For individuals?

What are the **manufacturing** implications of these outbreaks (and resulting interventions)?

What are the **tourist** implications of these outbreaks (and resulting interventions)?

What are **lifestyle** implications of these outbreaks (and resulting interventions)?

Can scientists come up with an effective vaccine? Medicine?

Will COVID-19 become a permanent and established part of the human microbiomes?

What are ways to protect the public health while balancing other concerns such as people's need to work and live? What are ways to intervene without causing extensive public disruption? Economic disruption?

Table 1: General Themes on a Time Trajectory for Mass Media Articles in February 2020

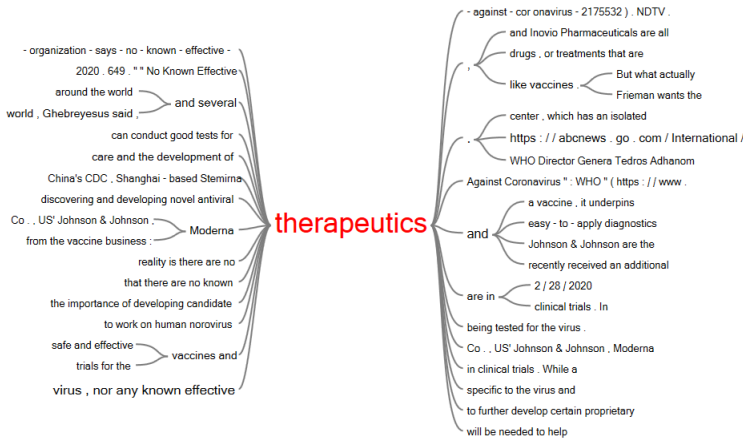
There are some ways to use computational text analysis to provide a visual sense of the works. A word cloud indicates some of the main focuses of the haul of articles (Figure 2).



Some themes may be observed from the mass media articles: expanding outbreaks globally, 2019/2020 outbreak, and China as epicenter.

Figure 3: A Cluster Diagram of Collected Emergent Coronavirus News Articles

An extracted word tree around “therapeutics” suggests some major challenges ahead. (Figure 4)



This visual shows lead-up and lead-away texts from “therapeutics,” a point of hope for mass humanity to protect life.

Figure 4: A Word Tree Surrounding “Therapeutics” from Collected Emergent Coronavirus News Articles

Emergent COVID-19 and SARS-CoV-2 in Social Imagery and Social Video: Initial Three Months of Viral Dispersion

In a disease outbreak, there is not only disease surveillance but also social surveillance, of postings on social media. In this outbreak, some of the major social media platforms (Facebook, Amazon and Google) have met with the WHO to “stop coronavirus misinformation” (Farr & Rodriguez, Feb. 14, 2020). However, misinformation has been found to have been spread around this novel coronavirus outbreak, contesting “basic facts, basic science” and fomenting conspiracy theories (“Coronavirus misinformation spreads...,” Mar. 2, 2020) and other conjurings. Some foreign governments are thought to be the sources of some

of this misinformation (“Coronavirus misinformation spreads...,” Mar. 2, 2020). With a sufficient size of public awareness and commentators, various interpretations tend to emerge.

This work combines multiple types of information to understand the information from mass media and social media in the third month of the COVID-19 outbreak to understand the basic facts as known at the time period and to see what social images were being shared on Google Images with multiple different comparative seeding terms (and also what information was shared on social videos on Google’s YouTube). The general sequence of the work may be seen in Figure 1. (The articles were collected from Feb. 8 – Mar. 1, 2020, but these included works published from late January onwards. The social imagery were all collected on the same day with the same means, on Feb. 17.)

Manual Analysis of the Five Social Imagery Sets

While the social imagery is analyzed in a bottom-up coding style, there were some basic questions asked to help guide the coding. In retrospect, there is a kind of binary built into many of the questions:

- How is health danger depicted? How is biological safety depicted?
- Do they show understandings of the underlying science, even in a popular sense? Or are they misrepresentational?
- How is risk depicted? How is uncertainty depicted?
- Are issues sensationalized? Politicized?
- Are visual ideas socially constructive or not? Are they helpful or not? Are they prosocial or not?
- Do they promote social rifts?
- Do they show social rifts?
- Do they show racism? Xenophobia?
- Are victims of the pandemic only of a particular race

and ethnicity? A particular demographic?

- Are bio-threats depicted as particular demographics of individuals?
- Are victims de-humanized or objectified?
- Do the social images encourage proper biosafety/biosecurity behaviors?
- Do they promote personal hand hygiene? Do they promote environmental sanitation?
- Who are the human personalities here?
- Who do the communicators (sharers of social imagery) respect? Disrespect? How is this shown?
- How is government depicted? How is citizenry depicted? Are they depicted as working together, or at odds?
- What do the social images suggest about how the broad public will respond to the epidemic / pandemic?

The seeding terms were five different ones: “quarantine,” “coronavirus,” “coronavirus quarantine,” “influenza,” and “flu.” These terms with the related social imagery tags on Google Images may be seen in Table 2. All five sets had some shared images from the current emergent coronavirus outbreak, but they had unique aspects as well.

Seeding Terms (for Google Imagery Searches)	Social Imagery Tags (in original form and order)
quarantine	movie, zombie, symbol, biohazard, cartoon, flu, city, jennifer carpenter, australia, jay hernandez, outbreak, medical, disease, hazmat, office, room, cdc, bubble, lego, angela, sign, real life, suit, infectious disease, plastic, poster, fish, laurel halo, wallpaper, ward
coronavirus	sars, human, mers, transmission, replication, middle east, pathogenesis, prevention, life cycle, fip, treatment, map, discontinuous transcription, common cold, labeled, recombination, pneumonia, rhinovirus, oc43, virion, helical, feline, phylogenesis, feline, phylogenetic tree, pathophysiology, microbiology, capsid, novel, particle, bat, family [“FIP” is “feline infectious peritonitis”.]
coronavirus quarantine	outbreak, quarantine zone, youtube, southern california, little peanut, tel aviv, disease, fanling, robot
influenza	virus, flu, cartoon, pandemic, disease, treatment, structure, poster, hemagglutinin, prevention, microscope, diagram, vacuna, gripe, infographic, respiratory system, causes, cold, labeled, hospital, human, type a, seasonal, sick, cdc, contagion, ah1n1, electron microscope, transmission, pneumonia
flu	cartoon, influenza, cold, sick, virus, fever, clipart, sore throat, vaccine, woman, man, stomach, nose, infographic, cough, prevention, child, animated, baby, treatment, headache, transparent, cdc, person, humor, boy, pandemic, cute, ill, diagram

Table 2: Seeding Terms for Google Imagery Searches and Related Tags

A screenshot of portions of the social imagesets may be seen in Figure 5.



**Five Semi-Related Social Imagesets Related to the Emergent Coronavirus Outbreak
(Three Months In)**

This visual shows a screenshot of parts of the five social imagesets.

Figure 5: Five Semi-Related Social Imagesets Related to the Emergent Coronavirus Outbreak (Three Months In)

“Quarantine” social imagery (877 images). The “quarantine” set showed various types of quarantining including those of goods, food animals, fish, and particular products that may include non-native insects. This set included a number of signage indicating

“quarantines” from commercial stock imagery. (Most of these are “keep out” images as if the viewer were not infected...as contrasted to the social imagery of people who were under quarantine with unknown statuses, maybe even to themselves.) There were images from electronic games, movies, and books around quarantines. There were some jokes about quarantines, such as in relation to Brexit...and a man sleeping in a tent in his yard while on a political ad quarantine. Some images related to the coronavirus show “witnesses” with photos of people in full hazmat gear in various otherwise-normal locales, an autopsy room, people in lines waiting to pass health checks, and others.

“Coronavirus” social imagery (657 images). This set showed various informational graphics and electron microscope images of various viruses.

“Coronavirus quarantine” social imagery (730 images). This image set showed a lot of from-life imagery of emptied streets, people in hazmat suits, government officials speaking from podiums (political leaders in front, professional staff beside and behind them), people stepping off planes and being doused in some sort of disinfectant, photos of journalists on docks next to quarantined cruise ships, emptied lounge areas, busses for the transport of people possibly exposed to SARS-CoV-2, adults and children wearing facemasks, airplanes, ambulances, signage, maps, and others. A sign at a military base reads: “Warning Hazardous Live-Fire Training Area.” One potent image shows a person lying on his back in the street and covered, with three people in hazmat suits standing back, and a woman in the foreground walking a bicycle by. One shows a woman in home quarantine with her family, who are in the basement. She is in full protective gear, and she is laying a plate of food on the basement stairs for her family below. There are selfies of individuals wearing face-masks. There are people hurrying along with their luggage. A person in a wheelchair is having her temperature taken with a device at her forehead. Many of the electron microscope images

of the virus are in grayscale or toned with light green or light blue, but the illustrated ones of the virus use warning colors (orange, yellow, red). One astute illustration shows people of all colors and genders wearing facemasks, which helps break the narrative of photos of people of Asian descent wearing facemasks and being tested for their temperatures based on the epicenter of the outbreak. Some images show people's heat signatures as they walk by temperature-checking stations at airports and railway stations and other locations. Some images show lives interrupted: a couple at their wedding, athletes at practice, and others. Some photos show people in full hazmat suits decontaminating an airplane's porous cloth seats with little spray bottles (instead of doing full fumigations).

In this full set, 97 of the images (13%) showed individuals standing alone in the shot (and there were another 10 images where people were at a podium or in front of a television camera addressing an audience. This brings up a sense of just how often people are social and in groups, dyads, triads, and crowds. This begs the question of how people will do in social isolation, and whether they are comfortable being alone.

“Influenza” social imagery (951 images). This set shows diagrams of various types of the flu virus, diagrams of the mechanics of its function, prevalence data visualizations, choropleth maps, and other similar images. People are shown in facemasks, and some of the images show drawings of people lying in bed and not feeling well...but without the sense of a dire threat.

“Flu” social imagery (915 images). This set shows adults and children with sniffles and sitting under blankets holding a mug. They show a person's arm in a muscle pose as if they have power and choices in their health. The “flu bug” is shown as a cartoon character with a face and a giant grin and big eyes. The messaging here is about the inevitability of the flu...and a message of it being manageable and something of light misery. A diversity of

the human population in race and gender and age are depicted here.

So what do the various sets show altogether?

- (1) Messaging and information sourcing
- (2) Meta-messaging and subtexts
- (3) Invisibilities (what is not expressed)

(1) Messaging and information sourcing

In the social imagery around the novel coronavirus, the extracted thematic messages are as follows, in descending order of frequency:

- **The threat is real.** The novel coronavirus is a serious global threat. The maps show the spread of the SARS-CoV-2 infections around the world. The spread is mostly invisible and so evoke massmind surprise.
- **Government knows best (at least with what is knowable).** People need to listen to their respective government officials. This is a time of unusual measures, in which government can override civil liberties and personal freedoms, with the military, the police, border agents, and others able to stop anyone and quarantine them.
- **If you're infected, you're a temporary "enemy of the state."** There is a sense that those who are infected can be mass-incarcerated, forcibly tested, removed from one's home, and stopped at any of the world's borders. The visuals show dire atmospherics around the infected.
- **This is going to be expensive.** The economic disruptions, manufacturing stoppages, social disruptions, gov-

ernment interventions, and burdens on healthcare will be expensive to taxpayers around the world. There are invisible costs as well. Those who are tested and quarantined may or may not have their costs covered by government, after the initial wave of testing (to help inform epidemiological work), to map the spread of the novel coronavirus. One individual who had asked to be tested stateside ended up with a bill of over \$3,000 for all the related work (Conarck, Feb. 24, 2020). For those who are uninsured, their personal finances will take a hit, and even the insured may not be guaranteed coverage. This suggests that people may be disincentivized to report given the potential cost, which may mean less accurate surveillance.

- **Social ties are fraying.** Societies are in a partial breakdown, with emptied streets full of garbage, people isolated in their homes, stores with empty shelves, hospitals overwhelmed with patients in hallways, and draconian measures on the streets. Where this all ends may be a shift to a “new normal,” where people engage with each other differently. The casual intimacies may slow, and people may be more mindful of how they interact and what routes of transmission they are exposing themselves to with every decision. Or if past is prologue, people will lapse into “global amnesia” after various human endeavors help the spread end (Holcombe, Mar. 3, 2020).
- **The global order is at risk.** The global order is fracturing, with border blocks, lockdowns, and accusations.
- **The general public is playing catch-up with information.** Some of the social imagery suggests a blithe public unaware of the risks and caught up in the “adventure” of being stranded on a boat or a cruise ship... Others, though, indicate the disruption of being evacuated under the shadow of a potential pandemic, with one showing a young man in a facemask and his writing

that at that point of his evacuation, after “travelling for 40 hours,” he is “mostly grease at this point.”

(2) Meta-messaging and subtexts

- **“It’s actually happening.”** One meta-message is that all the years of warnings from fiction (video games and movies and books) is finally coming true, and the “end of days” may be near. (There is a catastrophizing theme.) One researcher observes: “The Hollywood outbreak narrative is a classic because it so effectively plays on our fears about globalization, immigration, ineffective borders and invisible threats” (Schweitzer, Mar. 8, 2020). Whereas people were voyeuristic prior about mass disease and death, this contemporaneous reality brings to light the actual seriousness of such a context.
- **Social breakdowns are occurring.** Another meta-message is that there are serious limitations to a number of critical entities: governments, medical science, corporations, financial systems, and others. Government missteps are called out by journalists and insiders. Medical science may be suggestive of particular truths, but at this time, convergence has not occurred for many fundamentals. Corporations have taken a lead role in protecting their workers by encouraging their telework, but other corporations are described as offering small financial inducements for people to follow through on their cruise trip reservations even as the popular narrative is that they cannot maintain sufficient sanitation or air filtration to protect against novel coronavirus spread. Supply chains are sorely strained and even broken for many products. In terms of concepts and practices, globalism is under strain, and there are cracks in the façade.
- **“You’re on your own.”** Another message is “you’re on your own.” Government and other functions seem to

have stretched resources beyond breaking, and many of the expectations that citizens have of their respective governments seem to have gone by the wayside. Cruise ships do not have BSL 3 or 4-level ability to isolate viruses. People in their homes do not have access to ventilators or ways to treat the ill.

- **“We’re here for you, from a physical distance but a social and digitally mediated closeness.”** A positive message is that the broad global community is connected via social media and are rooting for each other. On social media, people are willing to share a laugh...and commiserate over the government-enforced quarantines and lockdowns and self-quarantines. Social media may help mitigate what novelist Liz Moore calls “an oversoul of loneliness,” defined as “a connectedness among the world’s lonely” (Moore, 2012, p. 317). If the human condition is about being alone, it is also about connecting in bridges across that loneliness. It is about the drama of personal, lived stories, their sharing, and empathic understandings by others.

(3) Invisibilities (what is not expressed)

There is a WYSIATI (what you see is all there is) assumption among some but not others. This cognitive bias is a limiting one, and it should always be assumed to be wrong in every context. Not everything relevant in any context is wholly seeable, much less observed. The social visuals around COVID-19 and SARS-CoV-2 are about invisibilities, viral filaments that are only seeable with electron microscopes.

- **24/7 work, planning, and projections.** Certainly, the ramp-up of endeavors by epidemiologists, health experts, data analysts, scientists, modelers, and policy makers has long gone into over-drive, with non-stop work. Given a naïve population without natural protec-

tions against the novel coronavirus, time is of the essence. The professionals in the field need to assess risk accurately as the collected data converge on particular probabilities that enable extrapolations of risks and rates of infection, death, and recovery, among others. National security folks are likely on high alert, and there is non-stop work all around the world, to understand implications and enhance decision-making and resource provisioning and other work for domestic containment (stopping the spread of infectious diseases among the peoples of the country). [For contagious disease experts, such outbreaks are factors of not if but when, given human lifestyles in a complex biological world (Davies, Feb. 5, 2020).]

- Plans are being made and updated on the fly as new information emerges.
- **Malicious misinformation.** There are reports now of government-sponsored misinformation around SARS-CoV-2 to disrupt other countries. There are reports of the Russian Federation targeting the U.S. with erroneous messaging. The #fakenews phenomenon has been documented by multiple sources. (Wolff, Mar. 4, 2020) The misinformation has become so prevalent that there is actually a Wikipedia page titled “Misinformation related to the 2019-20 coronavirus outbreak” at https://en.wikipedia.org/wiki/Misinformation_related_to_the_2019%E2%80%9320_coronavirus_outbreak. Common themes include shutdowns of cities and nations (Lytvynenko, Mar. 16, 2020; Schiffer, Mar. 16, 2020). Government officials suggest that such misinformation is to foment panic and social strife and social disarray. In a time of crisis, opportunists and malicious individuals will emerge. (One sheriff made this point by posting on their police media feed to ask criminals to take a hiatus from crime during the coronavirus outbreak. One way to interpret his commentary

is that even in times of crisis, crime does not take a holiday. People need to be vigilant and careful. They need to engage with police in community policing.)

- **Fear and anxiety.** As the information has become more salient to broad populations, there have been actions that may indicate fear and anxiety: runs on stores to shore up supplies at home, withdrawals of funds from various stock market investments and a “flight to safety” in bond investments, social leeriness, and other reported behaviors. There are xenophobic messages. There are racist comments and violent actions. These are some of the observables. What is not directly visible is the sense of nervousness in people, stemming from having to face an unknown, and dealing with discomfiting emotions.

The broad public is almost never privy to the hidden hands of government so as not to spook them and to not encourage rumor-mongering or to muddy messages. Messages are kept simple. What the public sees is also limited. Those members of the public who are parts of the various teams are not at liberty to share, in general.

So what does this all mean for digital services in a time of crisis, in this case a complex one involving biosafety/biosecurity and economic impacts?

- Government has to make sure that their exposures to public are constructive and prosocial. Their more extreme actions have to be understood as prosocial. Screaming matches with the public and the uses of force on people not wearing masks in public seem counterproductive. (This was captured by a member of the public and shared globally.)
- The free access to social media is an important part of people’s coming with fast-changing contexts. People find solace in sharing their predicaments with others,

and others (journalists, public health professionals, government officials, and fellow citizens) can benefit from the insights of people in all their respective contexts.

- People often use social media to filter their news, and to help them decide how to make decisions and what actions to take. Social media offers important insights for people.
- The social imagery may be viewed as an indicator of massmind moods, sentiments, and partially of their understandings of the challenges and what is asked of them.

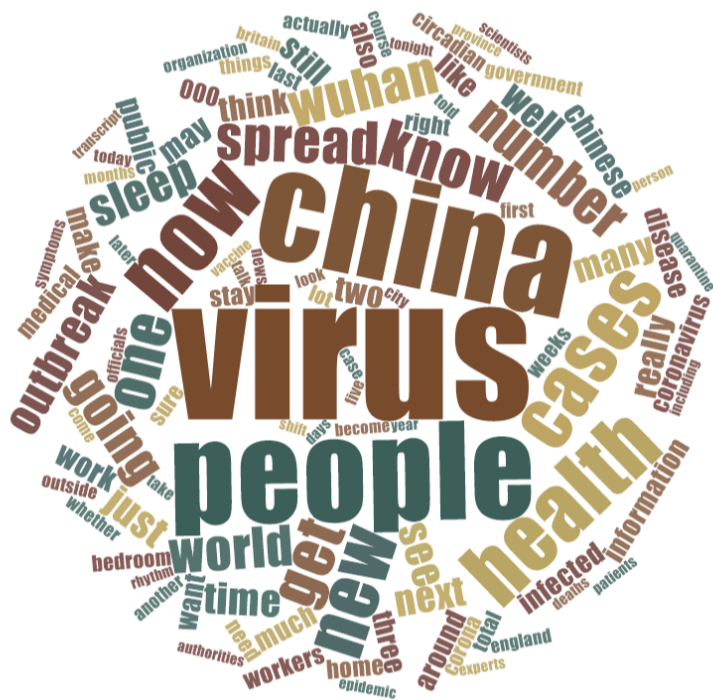
SARS-CoV-2 stems from an as-yet unknown original host animal species (Bats?) and as-yet unconfirmed intermediate host animals (Pangolins? Snakes?). At present, it is thought that the intermediate host is the pangolin, based on a report from scientists from the South China Agricultural University reported in the government-run Xinhua News Agency and other media sources (Ricard & Castelnau, Feb. 8, 2020, p. 2). Pangolins are described as “an endangered animal that looks like a scaly anteater” (Sheehy, Feb. 7, 2020, p. 1) and a “scaly mammal” (Guzman, Feb. 2020) and “an endangered, highly trafficked creature that looks like a cross between an anteater and an armadillo” (Achenbach, Feb. 7, 2020, p. 1). It is reported that the “genome sequences of viruses in pangolins to be 99 percent identical to those in coronavirus patients” (Guzman, Feb. 2020; Cyranoski, Feb. 7, 2020, p. 2). There is an initial report that suggests that a human may have infected a pet dog (Sanchez & Lockwood, Feb. 29, 2020). [Food animals are consumed around the world, both farmed and wild-grown. For many, the consumption of bush meat and wild animals (as protein) is critical for survival.]

Social imagery during a crisis shows a very lived sense of the issue at a personal ego-based level. The people are individuals caught up in the moment, and they are the witnesses of various actions by the government, by their fellow citizens, by others,

and by themselves. These images are often surrounded by narratives through shared narrations (voice) and ambient sound and their own writing. The production values may be low, but many of these from-life factors are mitigated by the quality of the smartphones and the cameras (even at night, even with motion). For many sharers, there is an innocence around the sharing, without privacy protections or faces fuzzed (or covered) or locations hidden or metadata occluded or omitted.

Social videos. Social videos around this epidemic tend to repeat data from other mass media sources, in a way that may be consumed as “transient” information. These focused on simple messaging, mostly around how people may stay safe but also what they should do if they suspect that they may have been infected. Many are critiques of responses to-date and some “armchair quarterbacking.”

A computational analysis of the transcripts shows focuses of the respective videos. (Figure 6)



Social video shows simpler summary topics and lived experiences and lived concerns.

Figure 6: A Word Cloud from Social Video Transcripts Related to the Novel Coronavirus Outbreak

Autocoded themes show a focus on top-level topics and related sub-topics. (Figure 7) These provide a gist of the initial narratives related to the outbreak.

Figure 8: Autocoded Sentiment Analysis of the Social Video Transcripts Related to the Novel Coronavirus Outbreak

Digital services in transnational crisis. In terms of digital services in crisis, social media platforms are harnessed by professional message-makers along with the general masses.

For official messaging, government officials, doctors, national security personnel, and others need to be factual, clear, and accurate about the proper self-protection and other-protection behaviors of a broad populace. They have to walk a fine line between shaping fear so people are not oblivious to the risks but not to amp up the fear to a point of panic and catastrophizing, where people “freeze” or act irrationally or go to fatalism and passivity. Their goals are to promote both biosafety and biosecurity.

With any sense of population threat, complex disease science, and wall-to-wall media coverage, the misunderstandings can become rampant and the rumors wild. (The author was riding a shuttle bus when the driver mentioned her ideas that the novel coronavirus was from a government lab and was released for “population control.”) These may be transferred on public channels and private encrypted ones, and they may be textual, visual, and often multimodal. Social imagery is created by people for people, and these are inherently vague and ambiguous, multi-dimensional, and multi-meaning. The study of such imagery may provide a fresh angle at understanding mass-scale social responses to an unfolding global biosafety/biosecurity risk.

Discussion

In the face of extreme threat, there are positive and prosocial behaviors and there are negative ones. Generally, it is positive for people to stay informed, understand the world factually and based on empirical data, maintain social order, treat others with

respect, cooperate with government officials, be prepared for various eventualities, and others. In this particular case, some of the pros and cons of behaviors by the world citizenry (in various levels of scale) are depicted in Table 3. The understanding is that time is of the essence, and resources are limited, and human lives are on the line. This is a “push comes to shove” moment, to use a common colloquialism.

Pros of Strategic Messaging around COVID-19 and SARS- CoV-2	Cons of Strategic Messaging around COVID-19 and SARS- CoV-2
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<p>Micro Individual (Ego) Level</p> <ul style="list-style-type: none">• Stay informed through trustworthy sources (and be able to discern truth from lies)• Engage the COVID-19 and SARS-CoV-2 information factually and based on empirical research• Maintain social order by following reasonable directions from government officials• Treat others with respect• Avoid stereotyping others• Set up a household for potential self-quarantining (sheltering in place), if necessary, with proper supplies for the 14-day period• Maintain proper hygiene• Maintain proper sanitation• Avoid spreading rumors• Engage in proper social distancing• Cover coughs and sneezes• Stay home when ill• Support those in need, such as the elderly in their grocery shopping	<p>Micro Individual (Ego) Level</p> <ul style="list-style-type: none">• Use improper hygiene methods (and cross-contaminate physical spaces)• Engage in unnecessary risk by going to crowded spaces• Travel to disease epicenters and “hot zones” where outbreaks are occurring (visibly or invisibly)• Communicate incorrect information (rumor-monger)• Fail to cooperate with government health authorities• Foment panic and alarm among social group and others• Stereotype others, such as by perceived race or ethnicity• Promote xenophobia or fear of foreigners and the foreign• Take advantage of others through scams• Cause runs on respiratory masks by buying them unnecessarily• Hoard necessary foods and other goods for self-quarantining (and denying access to others and driving up prices)• Fail to support family, friends, neighbors, and the larger community
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Meso Societal (Group) Level	Meso Societal (Group) Level
<p>Governments</p> <ul style="list-style-type: none"> • Set up proper leadership and empower that leadership to take the appropriate actions • Set up expert task forces • Put wise and effective policies in place • Put wise and effective practices in place • Activate emergency plans as appropriate (and de-activate at the right time) • Provide necessary resources to the respective arms of government • Share relevant and accurate information • Coordinate effectively among local to global entities • Share research accurately and appropriately • Support relevant industries • Aid countries with restricted resources (as available) • Maintain sanitation services 	<p>Governments</p> <ul style="list-style-type: none"> • Fail to take necessary actions • Fail to create the bureaucratic structures for addressing the crisis • Level blame against other countries • Level blame against particular groups of people • Misattribute causes • Fail to act in good faith with other countries • Share misinformation • Cast aspersions • Act in discriminatory ways against others' citizens <p>Citizenry</p> <ul style="list-style-type: none"> • Public figures foment conspiracy theories, stereotyping, unsubstantiated rumors, and other negative messaging <p>Private industry</p>
<p>Citizenry</p> <ul style="list-style-type: none"> • Take proper hygiene actions • Maintain civility • Maintain social order 	
<p>Private industry</p> <ul style="list-style-type: none"> • Those able to create jobs for this displaced by the "movement of people" restrictions of 	<ul style="list-style-type: none"> • Discriminate against people and people groups • Do not practice sufficient sanitation • Have employees that do not practice sufficient hygiene • Spread rumors and fear due to misinformation • Encourage employee travel to "hot zones"

<p>governments (Thorbecke, Feb. 12, 2020)</p> <ul style="list-style-type: none">• Those that can produce goods for the population needs do so (such as through surge capacity)• Build substitute or new supply chains to ensure business continuity (and consumer support)	<p>where the disease is endemic and / or spreading</p> <ul style="list-style-type: none">• Engage in price-gouging; engage in hoarding and profiteering• Misrepresent the features of goods, products, and services• Cut corners in production (especially with supply chains under pressure)
<p>Macro Global (Human Population) Level</p> <p>Global entities</p> <ul style="list-style-type: none">• Provide critical leadership• Provide critical expertise• Provide resources to the proper organizational entities (strategically and fairly)• Collect and share relevant information• Communicate inclusively• Include the global community of nations• Show respect for peoples• Shore up “too big to fail” systems	<p>Macro Global (Human Population) Level</p> <p>Global entities</p> <ul style="list-style-type: none">• Fail to provide critical leadership• Tap irrelevant expertise• Share erroneous information• Fail to support all members in an egalitarian way• Work non-inclusively• Fail to show respect for peoples• Waste time• Waste resources• Make the epidemic worse• Fail to shore up systems; enable breakages from fragility

Table 3: Pros and Cons to the Strategic Messaging around COVID-19 and SARS-CoV-2 Three Months In at Various Scales

At the micro, meso, and macro levels, there are unique challenges of learning, research, focus, decision-making, resource applications, and other factors. At the macro level, there are the challenges of so-called “disease diplomacy” (Belluz, Feb. 10, 2020, p. 1), with global leaders needing to respect the leaders and peoples of various countries while cajoling cooperation and effective disease-fighting efforts. There are needs to maintain multiple macro-scale systems that humans need to thrive in community, such as maintaining population health, protecting health workers, supporting “economic stability,” and others (Frieden, Feb. 25, 2020, p. 2). There are also needs to ensure that people stay in their respective labor markets and not withdraw. There are needs for people to engage as consumers and not pull back into their own spaces.

Future Research Directions

The combination of the social image analyses, social video transcript analyses, and mass media articles around the outbreak of COVID-19 from SARS-CoV-2 may be summarized at a very high level as a mix of known knowns, known unknowns, unknown knowns, and unknown unknowns (Figure 9).

	known	unknown
known	<div>known knows</div> <ul style="list-style-type: none">• Prior viral disease outbreaks• Coronaviruses• Prior quarantines• New technologies ...	<div>known unknowns</div> <ul style="list-style-type: none">• Relevant questions• What is required to answer (through any legitimate means) ...
unknown	<div>unknown knows</div> <ul style="list-style-type: none">• Extant research (but unaware of applicability)• Information ...	<div>unknown unknowns</div> <ul style="list-style-type: none">• Mysteries• Currently unavailable knowledge given current capabilities ...

**Some COVID-19 / SARS-CoV-2
Knowns and Unknowns in Real Time**
(in a 2x2 table)

This 2x2 table shows some known knows, unknown knows, known unknowns, and unknown unknowns about SARS-CoV-2/COVID-19, in early days.

Figure 9: Some COVID-19 / SARS-CoV-2 Knowns and Unknowns in Real Time (in a 2x2 table)

The science-based questions raised in this global-scale disease outbreak will take years to fully study, with current methods and technologies and future ones.

How did this virus evolve?

What capabilities did it evolve to be able to infect humans?

What are ways to prevent its efficacy in causing disease in humans?

- How long do human immunities from antibodies last?
- What treatment interventions may be used against

SARS-CoV-2?

- Are there vaccines that may be developed against this threat to human health?
- What policies and practices are most efficacious against such disease outbreaks? To slow to spread? To achieve containments?
- What are actions to avoid and why? (The crisis event post-mortems will take years given the complexities and the “unknown unknowns” at present. These will likely include in-depth counterfactuals and alternate approaches and modeling of what would have happened had decision makers and actors taken on different endeavors at different times, with available resources.)
- What are ways to protect the social fabric and social order?

One central one in the public mind will be how this virus originated, whether it emerged from a wet market in Wuhan, Hubei Province, in the PRC, from natural mutations or some other means. (One question posed by several articles is whether the pathogenic strain of coronavirus may have escaped from a biosafety lab, or worse, a bioweapons lab, with the seeding story from named scientists from multiple institutions of higher education in the PRC.) Another one will be when it actually emerged, and if the mid-December 2019 date is accurate. Certainly, how the virus manifests in different geographical regions will be of interest. There will be further studies of how the virus affects people, in different demographic slices (and with different health statuses). Whatever is learned will optimally be applied to yet future disease outbreaks and coordinated protocol-driven responses that will be most efficacious and non-wasting of time and resources and lives. There have been media mentions of possible studies of communities with blood tests for antibodies for evidence of past infections of SARS-CoV-2 that may have man-

ifested asymptomatically (or sub-clinically) for deeper insights about community spread and other factors.

As to follow-on research for this work, it may be helpful to apply the three-part approach of studying “(1) messaging and information sourcing, (2) meta-messaging and subtexts, and (3) invisibilities (what is not expressed)” in different social media platforms (by brand, by type, by language, by region, and others). There may be insights by shared social imagery in different regions in particular time periods.

In the narrative Ian Bremmer’s “G-Zero” world, does the COVID-19 disease outbreak further weaken globalization by sending various nation-states into social distancing and mutual isolation, or does it help integrate them against a shared viral enemy? Does the global social order unravel further, or does it start to be put back together based on leadership and shared interests?

Conclusion

In somewhat early days, there was the sense that a “quick recovery from coronavirus” would occur (Ziady, Feb. 22, 2020). Many depictions in social media showed a blitheness, with people walking around deserted streets marveling at the emptiness and the *spectacle* of it instead of more directly taking precautionary measures. Those quarantine on cruise ships were focused on the free food (and even those in quarantine in the U.S. were bragging about how they had access to 24/7 food). Some of the quarantined have filled time making social memes. One shows a bus driven by a person in full hazmat clothing, with the words: KEEP CALM AND CARRY ON. As time has passed, there seems to be real cause for deep concern for human health. In early days, makeshift facemasks were created from “sanitary pads, bras, and even fruit” (Perper, Feb. 8, 2020, p. 4), and people wore inflatable costumes (p. 3); people bought condoms to pass the time (p. 6);

some 200 users of WeChat joined a group “looking for love under lockdown” (p. 7). A recent work showed how masks have entered the mainstream and part of how people accessorize and self-express (Venkatraman & Kesslen, Mar. 1, 2020). However, those who’ve been paying attention have had a crash course in biology, and optimally, their amateurish “mental models” are aligning a little more with expert “conceptual models” about the health threat.

Historically, this outbreak is “only the sixth time the WHO has declared a global health emergency” (Schumaker, Jan. 30, 2020, p. 1). While there is reticence to call this a pandemic, many already are, given the fast spread to dozens of countries (Belluz, Feb. 6, 2020, p. 10), but it is not clear whether this will be more similar to the common cold or the Spanish Flu (which resulted in between 50 – 100 million deaths worldwide). Whether this is an unfolding pandemic or not, nations are asked to prepare for the worst case scenario (“Coronavirus: World must prepare...,” Feb. 24, 2020). At present, there is an estimate that “two-thirds of coronavirus cases from China” are currently undetected worldwide (Berry, Feb. 22, 2020). At this particular moment in time, the numbers of known cases continue to rise, with more examples of invisible lines of transmission through community spread. Stock markets have been shedding value across the world, with “market corrections” occurring (drops of 10% or more from highs in values); the U.S. stock market entered “bear market territory” in the second week of March 2020. How people invest suggests something of public sentiment and their expectations for the future; it serves as a proxy measure of confidence in the present and the future. The coronavirus continues to mutate and evolve into different strains, with unclear ultimate outcomes (Stankiewicz, Feb. 10, 2020, p. 2). Chinese scientists have identified a “second, more dangerous coronavirus strain” through phylodynamic analysis, and they suggest that this strain is not only more easy to spread but also more pathogenic (Healy, Mar. 6, 2020); this interpretation has been rebutted by other scientists, however, at the MRC-

University of Glasgow Center for Virus Research in Scotland. If nothing else, the prior may suggest something of the “fog” surrounding mass-scale outbreaks with a large number of endeavors occurring simultaneously. There are varying projections for how the outbreak will continue, whether warmer temperatures may change the infection rate (Puleo, Feb. 11, 2020). Some are predicting that the virus will find a foothold in the U.S. and around the world (Lovelace, Jr., Feb. 12, 2020). One research study suggests that 40 to 70% of the world’s adult population is estimated to be infected with coronavirus at some point (“Coronavirus quarantines could...,” Feb. 27, 2020; Marc Lipsitch, 2020, as cited in Hamblin, Feb. 2020, p. 4) and “millions of people dying” (Lipsitch, as cited in “Epidemiologist predicts...,” Mar. 2, 2020). As sophisticated as disease models are with the various datapoints, how well these represent the world (external validity) is up for debate in a highly dynamic space. At the time of publication, the WHO released findings that the global mortality rate for the novel coronavirus is 3.4% (Winsor, Mar. 4, 2020), orders of magnitude greater than the 0.01% for the common flu (caused by multiple strains of other coronaviruses). Data from the World Health Organization and the Chinese Center for Disease Control and Prevention suggests heightened risks of death for those infected by SARS-CoV-2 based on health conditions: cardiovascular (10.5%), diabetes (7.3%), chronic respiratory (6.3%), hypertension (6.0%), and cancer (5.6%) (Engel, Mar. 9, 2020). Those who are older are also at greater risk (in descending order): 80+ (14.8%), 70 – 79 (8%), 60 – 69 (3.6%), 50 – 59 (1.3%), 40 – 49 (0.4%), 30 – 39 (0.2%), 20 – 29 (0.2%), 10 – 19 (0.2%), and 0-9 (none), with current data (Engel, Mar. 9, 2020). There are suggestions that this pandemic may spread to “developing-world cities where huge numbers of people live, health care facilities are poor and millions lack the money to afford whatever care is available” (Bremmer, Mar. 16 – 23, 2020, p. 32), with outsized impacts on the developing world and emerging markets. In these regions, people have less access to healthcare, expensive pharmaceuticals and therapeutics, personal protective

equipment, and other tools to protect against this novel coronavirus. Density reduction may be less possible given that many live day-to-day and require work for subsistence.

Is it possible that the viral spread may slow over the summer? Early data do not suggest so given spread in countries already experiencing high heat (like Australia). Some are suggesting that the “boomerang” effect may occur in which there is an apparent drop in novel coronavirus cases and a sudden spring back in numbers, based on experiences with prior outbreaks (one mentioned is the Spanish Flu outbreak of 1918, with an estimated 50 – 100 million deaths around the world based on historian and epidemiologist contemporaneous assessments). The magnitude of the challenge is enormous, and the disease space is complex. Humanity has more tools in its arsenal than before, but it is unclear as to whether it is up to the challenge, or what the cost in human lives will be in the meantime.

Ideally, the point of the respective quarantines, travel bans, decontaminations, and other efforts, is to “halt the outbreak and then eradicate the microbe” (Begley, Feb. 4, 2020, p. 1). This would require all countries with infected persons to achieve complete control, so the reproduction rate of infections is 0-1 (with a basic R-nought/ R_0 or reproduction number or the number of other persons each one infected person infects during an infectious period). Any R-nought above 1 means that the infection spreads; anything lesser means that the outbreak slows and ends. There is a theoretical and practical point at which such a spread not may not be possible if the virus makes a continuing position in human populations by which it survives in an independent and self-sustaining way, emerging and re-emerging as a seasonal virus. As with other respiratory viruses, in the long term, people may have no long-lasting immunity to them (if they are able to acquire immunity). For any one person, the risk is low, one out of the population of the world [one out of 7.8 billion in early 2020 (“Current World Population,” Mar. 4, 2020)]. How-

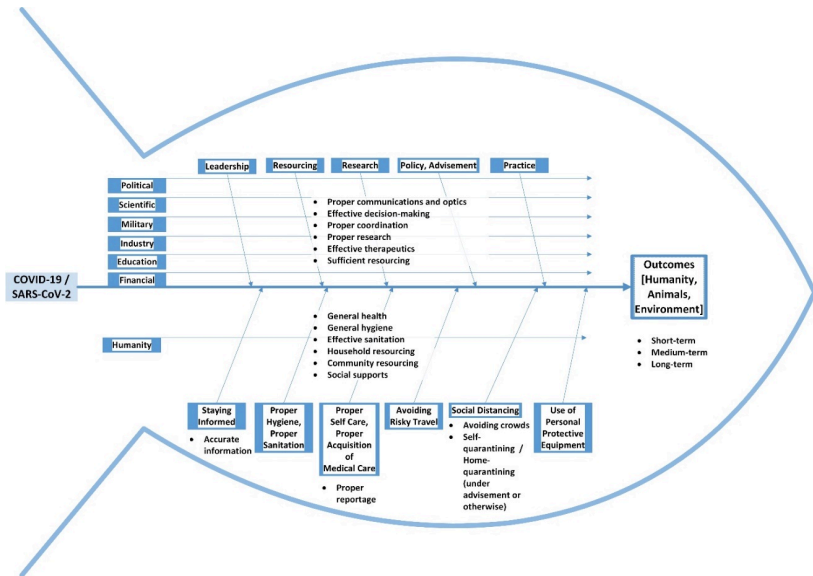
ever, that is a naïve counting game. Those who are in hot zones are clearly at much different risk, and the accounting then is different. Those receiving the news coverage experience “direct address” and can understand the personal threat (even if their understanding of actual risks may be skewed egoistic and non-statistical). Indeed, no one wants themselves or their families to be fodder to a pathogenic virus. And most people also do not want to cause harm to others.

Criticisms of various governments and their preparedness are rife (Garrett, Jan. 31, 2020, p. 2; Belluz, Feb. 10, 2020), even as history-making playbooks are being written and rewritten for fighting epidemics and pandemics. One critique, by Dr. Scott Gottlieb [ex-Food and Drug Administration (FDA) chief], has already been made in the U.S. that an “all the above approach” to such a crisis is preferable to going with just a linear one [in regards to the missed opportunities in the few weeks that U.S. health officials did not have a working diagnostic test for SARS-CoV-2 because of production challenges as headed by the CDC (*Face the Nation*, Mar. 1, 2020). He also went on to suggest that multiple approaches may be used to treat the ill: “antibody-based prophylaxis, treatments, vaccines, an all of the above approach” for a range of options]. In that time, it is thought that several hundred or even in the low thousands of cases may have gone undetected because of the unavailability of mass-scale testing even as of mid-March 2020. Globally, there have been piecemeal approaches, without a clear collective strategy (Bremmer, Mar. 15, 2020). (With so much partially known and speculated, there is still much to learn about the virus, its mechanisms, its evolutions, and how humanity can best fight this pathogenic agent in the various contexts and cultures of human populations.

Meanwhile, people stock up on single-use facemasks with limited effectiveness. They stockpile food at home in order to be able to self-quarantine as directed. People meeting greet each other with elbow bumps (in lieu of handshakes) and polite social

distance. They have set up work offices in their respective homes. They hold their breaths and wait. Many public health officials warn that “significant disruption” is to come given the behavior of the pathogen and human systems (Winsor, Schumaker, & Nathanson, Feb. 25, 2020). There are calls for preparations, to enable “teleschooling, working remotely—should face-to-face interactions need to be reduced” (Winsor, Schumaker, & Nathanson, Feb. 25, 2020, p. 3). Online, some have shared DIY (do-it-yourself) homemade sanitizer mixes after a run on stores and online shops drove up prices for this product and made them unavailable (Butler, Mar. 1, 2020).

It is possible to summarize the current holistic public understandings in a “data summary” fishbone diagram. The bones at the top refer to systems-level engagements, and the bones below the midline are for individuals. (Figure 10). Various strategic actions may be taken at different levels. How various societies mobilize will affect outcomes across a range of factors like human health and economic systems. In some ways, pre-existing investments in infrastructure and knowledge will be the difference as the rolling infections move across different regions.



Some Human Interventions against COVID-19 / SARS-CoV-2 (a “data summary” fishbone diagram)

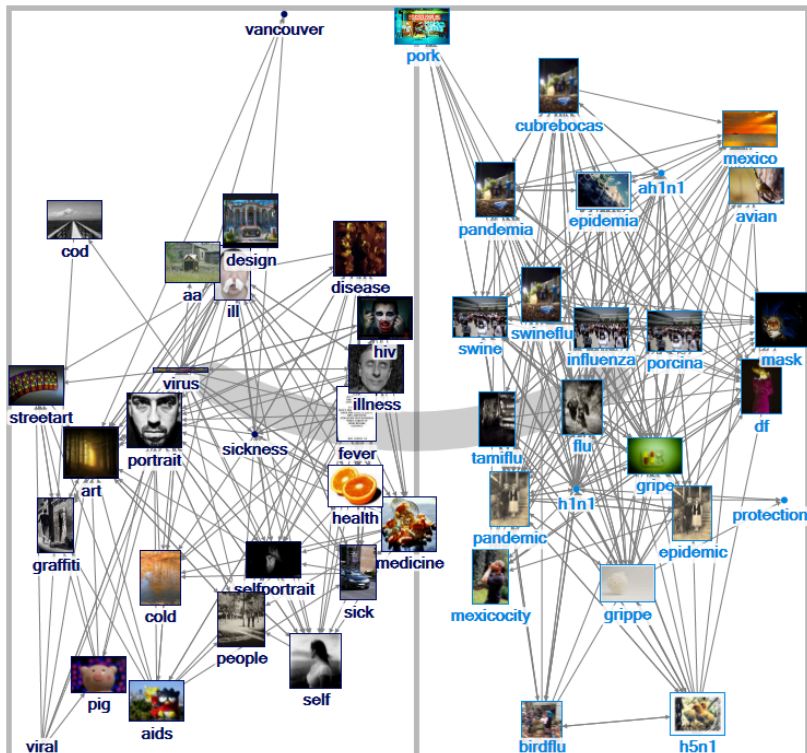
This fishbone diagram shows some macro and micro approaches to combating this pandemic.

Figure 10: Some Human Interventions against COVID-19 / SARS-CoV-2 (a “data summary” fishbone diagram)

Current estimates are that the first wave of infections may move through the U.S. through mid-May 2020, at which point the viral spread will slow because either people have been infected and have some immunity against re-infection, or are generally not susceptible (for whatever reason), or are sufficiently unexposed. The idea is to lower the peak of the epidemic curve in the meantime so that the epidemic does not peak early and never has a high number of cases at a time that would overwhelm hospitals and their surge capabilities (“Gottlieb, AEI’s Michael Strain...,” Mar. 12, 2020; Chow & Abbruzzese, Mar. 11, 2020).

And finally, to the research issue, social media platforms are critical for a variety of reasons in a time of crisis: information sharing, mutual encouragement, social support, social intimacies (while being socially distant or even “quarantine”), productivity in collaborative work, research, coordination, and monitoring

various facets of human life. It is a foremost source that people use to receive news and to filter news for their own usage and decision making. However, for those who want to know about the actual risks and actual defenses, going with headlines and social imagery is insufficient alone and highly misleading. Social imagery and social video may raise alarms but need to be bolstered with facts and ongoing real-time knowledge and support for making the right decisions. There is a visual way to illustrate this. In terms of related tags for images shared on the Flickr social image sharing site, the folk tags applied to the shared images show mass-scale associations of the broad public to the idea of “virus.” (Figure 11) There are a variety of mental associations, including to “pandemia” and “epidemia” and “sick” and various “swineflu” and “birdflu” and “h1n1” and “h5n1”. But alone, these lighter forms of awareness are insufficient to keep people as safe as possible. [This network graph was acquired from Flickr through a third-party application enabled through the NodeXL application, an add-on to Excel.]



This network graph shows some high level evocations of “virus” in shared social imagery on the Flickr social image sharing site.

Figure 11: “Virus” Related Tags Network on Flickr (1.5 deg.)

The risks of infection—through aerosolized particles, through sneezes, through viral particles left on surfaces and inadvertently carried to a person’s face by unconscious facial touching, and other means—are real and present. An infection control study found that study participants (medical students) touched their faces 23 times per hour, with 44% involving “contact with a mucous membrane, whereas 56% of contacts involved nonmucosal areas” (Kwok, Gralton, & McLaws, 2015, p. 112). The team writes: “Of mucous membrane touches observed, 36% (372) involved the mouth, 31% (318) involved the nose, 27% (273)

involved the eyes, and 6% (61) were a combination of these regions” (Kwok, Gralton, & McLaws, 2015, p. 112). There are warnings for social distancing, too, across the population range but with a special focus on the “vulnerable,” those who are older and with underlying health conditions (Kamisar, Mar. 8, 2020). There are suggested changes for workplace rules, such as for those who are ill to remain home and to optimally still earn a salary. There is a sense that societies are working the edges of feasibility. This knowledge can help people take some reasonable precautions while science efforts continue towards potential therapeutics and interventions.

Note: This work was drafted in February 2020 and was submitted for consideration on March 1, 2020; a few revisions and updates were included in the first week of March. The reliance on mass media depictions mean that the concepts are mostly excerpted as “mental models” (of non-experts) and not conceptual models (of experts), which would be more common in the academic literature. Several research-based academic works addressing the novel coronavirus were available at the time of this publication, but these may be a little too complex for inclusion in a work about the uses of social media imagery to understand an unfolding pandemic outbreak. Follow-on work will include more systematic social image analysis, with direct counts, instead of summary gists alone (Hai-Jew, 2018). This was submitted in part because of the speed of events and the sense that it would have value in a faster publication cycle than is typical with an academic publication. Thanks to Dr. Floribert Patrick C. Endong, editor of this publication, for being willing to consider this last-minute submittal.

At the time of publication, the author’s long-term former stomping grounds of Seattle became a hotspot for COVID-19, with multiple deaths and many infected.

Disclaimer: None of this work is advisement. The information is initial and from published sources, with full citations. As in any early emergency, information may be inaccurate—even prior published information with on-the-fly vetting in the so-called “first draft of history.”

Dedication: This work is dedicated to all those on the many frontlines to address this SARS-CoV-2 outbreak.

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Key Terms

2019 n-Cov: The initial and unofficial name given to the virus that leads to COVID-19

Biosafety: The state of safety of people, animals, and the environment from unintentional release of disease-causing microorganisms and other biohazards

Biosecurity: The state of security of people, animals, and the environment from intentional release of biohazards by people

Case Fatality Rate: Number of deaths from a disease divided by the total number of people with the disease in a certain time period (as a measure of disease severity)

COVID-2019: Official name of the disease from SARS-CoV-2

Coronavirus: A group of RNA (ribonucleic acid) viruses that may be pathogenic for humans and animals

Density Reduction: The conscious and purposeful separation of people from each other's personal space (six feet in all directions) in order to lower the spread of a pathogenic agent spread via air

Domestic Containment: The stopping the spread of an infectious disease within a country

Fomite: Materials “likely to carry infection, such as clothes, utensils, and furniture” (Oxford English Dictionary online)

Hot Agent: A colloquial term for viruses that can only be handled safely with Biosafety Level 4 methods

One Health: A concept of the intersection between human, animal, and environmental health requiring collaborative and multi-disciplinary approaches to solve health issues

Pandemic: An occurrence of disease prevalence around the world (with local community transmission that is not traceable to an origin)

R_0 (pronounced “r-nought”): Basic reproduction number, the average number of people infected by one infected person in a population during the infectious period

SARS-CoV-2: Name of the virus that leads to COVID-19

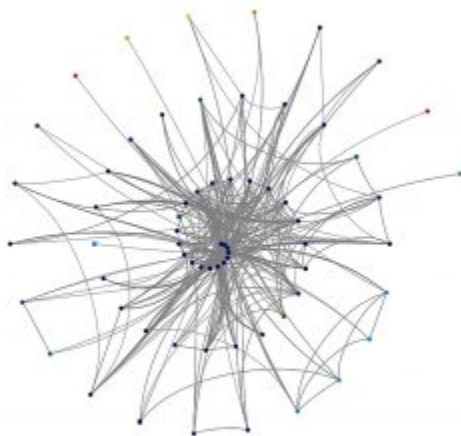
Self-Isolation: The act of cordoning oneself off from others because one is presumed or confirmed to be infected with a contagious disease agent

Self-Quarantine: The act of “sheltering in place” to avoid interacting with other people to stop or slow the spread of an infectious disease, including home-quarantine (the individual may or may not be “positive” for the infectious disease agent)

Zoonotic Spillover: The transmission of a pathogenic agent from a vertebrate animal to human

PART II

PART 2: PROTECTING THE ENVIRONMENT



2

TRANSNATIONAL META-NARRATIVES AND PERSONAL STORIES OF PLASTICS USAGE AND MANAGEMENT VIA SOCIAL MEDIA

Shalin Hai-Jew

Abstract

Daily, people interact with plastic, a human-made material that may last for generations in the soils, the air, and the water, with health effects on humans, animals, and the environment. What are the transnational meta-narratives and personal stories of plastics on social media—on (1) a mass-scale digitized book corpus term frequency search, (2) social video sharing site, (3 and 4) two social image sharing sites, (5) a crowd-sourced online encyclopedia, (6) a social networking site, (7) a microblogging site, and (8) a mass-scale search term analysis based on time-based associations with correlated search terms? This work samples macro-scale stories of innovation (biodegradable plastics, bacteria that consume plastics), of lowering consumption, of plastic collection and recycling, of skimming the oceans of dumped plastics, and of mass-scale public awareness. There are also countervailing narratives of high consumption, resulting in overflowing landfills, plastics dumping on mountains and in rivers, and microplastics in people's bodies.

Key Words

Post-Consumer Plastics, Recycling, Plastics Management, One Health, Microplastics, Social Media, Transnational Meta-Narratives, Transnational Personal Stories



Introduction

Humanity is said to live in the current Plastic Age (Yarsley & Couzens, 1945, as cited in Cózar, et al., July 15, 2014, p. 10239). Indeed, plastic is ubiquitous and a part of daily life for most people around the world. Plastics are integrated into non-durable-goods short-life products and durable goods or long-life products. They are in visible applications like food packaging, jewelry, clothing, and other consumer goods; they are in less visible applications like computers, machinery, flooring, and others. People eat from plastic containers; they store possessions in them. They wear plastic in their clothing and footwear. They decorate themselves with plastic jewelry. They walk on plastic carpets, and they live in houses partially created with plastic

Since 1950, some “6,300 million metric tons of plastic” have been created, with “79 percent of that waste” in landfills and oceans (Daley, May 8, 2019). Annually, some “18 billion pounds of conventional plastic” are released into the world’s oceans annually (Daley, May 8, 2019). A 2014 study by the 5 Gyres Institute resulted in an estimation of “5.25 trillion plastic particles weighing some 269,000 tons...floating on the surface of the sea” (Seltenrich, Feb. 1, 2015, p. 1). An earlier work, based on modeling, points to “5 trillion plastic pieces weighing over 250,000 tons

afloat at sea” (Eriksen, et al., Dec. 10, 2014). Various plastics are carried by the ocean current hundreds of miles from its point-of-origin (Seltenrich, Feb. 1, 2015, p. 4). The sorbative nature of plastics has meant the soaking in of toxins, which ride with the plastics, which are consumed by both people and animals, whose bodies are exposed to desorbed toxins (Seltenrich, Feb. 1, 2015, p. 6). “Studies have demonstrated plastics’ tendency to sorb (take up) persistent, bioaccumulative, and toxic substances, which are present in trace quantities in almost all water bodies” (Seltenrich, Feb. 1, 2015, p.) Plastic bags may “look like the jellyfish eaten by turtles” (Seltenrich, Feb. 1, 2015, p. 3). People also, unintentionally, consume plastics through marine plastic pollution (Seltenrich, Feb. 1, 2015).

Definitions

As a term, “*plastic* refers to a huge variety of materials, all of which are organic (which is to say they are made of a group of compounds based on carbon), solid, and moldable” (Miodowni, 2013, p. 121). As a commonly-used material in the present age, a plastic is defined as follows:

a synthetic material made from a wide range of organic polymers such as polyethylene, PVC, nylon, etc., that can be molded into shape while soft and then set into a rigid or slightly elastic form. (“Plastic,” Oxford English Dictionary, 2019).

Plastics are human-made from naturally occurring compounds as well as human-made (synthetic) ones.

Plastics, which were invented in 1907 (“Plastic,” Oct. 18, 2019), have long been in the world’s marketplaces, and it has only been of late that plastic recycling has come to the public consciousness and been emplaced into initial practice [1980s and 1990s, albeit with the first plastic waste recycling mill in the world in Conshohocken, Pennsylvania in 1972 (“History of Plastic Recycling,”

2019)]. Public awareness of “plastic pollution” only followed generations after the advent of its widespread usage, with untold effects on people, animals, and the environment. Plastic, as a synthetic product created from various types of natural/organic and synthetic polymers, was found not to break down in the environment but rather to exist for generations in landfills, leaving messes for future populations. Over time, it was found plastics entered the oceans and entangled wildlife and was consumed by wildlife at all trophic levels, leading to health effects and deaths. In terms of the recycling of “common materials,” plastic comes in dead last after the following: paper, metal, and glass, in the U.S. from 1990 – 2015 (“Playing catch-up: Plastics are recycled less in the US than other common materials,” U.S. Environmental Protection Agency, as cited in Tulio, Oct. 6, 2019).

As a product, “plastic” has vastly improved human lives in many ways:

Plastics have an array of unique properties: they are inexpensive, lightweight, strong, durable, corrosion resistant, and with high thermal and electrical insulation properties. This versatility has revolutionised (sic) our life and not least made information technology and electrical goods far more readily available than would have been possible otherwise. They have also contributed to our health and safety (e.g., clean distribution of water and breakthrough medical devices), and have led to substantial energy savings in transportation. Unsurprisingly, with an ever expanding population and our standard of living continuously improving, plastic production has increased from 0.5 to 260 million tonnes per year since 1950 (Heap 2009), accounting today for approximately 8% of world oil production (Thompson et al., 2009b, as cited in Wabnitz & Nichols, 2010, p. 1).

Another definition of “plastic” is “(of a substance or material)

easily shaped or molded” (“Plastic,” Oxford English Dictionary, 2019). Some synonyms of “plastic” are words like “elastic, molded, bending, formable, moldable, pliable, resilient, shapeable, supple, (and) workable” (“plastic,” Thesaurus, 2019). There are said to be seven common types of plastic: polyethylene terephthalate (PET or PETE or Polyester), high -density polyethylene (HDPE), polyvinyl chloride (PVC), low-density polyethylene (LDPE), polypropylene (PP), polystyrene (PS), and other.

Something that is “plastic,” by definition, is malleable and moldable and shape-shifting. In terms of “plastic recycling,” both of these meanings coalesce. Here a subset of the plastics substance can be reprocessed back into a version of its native form for re-use, ideally, many times over. “Plastic recycling” or “polymer recycling” has been defined as follows:

...a way to reduce environmental problems caused by polymeric waste accumulation generated from day-to-day applications of polymer materials such (as) packaging and construction. The recycling of polymeric waste helps to conserve natural resource because thee most of polymer materials are made from oil and gas. (Hamad, Kaseem, & Deri, 2013, p. 2801)

There are efforts towards resetting market incentives to encourage plastic recycling. One idea involves making plastic-from-oil much more expensive than plastic-from-plastic, in order to create markets for the recycled plastic and to incentivize the collection of plastics by “rag pickers” in the developing world and elsewhere. (Forrest, Nov. 1, 2019)

For plastic recycling to work, however, people have to be aware of the need to recycle consumer plastics, their necessary role in bringing recyclables to recycling stations, and using their buying power as consumers to buy recycled goods (to create markets). The requisite behavioral role of consumers then suggests that various stakeholders in plastics and environmentalism have an

interest in reaching out to the broad public...with transnational messaging...to address this issue. This movement also stands to gain with additional allies and contributors to non-profit advocacy organizations promoting plastics recycling, such as start-ups with new technologies for collecting plastics in ocean gyres and other entities. Plastics management requires post-consumer plastic reuse and recycling.

Research

This research is focused around a central research question:

R1: What is the state of transnational advocacy for proper plastics management globally to prevent harm to humans, animals, and the environment, in a One Health conceptualization, in social media?

R1a: What are transnational meta-narratives?

R1b: What are transnational personal stories?

What is meant by “one health,” broadly speaking? A One Health conceptualization stems from the recognition that “the health of people is connected to the health of animals and the environment” (“One Health Basics,” 2019). As an overarching term, it enables “a collaborative, multisectoral, and transdisciplinary approach” to benefit the health outcomes of humans and animals (“One Health Basics,” 2019). This work involves capturing data from seven social media source types, with eight representational social media platforms:

Public messages inform an “authorizing environment” around which the public acts, so understanding the messaging may be important to learning what other messages need to be emerge, which ones need to be supported, and more strategic ways to communicate broadly.

Part 1: Google Books Ngram Viewer (mass book corpus term frequency search)

Part 2: YouTube (social video sharing site)

Part 3: Google Images (social imagery sharing site)

Part 4: Flickr (social imagery sharing site)

Part 5: Wikipedia (crowd-sourced global encyclopedia)

Part 6: Facebook (social networking site)

Part 7: Twitter (microblogging site)

Part 8: Google Correlate (a mass-scale search term correlation w/ other search terms over weekly time in a geographical region)

The main focus of this work then will be on the social media messaging, even though there has been some light review of the academic literature and mass media news coverage of the plastics recycling issue (to provide context). The visuals will be coded manually. Coding social imagery as a method for social exploration of issues (Hai-Jew, 2018). The textual messaging will be analyzed by both close human reading and distant reading (through computational analysis). The videos will be analyzed via their transcripts, using both close and distant reading analyses.

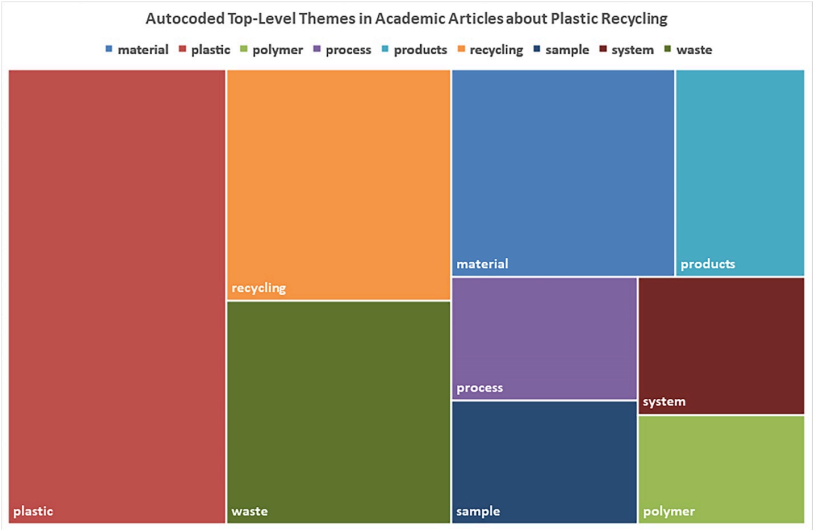
Also, this issue is being addressed in a number of human spaces: global governance, national governments, non-governmental organizations (NGOs), corporations, municipalities, and others. These other endeavors are beyond the purview of this work. The focus here is mostly on social media messaging to the broad general public to encourage the recycling of post-consumer plastics (as contrasted to post-industrial plastics). However, the transnational environmental movements that activate various entities are discussed lightly in the Conclusion.

Review of the Literature

Virgin polymers can be used to create drinking bottles, but recycled plastics can only generally be recycled about a half-dozen times before it can no longer be recycled and must be discarded. Some of these recycled plastics may retain their quality and be “upcycled” into food-bearing containers. However, additives mixed into plastics in the recycling process make it impossible to recycle after a certain point. Post-consumer plastics may be “downcycled” into “handbags or benches instead of completing the recycling loop by becoming milk jugs, water bottles and Greek yogurt tubs” (Daley, May 8, 2019). Scientists have created recyclable PDKs that may be “infinitely” recycled in the lab (Daley, May 8, 2019). There are advances to recycling methods as well, such as “chemical recycling, gasification or pyrolysis,” as noted by the Association of Plastic Recyclers (APR).

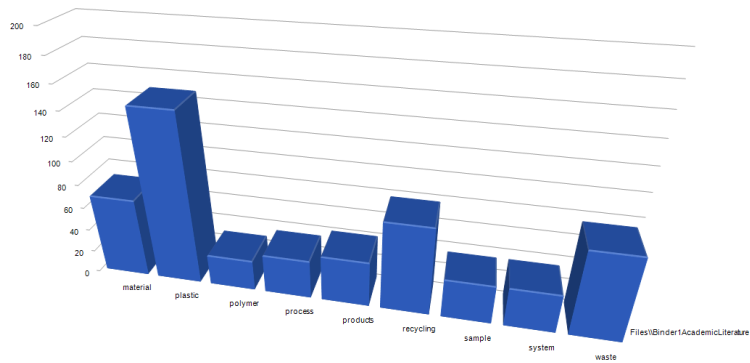
Transnational Meta-Narratives and Personal Stories of Plastics Usage and Management via Social Media

To set up a baseline for the topic of “plastic recycling,” a skim of academic articles and of journalistic ones was conducted. The first tended towards issues of innovative methods for plastic recycling, for increased efficiencies, based on close readings. Several of the works note that what works in the lab may not be directly transferable to industrial scale efforts. For the latter set, the articles addressed applied plastic recycling for a general reading audience. A “distant reading” approach to the academic articles (as a set consisting of 1,108 pp. and 648,022 words) show top-level themes that are fairly general (material, plastic, polymer, process, products, recycling, sample, system, and waste) (Figures 1 – 3 and Table 1).



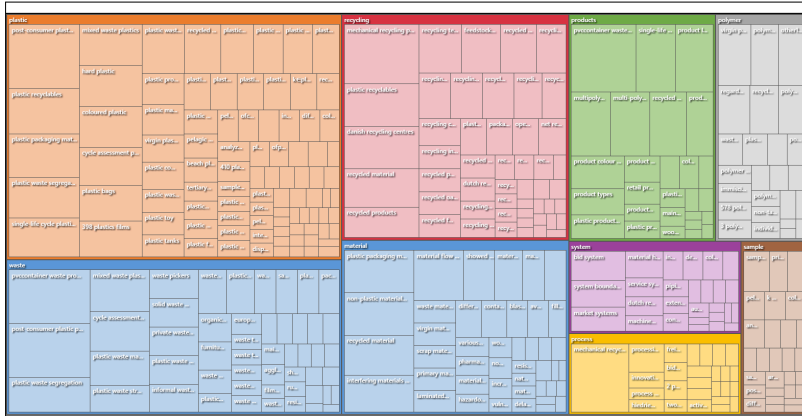
This treemap diagram captures top-level autocoded themes from academic articles about plastic recycling: plastic, recycling, waste, material, process, sample, products, system, and polymer.

Figure 1: Autocoded Top-Level Themes in Academic Articles about Plastic Recycling



This plot shows the relative frequency of references to various autocoded themes from academic articles about plastic recycling.

Figure 2: Autocoded Top-Level Themes in Academic Articles about Plastic Recycling (3D bar chart)



This treemap diagrams shows the top-level themes and sub-themes from the academic articles set related to plastic(s) recycling.

Figure 3: Autocoded Top-Level Themes and Related Subthemes in Academic Articles about Plastic Recycling

material	
	avoided material
	biodegradable materials
	blast furnace material
	composite materials
	contact materials
	delaminated material
	different food packaging polymeric materials
	filling material
	hazardous materials
	increased material efficiency
	interfering materials impurity
	laminated materials
	material consumptions
	material flow analysis modelling
	material handling system
	material property
	material reaches
	material recovery facility
	material structures

	material substitution ratio
	material type classification accuracies
	natural materials
	non-plastic material parts
	nonplastic materials
	original material
	pharmaceutical packaging polymeric materials
	plastic packaging materials
	primary material
	recycled material
	resistant forest industry materials
	sample materials
	scrap material
	showed material quality appropriateness
	subsequent material loss
	target material
	traditional material
	tribo charger material
	unwanted materials
	valerian materials

	various microporous materials
	virgin materials
	vulnerable materials
	waste material composition
	wood-like material
plastic	
	¼ plastic bottles
	398 plastics films
	410 plastic pieces collected from an enclosed beach on washburn island
	adjacent plastic bottles
	agglomerated plastic waste
	american plastics
	analyzed plastic samples
	apolar plastics
	archived plastic samples
	beach plastic debris
	collected plastic samples
	coloured plastic
	cycle assessment plastic waste
	different plastic resins

	different plastic types
	disposable plastic cutlery
	extruded plastic string
	film plastic fraction
	forward plastic supply chain
	hard plastic
	hollow plastic melt
	industrial plastic pellets
	ingesting plastic
	injected plastic
	international plastic production
	k∈plastics
	light plastics
	marine plastic distribution
	mixed waste plastics
	net-collected plastic
	neustonic plastic studies
	numerous plastic types
	ofcommonconsumer plastics
	ofpelagic plastic

	packaging plastics
	pelagic plastic debris
	pelagic plastic particles
	pelagic plastic samples
	plastic bags
	plastic bottle contour
	plastic concentrations
	plastic containers
	plastic content
	plastic debris data
	plastic films
	plastic form
	plastic fragments
	plastic furniture
	plastic grocery bags
	plastic marine pollution
	plastic market
	plastic moldings
	plastic nets
	plastic objects

	plastic packaging materials
	plastic particles content
	plastic pollution increases
	plastic polymers
	plastic product groups
	plastic production market
	plastic properties
	plastic recyclables
	plastic scrap
	plastic sheeting
	plastic tanks
	plastic toy
	plastic transparency
	plastic waste characteristics
	plastic waste fraction
	plastic waste items
	plastic waste management schemes
	plastic waste products
	plastic waste recycling
	plastic waste segregation

	plastic waste streams
	polar plastics
	post-consumer plastic packaging waste
	post-consumer plastic samples
	producing plastics
	recycled plastic bottles
	recycled plastic bridge
	recycled plastic lumber walls
	recycled plastic outputs
	samplesto plastic debris
	single-life cycle plastic products
	single-polymer plastics
	soft plastic particles
	specific plastics
	term plastics
	tertiary plastic
	virgin plastic source
polymer	
	3 polymer recovery
	578 polymer degradation

	chloride-containing polymers
	condensation polymer
	crystalline polymer
	immiscible polymers
	individual polymers
	non-targeted polymer
	other1 quality polymer
	plastic polymers
	polymer bed
	polymer contamination
	polymer design
	polymer marketplace
	polymer parts
	polymer- polymer incompatibility
	polymer recyclate stream end markets
	polymer separability
	polymers chemical
	recycled polymer
	regarding polymer type
	several polymers

	virgin polymer
	waste polymers
	yoghurt bowl polymer
process	
	2 processing cycles
	active density separation process
	additional separation processes
	advanced process
	bid process
	catalyst process
	combustion processes
	ester exchange process
	experimental process
	freiberg process
	general process
	hiedrierwerke process
	hydrogenation process
	innovative processes
	mechanical recycling processes
	mirror welding process

	morphological processing
	oil refinery process
	physical processes
	process conditions
	process steps
	processing sites
	processing temperatures
	recovery processes
	tagging process
	two-stage process
products	
	annual production
	coloured products
	gaseous products
	international plastic production
	main product component
	moulded product
	multipolymer products
	multi-polymer products
	non-plastic products

	petrochemical products
	plastic product groups
	plastic production market
	plastic waste products
	product application categories
	product colour impurity
	product designs
	product life time
	product lifetime
	product residues
	product types
	pvccontainer waste product application
	recycled products
	retail products
	single-life cycle plastic products
	slab stock foam production waste
	thick-walled products
	wood products markets
recycling	
	chemical recycling

	danish recycling centres
	dutch recycling system
	feedstock recycling options
	mechanical recycling processes
	net recycling yields
	open-loop recycling
	packaging waste recycling law
	plastic recyclables
	plastic waste recycling
	private recycling centers
	recyclable load
	recycled bottles
	recycled fiber
	recycled fleece
	recycled foam flakes
	recycled material
	recycled oak wood flour oak
	recycled paper fiber pallets
	recycled plastic bottles
	recycled plastic bridge

	recycled plastic lumber walls
	recycled plastic outputs
	recycled polymer
	recycled products
	recycled waste rubber powder
	recycling chain
	recycling companies
	recycling concern
	recycling efficiencies
	recycling facilities
	recycling fees
	recycling indicators
	recycling journal homepage
	recycling line
	recycling machine vision support vector machine
	recycling method karishma
	recycling network
	recycling plant
	recycling potentials
	recycling programs

	recycling purposes
	recycling receptacles
	recycling society
	recycling status
	recycling studies
	recycling technologies
	recycling waterway sediments
	related recycling quota
	secondary recycling schemes
sample	
	analyzed plastic samples
	analyzed samples
	archived plastic samples
	archived samples
	beach sample set
	collected plastic samples
	different sample
	first sample
	fresh clay sample
	k neighbor samples

	liquid samples
	pelagic plastic samples
	perpendicular sample
	post-consumer plastic samples
	primary samples
	sample collection
	sample densities
	sample frequency
	sample materials
	sampling campaign
	sampling integration time
	sampling scheme
	sampling sites
	straightforward sampling method
	subsequent samples
	uniform sample
	whole sample
	zenith sample
system	
	automated sorting system

	bid system
	collection system
	conveyor system
	coordinate system
	data-acquisition system
	detection system
	dutch recycling system
	endocrine system
	equatorial system
	extensive flue gas cleaning systems
	french waterway system
	hysteretic system
	image vision system
	in-house bin systems
	machine vision system
	market systems
	material handling system
	model systems
	nervous system
	pipng systems

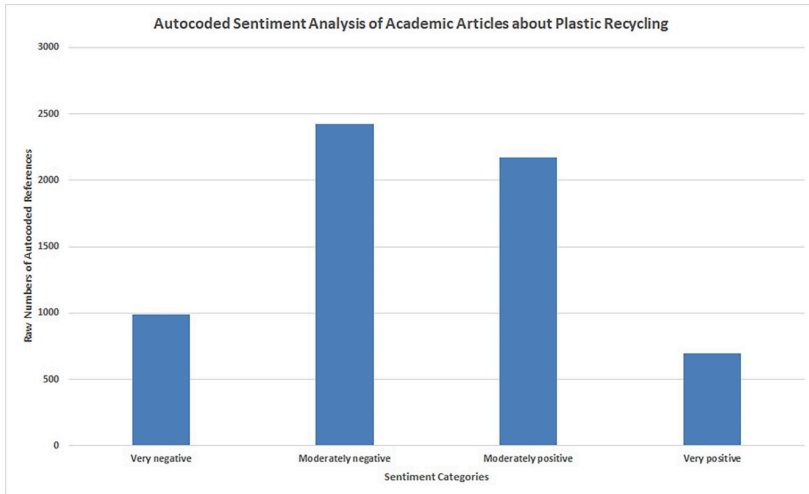
	prototype system
	service system
	sound classification systems
	structural systems
	sustainable management system
	system boundaries
waste	
	agglomerated plastic waste
	building waste
	cycle assessment plastic waste
	disposed waste
	electronic waste
	european waste policies
	film waste
	food waste conversion options
	furniture waste
	informal waste collectors
	main waste stream
	mixed waste plastics
	organic waste

	packaging waste recycling law
	plastic waste characteristics
	plastic waste fraction
	plastic waste items
	plastic waste management schemes
	plastic waste products
	plastic waste recycling
	plastic waste segregation
	plastic waste streams
	post-consumer plastic packaging waste
	preferred waste management options
	private waste contractors
	pvccontainer waste product application
	recycled waste rubber powder
	residual household waste
	rich waste
	rubber waste
	sanitary waste
	sawmill waste hardwood
	shredded waste

	slab stock foam production waste
	solid waste management
	waste avoidance
	waste generation
	waste handling
	waste hierarchy
	waste incinerators
	waste management applications
	waste management policy instruments
	waste material composition
	waste packaging types
	waste pickers
	waste pipe
	waste polymers
	waste rubber granulate
	waste transport
	waste types
	waste vegetables

Table 1: Autocoded Topics and Sub-Topics from the Academic Text Set around Plastic Recycling

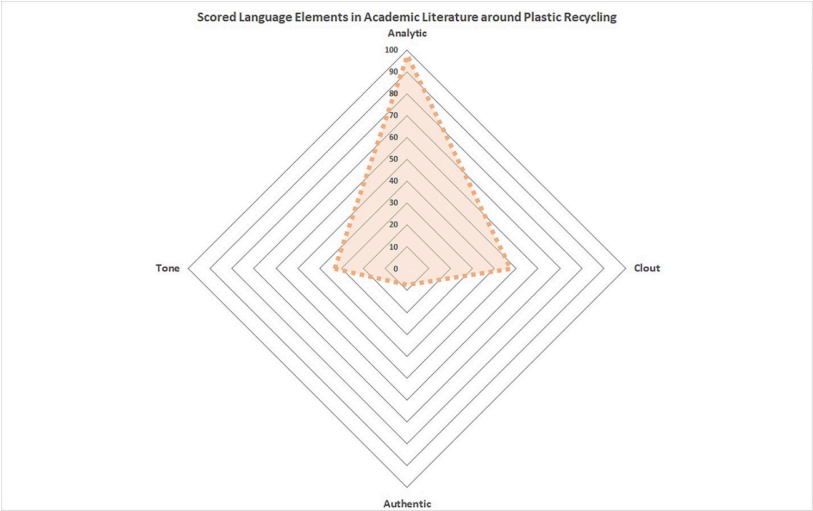
While a majority of the text is sentiment-neutral, of the text that had sentiment in this academic article set, the sentiment tended towards moderation—moderately negative and moderately positive. (Figure 4)



This 2d barchart shows that the academic articles about plastic recycling tend to trend moderately negative and moderately positive, where sentiment was found in the writing. A majority of such text is sentiment-neutral (as is typical for academic writing).

Figure 4: Autocoded Sentiment Analysis of Academic Articles about Plastic Recycling

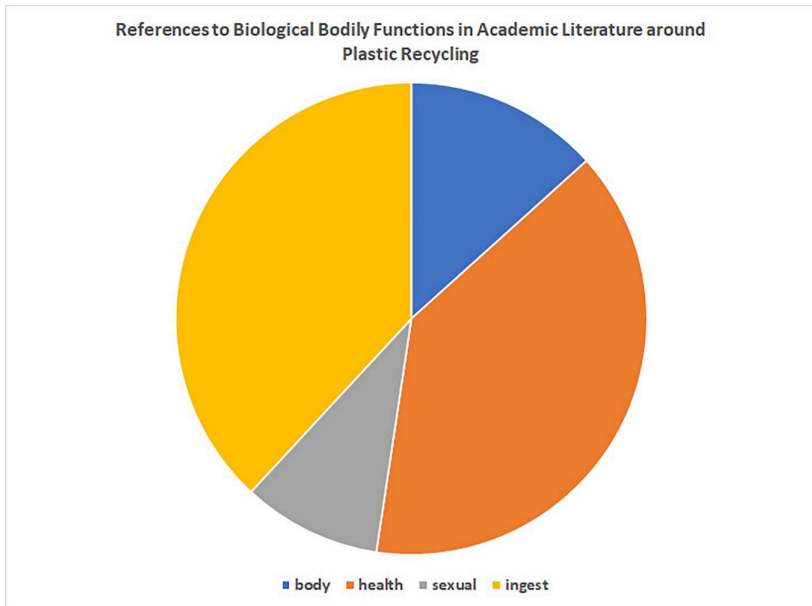
The processes of the academic text above were conducted using NVivo 12 Plus. Another run over the same data was conducted using LIWC2015, for additional insights. In terms of general language, the academic works scored high on analytics features (97.35), at the 50th percentile on clout or power scores, low on emotional warmth or authenticity (7.40), and negative sentiment in tone (33.21). (Figure 5)



Using LIWC2015, the academic literature was assessed for universal features...with the writing found to be highly analytic, middling in terms of clout, low in terms of emotional warmth ("authentic"), and negative in tone.

Figure 5: Scored Language Elements in Academic Literature around Plastic Recycling

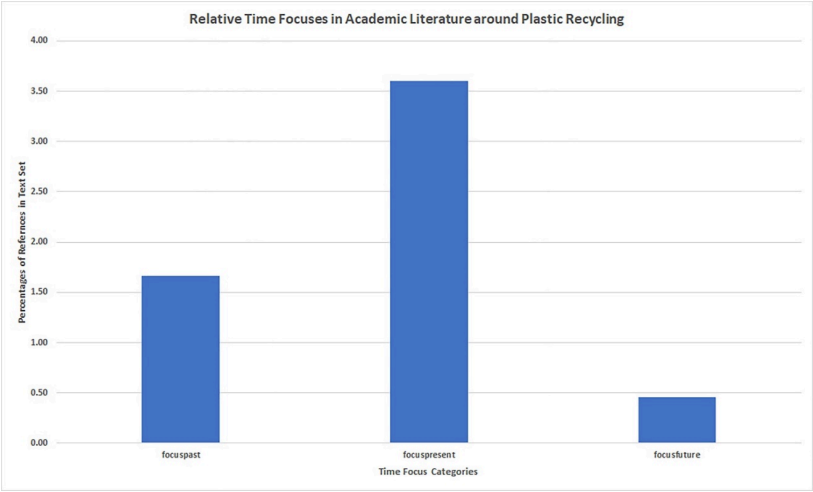
In terms of references to biological bodily functions, the academic literature had some small amounts of references, potentially in a health context (Figure 6).



Computational text analysis shows references to bodily functions in the plastic recycling academic literature, particularly in terms of health and ingestion. (LIWC2015)

Figure 6: References to Biological Bodily Functions in Academic Literature around Plastic Recycling

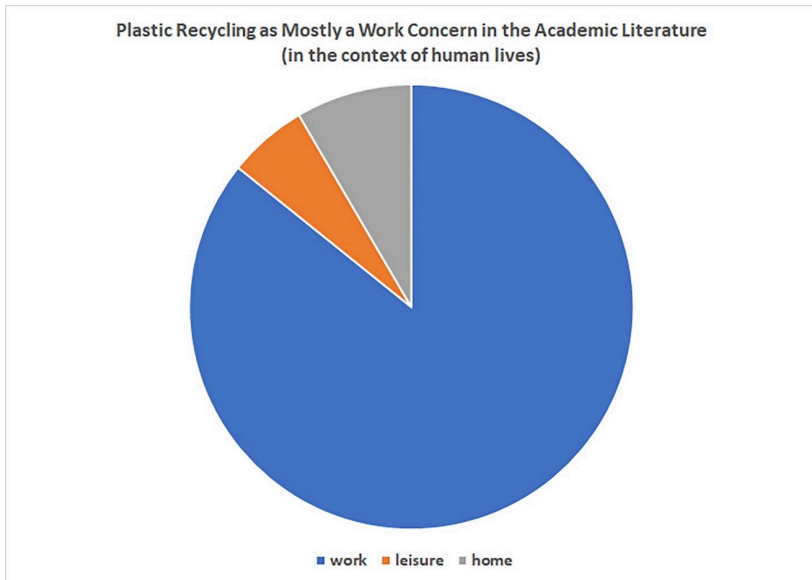
In terms of time focuses, the time-based language focused mostly on the present, followed by focuses on the past, and less on the future (Figure 7).



The academic literature around plastic recycling uses language that focuses mostly on the present. (LIWC2015)

Figure 7: Relative Time Focuses in Academic Literature around Plastic Recycling

Finally, in reference to lifestyle factors, the plastic recycling academic article set showed a focus mostly on work and much less on leisure or home, which seems intuitive (Figure 8).



This piechart shows the language from plastic recycling articles as focused around work (vs. leisure and home concerns). (LIWC2015)

Figure 8: Plastic Recycling as Mostly a Work Concern in the Academic Literature (in the context of human lives)

This is to say that the academic research is aligned towards solving some of the technological challenges related to plastics and their usage and management. Where the experts have conceptual models of the challenge, non-experts have mental models of the same. In a massmind approach, the general stages to plastic recycling include the following: collection, sorting, washing, shredding, types of processing (physical, heat, chemical, and others), and *voila!* Some polymer recycling processes result in plastic pellets that can be reconfigured into various objects, others to fuels, and others to polyester yarn (that may be knitted into clothing, carpet, car seats, packaging, shopping bags, and other goods that may be made with “downgraded” or “downcycled” plastics, which cannot be recycled again). (Most industrial processing methods are likely to be registered through the patenting process to protect the rights of inventors to monetarily benefit from the work

for a limited time period.) The broad public comes into play with their behavioral role, as consumers and as recyclers.

Plastic Recycling on Social Media

So what is seeable about “plastic recycling” in social media on various platform types?

Part 1: Google Books Ngram Viewer (mass-scale digitized book corpus term frequency search)

Part 2: YouTube (social video sharing site)

Part 3: Google Images (social imagery sharing site)

Part 4: Flickr (social imagery sharing site)

Part 5: Wikipedia (crowd-sourced global encyclopedia)

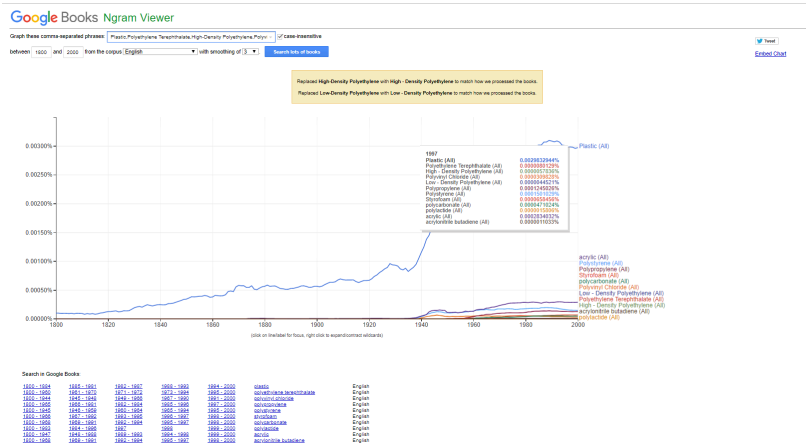
Part 6: Facebook (social networking site)

Part 7: Twitter (microblogging site)

Part 8: Google Correlate (a mass-scale search term correlation w/ other search terms over weekly time in a geographical region)

Part 1: Google Books Ngram Viewer

In terms of formal book publishing, a search for “plastic” and various types of plastics were run through Google Books Ngram Viewer, with high references to “plastic” as a generic and much lesser of the others, mostly starting in the 1940s. (Figure 9) In terms of “plastic recycling,” that term did not register in the search, which went from the 1800s to 2000. This can be understood as a general proxy for public awareness of the educated classes and parts of the general public for this issue.



The Google Books Ngram Viewer shows various references to plastics of various kinds over time in the English book corpora.

Figure 9: An Exploration of “Plastic(s)” and Common Types in Modern Usage on the Google Books Ngram Viewer (English Corpus, 1800 – 2000)

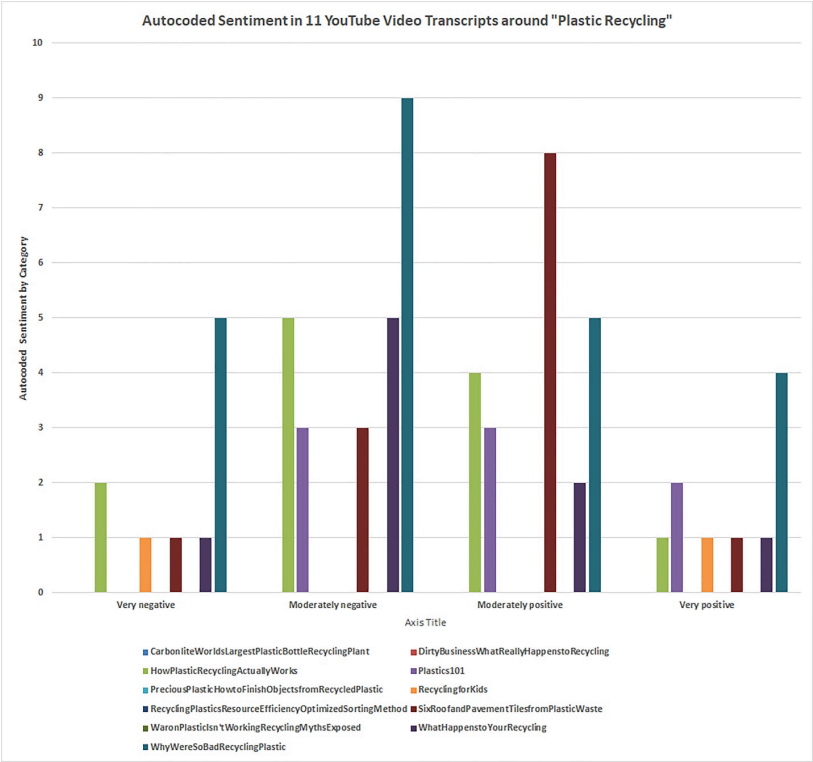
Part 2: YouTube (social video sharing)

On YouTube, the social video-sharing site, a search for videos tagged “plastic recycling” only brought up a webpage and a half of videos on the topic before it transitioned to videos about other topics like glass recycling. The auto-complete in the search box for “plastic recycling” brought some other less general options (in descending order): “plastic recycling machine, plastic recycling business, plastic recycling process, plastic recycling at home, plastic recycling business in bangladesh, plastic recycling machine in bangladesh, plastic recycling ideas, plastic recycling machine price list, plastic recycling products, (and) plastic recycling plant.” A total of 11 video transcripts were captured, with 10 for adults and 1 for children. The transcripts were treated as one text set because when the transcripts were run individually, it was not possible to extract a computational data analysis of the

	A : bin	B : plastic	C : recycl
1 : CarbonliteWorldsLargestPlasticBottleRecyclingPlant	0	0	0
2 : DirtyBusinessWhatReallyHappenstoRecycling	0	0	0
3 : HowPlasticRecyclingActuallyWorks	0	2	3
4 : Plastics101	0	12	1
5 : PreciousPlasticHowtoFinishObjectsfromRecycledPlastic	0	0	0
6 : RecyclingforKids	5	4	6
7 : RecyclingPlasticsResourceEfficiencyOptimizedSortingMethod	0	0	0
8 : SixRoofandPavementTilesfromPlasticWaste	0	15	1
9 : WaronPlasticIsn'tWorkingRecyclingMythsExposed	0	0	0
10 : WhatHappenstoYourRecycling	4	7	8
11 : WhyWereSoBadRecyclingPlastic	0	8	4

Table 2: Autocoded Themes from 11 YouTube Video Transcripts around “Plastic Recycling”

In terms of the sentiment in the extracted transcripts from the videos, the sentiment across the sets may be seen in Figure 11.



The respective video transcripts show different measures of sentiment across four categories: very negative, moderately negative, moderately positive, and very positive. (NVivo 12 Plus)

Figure 11: Autocoded Sentiment in 11 YouTube Video Transcripts around “Plastic Recycling”

Part 3: Google Images (social image sharing)

A set of imagery tagged “plastic recycling” (through a combination of folk tagging and machine-based tagging) was captured from Google Images. These resulted in 1,575 socially shared images. The tags for this imageset (for filtering) include the following: “art, infographic, recyclable, creative, diy, pet, melting, environment, paper, waste, ocean, kids, symbol, plastic bottle, clip art, numbers, heat compression, home, hdpe, factory, innovative, design, reuse, chart, step by step, plastic packaging, plastic pollution, mixed, glass, (and) plastic bag”. This imagery seems to

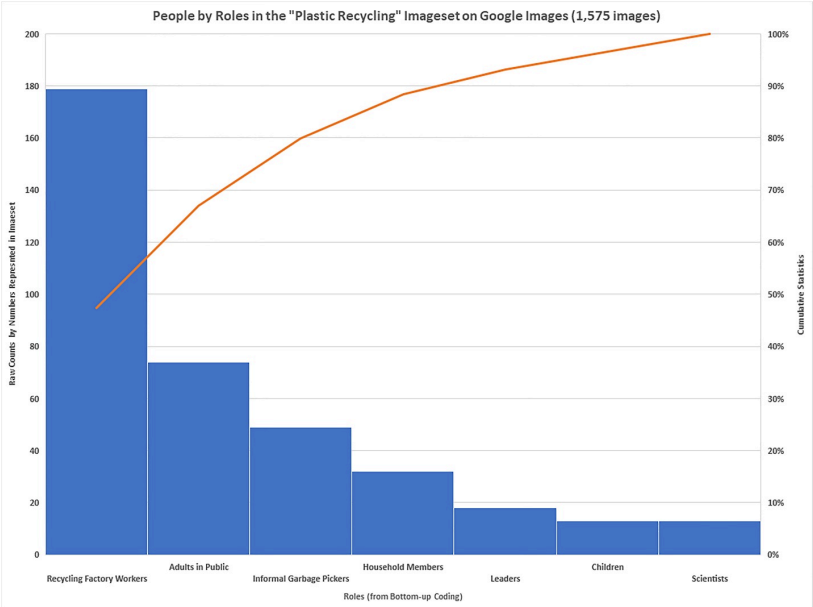
provide popular understandings but is not heavy on the actual science. Some of the surface messaging of these images are about getting clean and recyclable plastics from the general public into the plastic recycling system for processing. (Figure 12)



This screenshot shows a variety of mini-thumbnails related to the topic of “plastic recycling.”

Figure 12: “Plastic Recycling” Image Search on Google Images

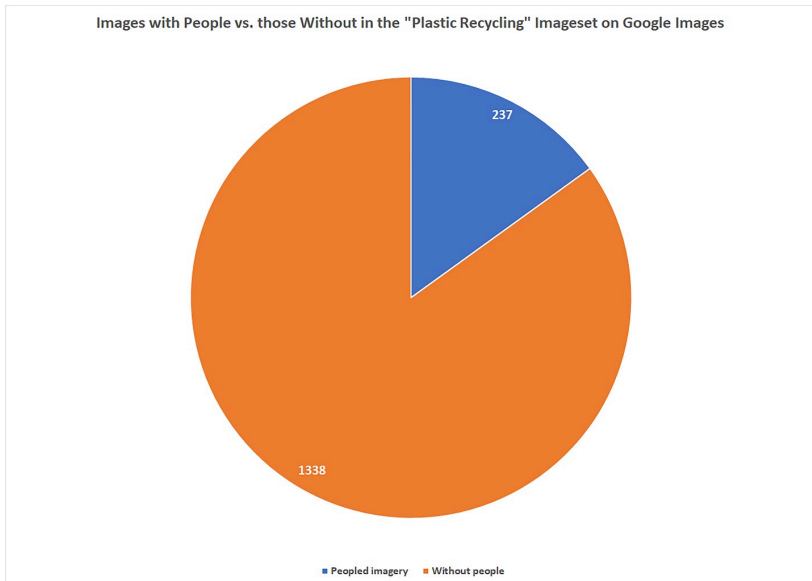
These images were coded by people type in depicted roles, possibly evocative of their stakeholder position in relation to plastic recycling. The results of this coding may be seen in the Pareto chart in Figure 13.



This Pareto chart shows how people are depicted by role in the plastic recycling social imageset.

Figure 13: People by Roles in the “Plastic Recycling” Imageset on Google Images (1,575 images)

In terms of the percentage of images with people in them, only a small percentage (15%) met that requirement. (Figure 14)



One approach to study the social imageset of plastic recycling is to observe the presence/absence of people in the visuals.

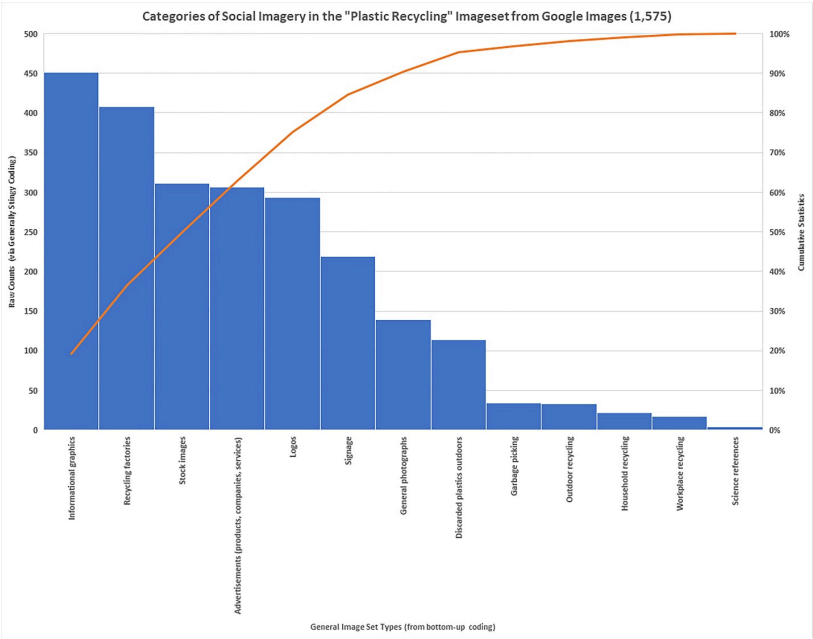
Figure 14: Images with People vs. those Without in the “Plastic Recycling” Imageset on Google Images (237/1,575 images or 15%)

Another count was also conducted. If are multiple people portrayed in an image, they are counted multiply. According to this count, there was an average of about 1.6 persons per image with people in them.

There were two animated gifs. One was of a hand pressing down a bottle, which reconstitutes into a pair of green-and-white striped pants. Another showed a hand depositing a bottle for recycling into a bin.

Finally, a rough bottom-up coding approach was applied to the 1,575 images, to capture a sense of frequency of image types. Generally, stingy coding was applied, which meant trying to code one image to one category only; however, there was some overlap between “logos” and “advertisements” and a few other over-

laps, so this work resulted in 2,351 descriptions from a set of 1,575. (Figure 15)



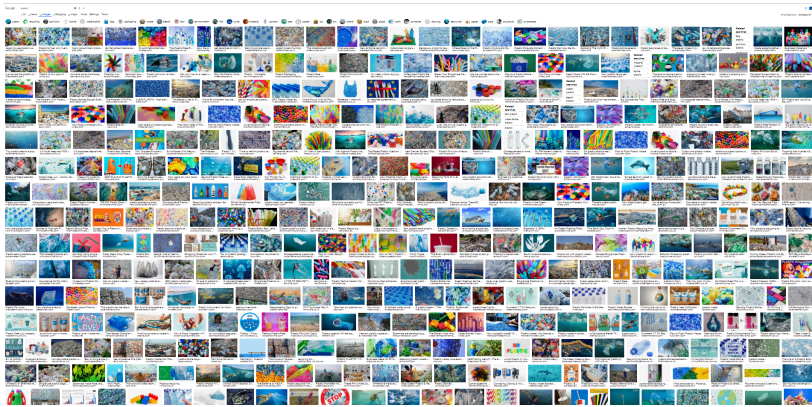
The social imagery in the plastic recycling set may be depicted in terms of functional categories: informational graphics, recycling factories, stock images, and so on, in descending order, in this Pareto chart.

Figure 15: Categories of Social Imagery in the ‘Plastic Recycling’ Imageset from Google Images (1,575)

To elaborate, the “infographics” included a visual of the pricing of recyclable plastics, types of plastics, contamination issues from “commingling,” cross-contamination, statistics data, diagrams, recycling rates across types, scientific applications, the location of the plastic type labeling on a plastic bag, a plastic lump with veins like a rock, “ocean plastic recycling,” a chemical chain, cross-contamination of containers, steps to putting together a standing recycling basket made of plastic, and others. Those

coded to “recycling factory” include conveyer belts with recyclables being moved, plastic recycling machinery, building exteriors, bundled recyclables, and others. For “discarded plastics outdoors,” these included beaches with wash-up bottles and piles dumped in outdoors spaces. For “household recycling,” these included household recycling bins on roadsides, a man dropping a full garbage bag into a dumpster, and recycling containers. The “science references” showed references to chemical compounds and science labs. The “workplace recycling” showed recycle bins in office settings. The “outdoor recycling” showed outdoor bins in parks. “Garbage picking” showed people picking through garbage for valuables. The “logos” captured business and other visual symbols. The “signage” category showed various types of messaging: “Not All Plastic is Recyclable,” “trash to cash,” “What Numbers of Plastic are Recyclable,” (not ads), “Soft Plastic Recycling,” “At Home Recycling,” “Methods of Plastic Waste Management,” “Plastic Bottles and Aluminum Can,” “10 Facts about Plastic Recycling,” “Recyclable Plastic Only,” “PET Bottle Washing,” “Keep Calm and Recycle Plastic,” “PET Bottle Washing,” “What Happens to Your Plastic Bottles,” “Reduce, Reuse, Recycle,” and “Recyclable Plastic Only.” The signs were for blog headers, report headers, and usually contained both an image and text. The catch-all category were general photographs related to plastic recycling: a plastic bag in a shopping cart, a close-up of plastic bottles, plastic bottles on a light table, recycled green hand chairs, stylized photo of positioned bottles, plastic containers, stock image of water poured from plastic bottle into a plastic cup (stylized), studio photos, and others. “Stock images” were their own category, with highly stylized imagery (whether from the photography setup and / or the post-production. “Advertisements” were designed images for the selling of products, services, or brand names. One photo was initially thought not to belong, but on second look, it was a view of a garden with bright tiles, which were likely made from a plastic composite. Certainly, de-contextualized images can be somewhat ambiguous.

To follow on, a search for “plastic” was conducted in Google Images. Interestingly, some of the tags here clearly refer to recycling (bold-faced and underlined): “ocean, recycling, pollution, bottle, water bottle, bag, packaging, **waste**, **beach**, **ban**, **environment**, **fish**, **turtle**, material, cartoon, sea, poster, toy, art, **island**, food, glass, craft, container, drawing, **sea turtle**, paper, pipe, sculpture, **awareness**” (boldfaced and underlined). (Figure 16)

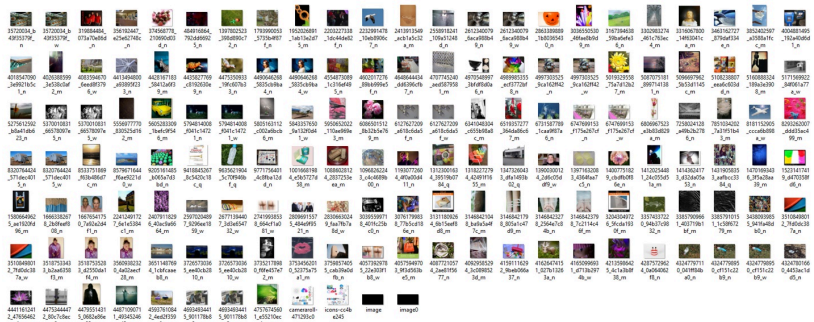


This screenshot shows mini-thumbnails of some of the “plastic” social images captured via Google Images.

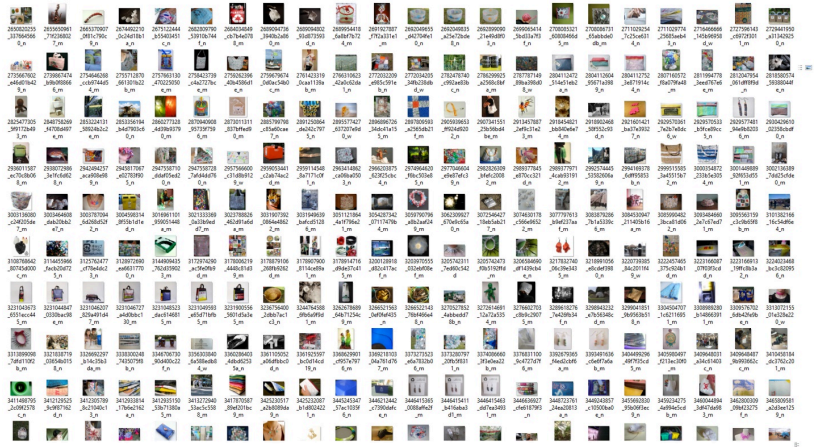
Figure 16: “Plastic” Image Search on Google Images

Part 4: Flickr (social image sharing)

Searches were conducted on the Flickr social image sharing site for both “plastic” and “plastic recycling,” with two resulting imagesets (Figure 17). The tags for images on Flickr are machine-applied and focus on visual senses: red, dark orange, orange, pale pink, lemon yellow, school bus yellow, green, dark lime green, cyan, blue, violet, pink, white, gray, and black...in terms of colors...and then also black and white, low depth of field (shallow focus), minimalist, and patterns.



“Plastic” Imageset on Flickr



“Plastic Recycling” Imageset on Flickr

This visual shows the “plastic” vs. “plastic recycling” imagesets from the Flickr social imagery sharing site. The subset of images are represented as mini-thumbnails.

Figure 17: “Plastic” and “Plastic Recycling” Imagesets on Flickr

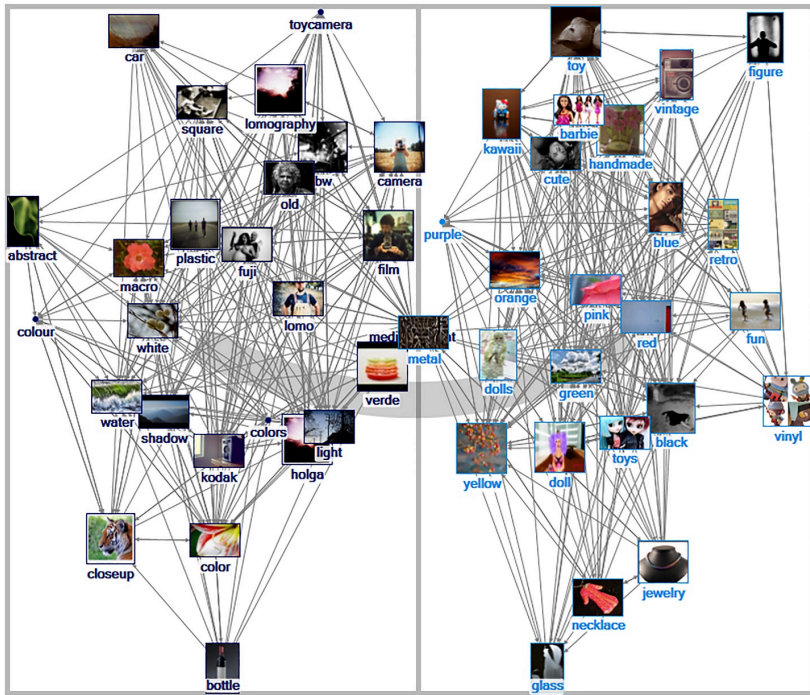
In the “plastic” set (150 items), there are images of the following: various types of plastic-wrapped foods, plastic toys, faux food, human hands cuffed by plastic six-pack ties (and others with regular plastic zip ties), a Halloween pumpkin, straws, a plastic Jesus figure, a farm field being tilled with a tractor, empty newspaper boxes with plastic fronts, raincoats, plastic frogs and mallard ducks, packaged drinks, plastic furniture (mostly chairs), a deco-

rative bowl, a sunflower, a white plastic chair, a hippo, a reindeer, an airplane, forks, a water bottle, a mobile trailer, and lacy plastic coasters. There are a few images about plastic surgery, including body contouring, for a different “sense” of plastic.

In terms of “plastic recycling” (1,796 items), there are images of the following: icons indicating different types of plastics, interwoven plastic strands, a person dressed in various types of plastic items, data visualizations (about types of plastics), crafts “recycled” from discarded plastics (baskets, earrings, necklaces, decorative pins, coats, shoes, sculptures, and others), a parking lot filled with plastic or rubber recycling totes, a colorful circular carpet, a bedraggled Christmas tree, transparent bags of recyclables, mobile phone holders, a man dumpster diving to collect recyclables (likely for micro payments), a dragon sculpture made of recyclable materials, woven baskets, crafting, knitted hats, a bicycle cart packed with cardboard and plastic bags of recyclables, inventions, 3D printed figurines, a knitted fruit bowl containing green apples, key rings, a “plastic bottle bank” for collecting recyclables, toys, a discarded styrofoam food container, signage, a recyclables igloo, a sign advertising “BPA-free products,” plastic bottle caps, trucks hauling recyclables, and other variations. There were also depictions of plastic and Styrofoam (a form of plastic) food containers. There were logos and icons related to the topic. Also, there were images of recycling campaigns, with people speaking from podiums. Several photos involved a “recycle yourself” message, which refers to a type of composting burial available in limited release. There were photos of plastic foods. There were images of plastic ropes, factory sites, industrial machinery, and plastic straws.

Finally, a related tags network was extracted around “plastic” on Flickr to understand evocations, and two interrelated groups of tags were extracted. The first (box to the left) evokes various durable goods products related to plastics (cars, cameras, and

others), and the latter seems to focus more on toys, dolls, barbie, jewelry, and handmade goods. (Figure 18)



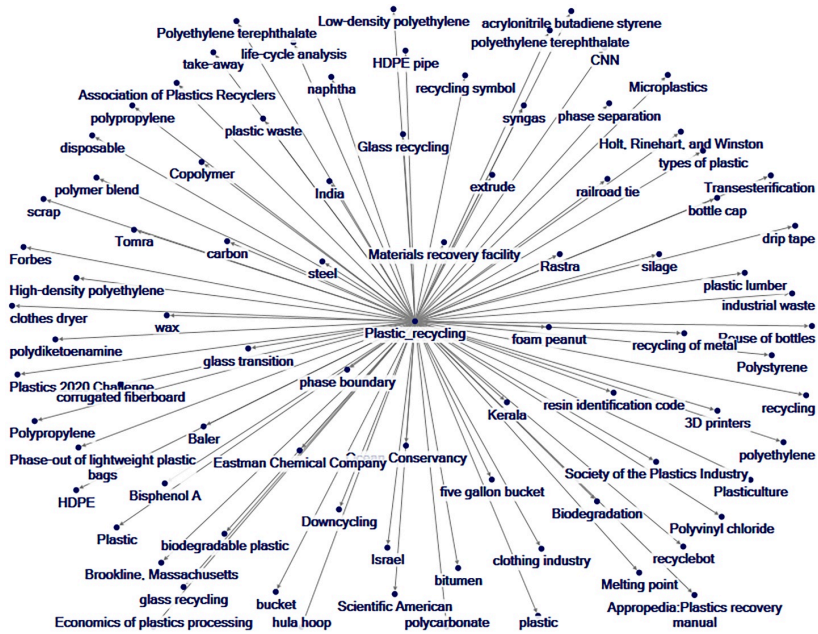
This network graph shows interconnections between folk tagging of social imagery shared with “plastic” as one of the tags (at 1.5 degrees). (NodeXL)

Figure 18: “Plastic” Related Tags Network on Flickr Social Image Sharing Site

Part 5: Wikipedia (crowd-sourced global encyclopedia)

Another social media approach to “plastic recycling” is to explore the article-article networks in the open-source Wikipedia, in particular the English version of this crowd-sourced information source. The article network shows the outlinks from the article “Plastic_recycling” at one degree to other articles on Wikipedia (Figure 19). There are links to various organizations, types of

plastics, companies, locations, publications, publisher names, and other references.



This article-article network graph shows the outlinks (within Wikipedia) from the "Plastic_recycling" article page.

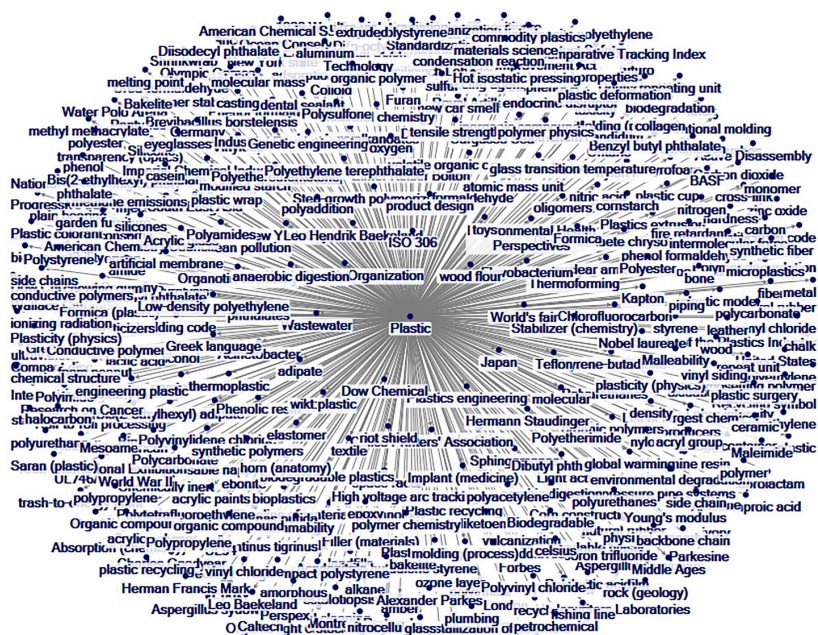
Figure 19: “Plastic Recycling” Article-Article Network on Wikipedia (1 deg.)

A trawl of “Plastic” article-article networks at one degree shows even more complexity (Figure 20). The articles on Wikipedia include the following: “Plastic, Timeline of materials technology, Thermoforming, Thermal cleaning, Roll-to-roll processing, Progressive bag alliance, Organic light emitting diode, Light activated resin, Film, Corn construction, Rotational molding, Injection molding, Molding (process), Plastics extrusion, Plastic film, Plastic recycling, Plasticulture, Self-healing plastic,

Microplastics, Plastics engineering, Caltech, nuclear arms race, space race, Styrene-butadiene, South East, Asia, Sergei Vasiljevich Lebedev, ebonite, Colloid, latex, Natural rubber, soda-lime glass, transparency (optics), plain bearing, Step-growth polymerization, caprolactam, nylon riots, Pantyhose, stocking, silk toothbrushes, Elmer Keiser Bolton, Wallace Carothers, New York City, 1939 World's Fair, polyamide, mylar, Shrinkwrap, Styrofoam, plastic model, New York state, Belgian-American, Leo Hendrik Baekeland, formaldehyde, phenol, building code, Ontario, firestop, resin identification code, Recycling symbol, plastic container, Society of the Plastics Industry, Royal Artillery Barracks, Water Polo Arena, Olympic Games, Vinyloop, trash-to-energy plant, landfills, Active Disassembly, Labor intensity, future, Phenol-formaldehyde, *Geotrichum candidum*, *Nocardia*, Sargasso Sea, ultraviolet, *Brevibacillus borstelensis*, *Sphingomonas*, *Pseudomonas fluorescens*, oligomers, *Acinetobacter*, *Aspergillus sydowii*, *Aspergillus niger*, *Lentinus tigrinus*, *Phanerochaete chrysosporium*, *Aspergillus fumigatus*, polyhydroxyalkanoates, biodegradable plastic, *pseudomonas putida*, styrene, methanogenic consortia, pestalotiopsis, polyurethane, aminocaproic acid, nylon 6, flavobacterium, wastewater, ocean pollution, ocean acidification, disposable nappy, plastic cup, polymer degradation, adsorption, absorption (chemistry), alkane, pyrolysis, toxicity, incineration, methane emissions, carbon dioxide, greenhouse gas, ozone layer, chlorofluorocarbon, Montreal Protocol, microplastics, Deutsche Welle, Environmental Science & Technology, Forbes, Ocean Conservancy, amber, chemical decomposition, phthalates, new car smell, volatile organic compounds, plastic wrap, Bis(2-ethylhexyl) adipate, dental sealant, Environmental Health Perspectives, endocrine disruptor, estrogen, bisphenol A, National Geographic Society, carcinogen, International Agency for Research on Cancer, World Health Organization, alkylphenol, Consumer Product Safety Improvement Act, di(n-octyl) phthalate, diisodecyl phthalate, diisononyl phthalate, benzyl butyl phthalate, dibutyl phthalate, Bis(2-ethylhexyl) phthalate, European Union, toys, phthalate, adipate, plas-

ticizers, plastic colorant, plasticizer, rheology, plasticizer, reinforcing agent, fire retardant, stabilizer (chemistry), chemically inert, zinc oxide, ivory dust, wood flour, chalk, filler (materials), polymer stabilizers, organotin chemistry, inorganic compound, Comparative Tracking Index, UL746A, high voltage arc tracking rate, UL94, Flammability, Underwriters Laboratories, ISO 306, International Organization for Standardization, American Chemistry Council, Germany, Japan, United States, American Chemical Society, Dow Chemical Company, List of largest chemical producers, DuPont, Calico Printers' Association, Dow Chemical, Giulio Natta, Imperial Chemical Industries, BASF, World War II, World War I, Bakelite, galalith, ivory, alcohol, nitric acid, cellulose, World's fair, London, 1862 International Exhibition, Birmingham, Alexander Parkes, Parkesine, vulcanization, Charles Goodyear, Industrial Revolution, industrial chemistry, casein, Middle Ages, Mesoamerican, organic polymers, Galalith, collagen, nitrocellulose, natural rubber, shellac, chewing gum, Polydiketoenamine, Polysulfone, Silicone, Furan, cornstarch, lactic acid, Polylactic acid, modified starch, Plastarch material, Kapton, Polyimide, Polyetherimide, Maleimide, Implant (medicine), biocompatibility, polyetheretherketone, Urea-formaldehyde, Formica, Melamine resin, recycle, Formica (plastic), Young's modulus, phenol formaldehyde, Phenolic resin, Teflon, Polytetrafluoroethylene, acrylic paints, Perspex, acrylic polymer, Acrylic glass, boron trifluoride, amide, amine, epoxy, Acrylonitrile butadiene styrene, Saran (plastic), Polyvinylidene chloride, polyvinyl chloride, Polyurethanes, High impact polystyrene, Compact disc, foam peanut, Polystyrene, plastic pressure pipe systems, Polypropylene, Polyethylene terephthalate, garden furniture, Low-density polyethylene, High-density polyethylene, Polyethylene, textile, fiber, Polyester, riot shield, eyeglasses, Polycarbonate, fishing line, nylon, Polyamides, commodity plastics, polycarbonate, global warming, bioplastics, Biopol, Genetic engineering, starch, biodegradable additives, anaerobic digestion, aerobic digestion, environmental degradation, biodegradation, ultra-violet radia-

tion, biodegradable, copper, polyacetylene, conductive polymers, vinyl chloride, crystallization of polymers, intermolecular force, melting point, molecular, amorphous, crystalline, methyl methacrylate, atomic mass unit, polyvinyl chloride, polystyrene, polypropylene, polyethylene, thermosetting polymer, thermoplastic, elastomer, engineering plastic, biodegradable plastics, conductive polymers, product design, celsius, ionizing radiation, oxidation, chemical properties, glass transition temperature, tensile strength, density, hardness, physical property, cross-link, polyaddition, condensation reaction, halocarbon, polyurethanes, silicones, polyester, acryl group, side chain, chemical structure, side chains, backbone chain, repeating unit, monomer, repeat unit, sulfur, nitrogen, oxygen, carbon, organic compound, aluminum, plastic deformation, synthetic fiber, artificial membrane, extruded, hot isostatic pressing, casting, plasticity (physics), Greek language, wikt:plastic, plastic recycling, polymer physics, Herman Francis Mark, polymer chemistry, Hermann Staudinger, Nobel laureate, materials science, Leo Baekeland, bakelite, plastic surgery, vinyl siding, plumbing, piping, ceramic, glass, metal, leather, bone, horn (anatomy), rock (geology), wood, petrochemical, molecular mass, organic polymer, polymer, plasticity (physics), molding (process), malleability, organic compound, (and) synthetic polymers. If nothing else, this list shows something of the complexity of plastics and their interwoven-ness in human lives.



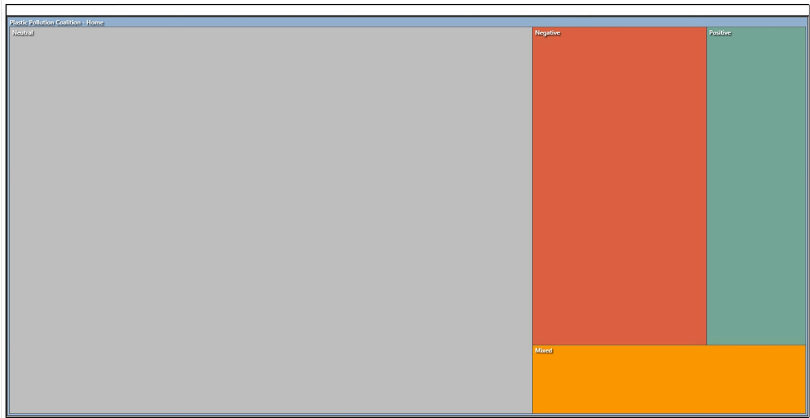
This article-article network graph shows outlinks from the “Plastic” article page on Wikipedia to other articles on Wikipedia.

Figure 20: “Plastic” Article-Article Network on Wikipedia (1 deg.)

Part 6: Facebook (social networking site)

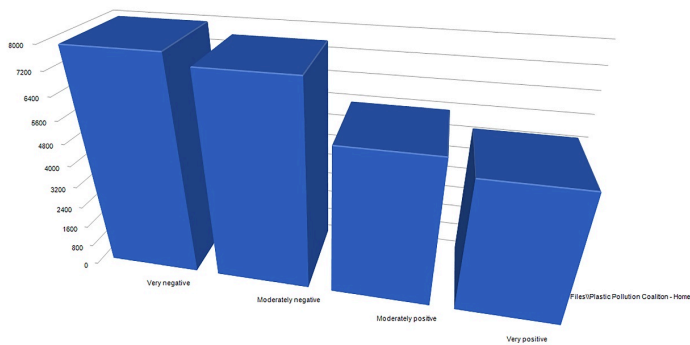
The Facebook social networking site seemed to have several accounts focused on plastic recycling.

A data capture from the @PlasticPollution account (<https://www.facebook.com/PlasticPollution/>) of the Plastic Pollution Coalition resulted in a capture of 1,988 posts and 60,425 comments, but multiple attempts to process these computationally resulted in failure, and only autocoded sentiment was captured, showing a majority of neutral text (as is typical with most natural language) but with negative sentiment predominant where sentiment was present (Figures 21 and 22).



This treemap diagram shows the relative sentiment labeling from the Facebook poststream for @PlasticPollution's account.

Figure 21: Autocoded Sentiment from the @PlasticPollution Poststream on Facebook (treemap diagram)



The @PlasticPollutionCoalition poststream on Facebook trends negative sentiment although the text shows loading on each of the sentiment categories.

Figure 22: Autocoded Sentiment Analysis from the @PlasticPollutionCoalition Poststream on Facebook (3D bar chart)

As to the @LessPlasticUK account (<https://www.facebook.com/LessPlasticUK/>) on Facebook, 25 posts and 29 comments were

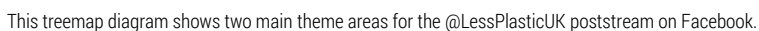
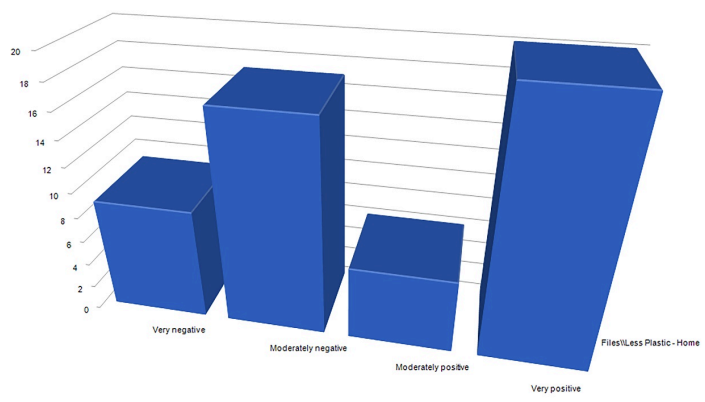


Figure 23: Autocoded Themes from the @LessPlasticUK Poststream on Facebook

This latter account tends much more towards positive sentiment and moderately negative. (Figure 24)



The messaging on the @LessPlasticUK poststream on Facebook shows loading on both “very positive” and “moderately negative” and the predominant sentiments.

Figure 24: Autocoded Sentiments from the @LessPlasticUK Poststream on Facebook

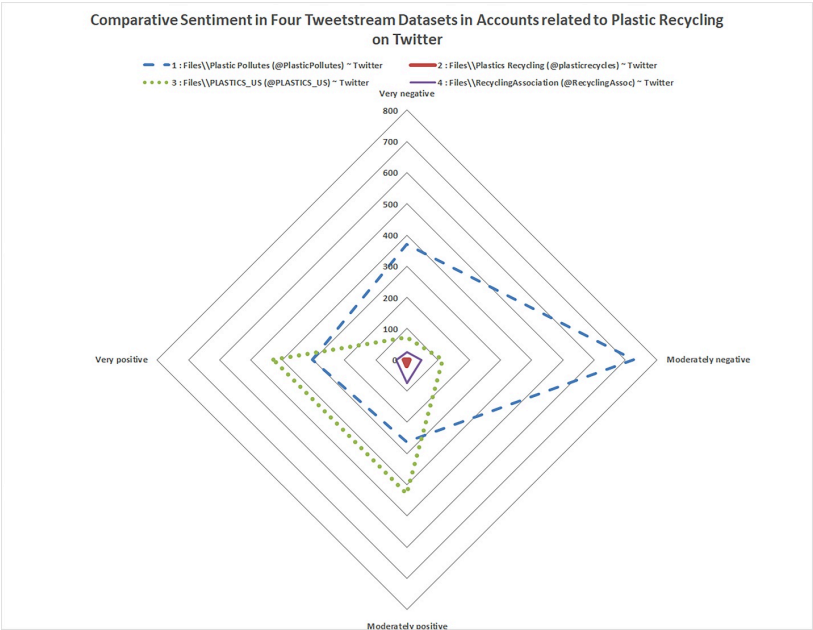
Part 7: Twitter (microblogging site)

There were four Twitter accounts found to relate to plastic recycling specifically. These are listed in Table 3, with their social statistics included.

	Tweets	Following	Followers	Likes
@plasticrecycles, https://twitter.com/plasticrecycles Worcester, England munchy.com Joined Jan. 2014	449	135	770	102
@PlasticPollutes https://twitter.com/PlasticPollutes World plasticpollutioncoalition.org Joined Sept. 2009	18,500	6,605	44.900	13.400
Alliance to End Plastic Waste @endplasticwaste https://twitter.com/endplasticwaste endplasticwaste.org Joined Dec. 2018	—	7,572	76	—
RecyclingAssociation @RecyclingAssoc https://twitter.com/RecyclingAssoc Daventry, England Therecyclingassociation.com Joined Sept. 2016	872	393	1,224	203

Table 3: Four Twitter Accounts Related to Plastic Recycling

An analysis of the four respective Tweetstreams were conducted, showing different dimensions of sentiment, including very negative, moderately negative, moderately positive, and very positive. (Figure 25)

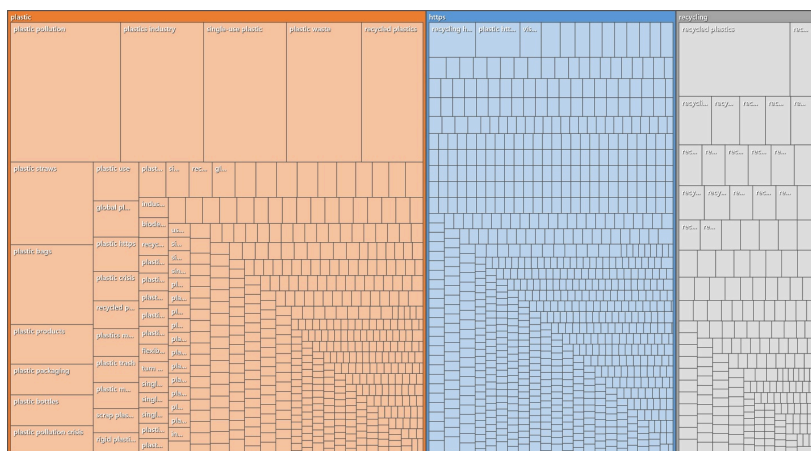


In this spider chart (radar chart), the four tweetstream datasets are compared across machine-coded sentiment categories. This suggests that the social (and other) dynamics of a microblogging account may involve something of massmood.

Figure 25: Comparative Sentiment in Four Tweetstream Datasets in Accounts related to Plastic Recycling on Twitter

The autocoded themes from these combined sets may be seen in Figure 26. Run singly, no topics could be extracted, potentially

based on the succinct nature of microblogging messages / tweets. The high-level topics were “plastic,” “https,” and “recycling,” which is suggestive of general focuses...but also that there are many references to off-site webpages (via the “https”).



Three main theme areas were identified from the combined tweetstream datasets related to plastic recycling: plastic, https, and recycling. The subthemes are of further and more specific interest.

Figure 26: Autocoded Themes from Four Combined Tweetstream Datasets of Twitter Accounts Related to Plastic Recycling

In this space, there are some common hashtags, including #plasticpollution, #endplasticwaste, and others.

Part 8: Google Correlate (a mass-scale search term correlation w/ other search terms over weekly time in a geographical region)

On Google Correlate, “plastic recycling” as a search phrase resulted in no correlates for the following locations: Argentina, Australia, Austria, Belgium Brazil, Bulgaria, Chile, Colombia, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, India, Ireland, Israel, Italy, Japan, Malaysia,

Morocco, New Zealand, Norway, Peru, Philippines, Poland, Portugal, Romania, Russian Federation, Saudi Arabia, Singapore, Spain, Singapore, Sweden, Switzerland, Taiwan, Thailand, Turkey, Ukraine, Venezuela, and Viet Nam. This might suggest a wide lack of awareness of the issue, on the one hand, or at least a non-use of Google Search (the world's leading search engine) using the English phrase for their searches. (There is varying but high penetration of English in most of those listed countries.) For Mexico, there were only two associations: "mina mexico" and "patarroyo" (0.621 and 0.617). (Table 6) In Canada, "plastic recycling" was just linked with "environmentally" ($r=0.6001$). In Egypt, those search terms were linked just with كتاب اولاد حارتنا (translated on Google Translate as "book children of our neighborhood" with an $r = 0.6015$). A listing of the correlations are shown for China, Indonesia, Mexico, the United Kingdom, and the United States (Tables 4 to 8).

0.7341	консульство	consulate
0.7325	hotel restaurant	—
0.7315	melange	—
0.7294	порт	port
0.7283	россию	Russia
0.7276	qq ubuntu	—
0.7264	tp4056	—
0.7264	quanjing	—
0.7246	antibacterial activity	—
0.7241	the degradation	—
0.7217	transferred to	—
0.7215	环球 移民	global immigration
0.7214	梦见 吃饭	dream, see, eat
0.7209	carbon sequestration	—
0.7206	chemical constituents	—
0.7182	梦见 婴儿	dream see baby
0.7173	muchas	—
0.7171	benoy	—
0.7169	lietou	—
0.7166	s of	—

0.7164	j. am. chem. soc	—
0.7162	food industries	—
0.7159	淘宝网	Taobao bao
0.7155	anthocyanins	—
0.7155	怀孕几天	pregnant for a few days
0.7152	effective in	—
0.7149	superparamagnetic	—
0.7149	i am writing to	—
0.7147	avez	—
0.7142	moevenpick	—
0.71418	0,	—
0.714	jboss as	—
0.714	淘宝网	taobao wang
0.714	腰酸背痛	backache, back pain
0.7139	growth factor receptor	
0.7139	梦见牙齿掉	dream see teeth drop
0.7137	positive solutions	—
0.7131	www.odnoklassniki.ru	—
0.7131	梦见牙齿	dream see teeth
0.713	findchips	—

0.7129	авиалинии	—
0.7125	梦见亲戚	dream see relatives
0.7121	梦见儿子	dream see son
0.7118	大团	large group
0.7118	fenzhi	—
0.7117	anodized	—
0.7115	characterizations	—
0.7113	physicochemical prop- erties	—
0.711	波尿酸	urinary acid
0.7109	刚怀孕	just pregnant
0.7107	led 吸顶灯	led sunction lamp
0.7104	critically ill	—
0.71	organic acids	—
0.7096	azimut	—
0.7096	区别	distinction
0.7095	caak.mn	—
0.7095	ubiquitin ligase	
0.7093	auf den	—
0.7092	面包做法	bread practice
0.7088	梦见同学	dream see classmate

0.7087	remission	—
0.7087	sonax	—
0.7086	孕囊	gestational sac
0.7084	ubuntu 安装 qq	ubuntu installation qq
0.7084	小产后	small postpartum
0.7081	par la	—
0.708	人流后	after the flow of people
0.7078	graphene sheets	—
0.7077	梦见坟墓	dream see the grave
0.7077	dynamic response	—

Table 4: Weekly-Correlated Mass Search Terms with “Plastic Recycling” in China via Google Search (on Google Correlate)

0.6723	paper ekonomi	—
0.6528	la culture	—
0.6412	yudha perdana	Yudha Prime
0.6406	bhx	—
0.6377	tempat wisata terkenal di indonesia	famous tourist attractions in Indonesia
0.6368	tipe wanita	type of woman type
0.6358	configure raid	—
0.6344	カラ	Kara
0.6336	ellen portia	—
0.6302	wisata terkenal di indone- sia	famous tour in Indonesia
0.6287	haryatmoko	haryatmoko
0.6284	virtual memory adalah	—
0.6281	audio midi	—
0.6242	堀江	Horie
0.6228	lascaux	—
0.6227	kopertis yogyakarta	kopertis yogyakarta
0.6217	artist film	—
0.6192	midc	—
0.619	dos hermanos	two brothers
0.6188	water balance	—

0.6184	i veta	in knowing
0.618	star wars toys	—
0.618	intel 8086	—
0.6165	atac	—
0.6164	changkat	changkat
0.6145	ketidaktahuan	ignorance
0.6138	archimedes law	—
0.6131	angelina sonda	—
0.6121	sump filter	—
0.6105	kyocera indonesia	—
0.6088	makalah keamanan jaringan	network security papers
0.6087	topps	—
0.6084	txl	—
0.6051	lirik lagu laskar cinta	lyrics of love
0.605	f10a	—
0.6037	website bumh	bumh website
0.6033	direktorat bea dan cukai	directorate of customs and excise
0.6032	vietnam news	—
0.6024	badan pusat statistik surabaya	surabaya statistics center
0.6024	after world	—

0.6013	indo balau ume	indonesian ume
0.601	music camp	—
0.601	embosser	—
0.6004	巴西	Brazil
0.6002	decoder parabola	—

Table 5: Weekly-Correlated Mass Search Terms with “Plastic Recycling” in Indonesia via Google Search (on Google Correlate)

0.6213	mina mexico	my mexico
0.6176	patarroyo	patarroyo

Table 6: Weekly-Correlated Mass Search Terms with “Plastic Recycling” in Mexico via Google Search (on Google Correlate)

0.8765	developments
0.8717	park plaza hotel
0.871	college of food
0.8703	home loans
0.87	letter writing
0.8699	nuffield hospital
0.8699	itil
0.8692	reed employment
0.8691	cluttons
0.868	calculators
0.868	novotel
0.8677	crowne plaza hotel
0.8667	cipd
0.8665	estates
0.8662	spanish translations
0.866	surveying
0.866	international property
0.8651	holiday inn,
0.8644	travel inn
0.8641	up my street

0.8638	law society
0.8633	marriott
0.8631	commercial properties
0.8628	seasons hotel
0.8628	investments
0.8628	application forms
0.8627	patio hotel
0.8627	jurys
0.8624	hilton,
0.8621	travel inn manchester
0.862	derwentside
0.8619	cover letters
0.8619	covering letters
0.8616	fish 4
0.8615	sage line 50
0.8615	fish4jobs
0.8612	prospects
0.8611	my street
0.8607	surveys
0.8605	line 50

0.8604	bupa hospital
0.8601	eversheds
0.86	four seasons hotel
0.8599	neate
0.8598	wolfrace
0.8598	map.co.uk
0.8598	bda
0.8597	birmingham college of food
0.8591	dreweatt
0.8588	generators
0.8587	hsa
0.8587	sussex council
0.8587	estat
0.8586	cis
0.8586	generics
0.8585	recycling plastic
0.8584	commercial agents
0.8583	dreweatt neate
0.8581	salaries
0.8579	quality hotel

0.8579	synergy
0.8579	planning office
0.8579	hilton hotel
0.8576	commercial mortgages
0.8574	maternity rights
0.8573	training in
0.8573	homes.co.uk
0.8571	4 jobs
0.8569	& co
0.8568	registrars
0.8568	astate
0.8567	nuffield hospitals
0.8563	trada
0.8562	radisson hotel
0.8562	upmystreet
0.8561	www.ryanair
0.8559	conversions
0.8558	weight conversions
0.8557	art centre
0.8556	translations

0.8556	properties
0.8552	wholesaler
0.8552	dept
0.855	advise
0.8549	french dictionary
0.8548	tulip inn
0.8548	dfes
0.8547	limousines
0.8547	div
0.8547	youth service

Table 7: Weekly-Correlated Mass Search Terms with “Plastic Recycling” in United Kingdom via Google Search (on Google Correlate)

0.8907	recycling plastic
0.8817	earth friendly
0.865	green products
0.8631	recycled
0.8616	plastic recycle
0.8566	recycle paper
0.8483	recycling containers
0.8447	eco-friendly
0.8399	environmentally friendly
0.8397	green.com
0.8355	recycle
0.8279	get lyrics
0.8248	green companies
0.8248	green seal
0.8218	solar hot
0.8179	recycle logo
0.8178	microsoft sam
0.8178	juliet lyrics
0.8163	recycled paper
0.816	wind power

0.8138	solar hot water
0.8136	bank national
0.8129	green company
0.8124	dansen
0.8098	organic clothing
0.809	0mx lookup
0.8083	recycle symbols
0.8082	green hotels
0.8079	wind generator
0.8063	lsit
0.8041	recycle bins
0.8037	shopping bags
0.803	solar water
0.8028	paper recycling
0.8026	solar cell
0.8017	sigg bottles
0.8014	runescape cursors
0.8007	turbines
0.8005	smoke weed all day
0.7998	green construction

0.7994	food costs
0.7993	environmentally
0.7992	sigg water
0.7987	solar power
0.7984	foreclosure home
0.7984	composters
0.7978	green homes
0.7978	rad7
0.7974	foreclosure list
0.7967	new hip hop singles
0.7966	eco-friendly clothing
0.7966	green business
0.7962	myhotcomments.com
0.796	recycle containers
0.7946	sigg water bottles
0.7946	over now
0.794	0awn
0.7936	black diamond university
0.7936	lil wayne pics
0.7932	tppc

0.7928	recycled plastic
0.7928	photovoltaic
0.7926	kindercare learning
0.7926	mxi
0.7916	tribal war
0.7916	bank owned real estate
0.7915	forever the sickest kids lyrics
0.7915	safe water
0.7908	life.org
0.7906	green product
0.7905	global solar
0.7902	democrat.com
0.7901	real estate owned
0.7899	calorie count
0.789	green living
0.7889	ww.hotmail.com
0.7886	green shopping bags
0.7884	green office
0.7883	dumper
0.7882	maps.live

0.7881	hi5 .com
0.7879	home foreclosures
0.7874	irvine housing
0.7874	list.com
0.7872	green builders
0.7872	streaming anime
0.7867	compost bins
0.7865	esx server
0.7865	world group
0.7864	green stocks

Table 8: Weekly-Correlated Mass Search Terms with “Plastic Recycling” in the United States via Google Search (on Google Correlate)

The mental conceptualizations of “plastic recycling” clearly differ between China, Indonesia, Mexico, the United Kingdom, and the United States, in substance and in rank order of association based on time associations.

Discussion

To recap, the main research question and the two sub-research questions follow.

R1: What is the state of transnational advocacy for proper plastics management globally to prevent harm to humans, animals, and the environment, in a One Health conceptualization, in social media?

R1a: What are transnational meta-narratives?

R1b: What are transnational personal stories?

The transnational advocacy around plastics recycling is piecemeal, mostly focused in developed countries, although there are occasional messages about such efforts in developing countries. There are some development projects that motivate plastics collections from rivers for micropayments, in the news. Anecdotally, there are stories of misuses of plastics. One involves farmers reusing plastics that used to contain pesticides...for food storage, resulting in human ingestion of toxins. In others, plastic is burned locally by street sweepers, releasing potential toxins into the air.

If advocacy requires messengers, and *cognoscere mentem, cognoscere hominem* ("know the motive, know the man"), then it may help to sketch out possible stakeholder communicators and their respective central motives in broad strokes:

- Plastic manufacturers stand to gain by encouraging plastic recycling so that plastic itself is not painted with a negative broad brush given its many benefits. There is an important place for plastic in human lives until an improved and practical substitute is available one day, if then. Professional groups have their lobbies promoting particular ideas and practices.
- Consumers appreciate convenience in their everyday lives, and they prefer low costs, and they prefer to be guilt-free. They also have concerns around One Health: human, animal, and environmental health. They want healthful lives and toxin-free environments.

- Plastic recyclers want a constant stream of recyclable plastics, properly cleaned and sorted, for processing. The more pre-arrival efficiencies that can be addressed, the less they have to operationalize. They also want a market for their processed plastics, so that the cycle pre- and post- is available.

Based on the social media messaging and interactions, the content seems to also mostly originate from the West into the larger world because of the locations of the respective social media accounts around this issue, the types of photos shared, and the types of social messaging. The “regime of meaning” comes from a Western social hand, with ready access to recycling containers and collection sites, ready access to information in English and diagrams, and so on. Plastic recycling is portrayed in the context of general approaches to recycling of electronics, batteries, paper, glass, and other products, so it is not an issue handled in isolation.

From a social media sense, the broad public has a general sensibility about plastic recycling, but the public knowledge (if informed only by the textual and visual and video postings on social media and the occasional mass media journalistic article) seems superficial, something quite amateurish, but sufficient to motivate constructive behaviors. These social messages help create public awareness and public narratives—of what conscientious world citizens do to live peaceably in the world and within its systems and in alignment with nature. Certainly, the will is a start, but the will has to be backed up by smart decision making and constrained and smart consumption.

This work involves collected information from (1) a mass-scale digitized book corpus term frequency search, (2) a social video sharing site, (3 and 4) two social image sharing sites, (5) a crowd-sourced online encyclopedia, (6) a social networking site, (7) a microblogging site, and (8) mass-scale search and time-based associations, around “plastic” and “plastic recycling”. This trawl

through social media collects glimpses of transnational meta-narratives and personal stories around “plastic recycling”. So what are some potential “transnational meta-narratives”? There are general stories:

- The plastic management challenge is a global one, with depictions of plastic waste in developed and developing countries, in the oceans, and in peoples of the world.
- Human over-consumption is a problem in the world and is irresponsible and harm-causing. There is no impactless consumption, even though “0-carbon” and light environmental footprints are aspirational ideals. Green virtue is an important goal.
- Scientific research may provide some limited contribution to a solution, with biodegradable plastics (and other compostable packaging), bacteria that consume plastics, new plastics that may be recycled *ad infinitum*, and other approaches. These include work by materials scientists, biological engineers, chemical engineers, environmental scientists, and others. A recent discovery by an amateur beekeeper was that waxworm caterpillars can digest plastic, “even polyethylene, a common and non-biodegradable plastic currently clogging up landfills and seas” but which resulted in a “toxic substance” excreted; current research continues in the mechanics of the caterpillar interaction with the microbes in its digestive tract and in how this finding may be applied and scaled to help solve this issue of plastic waste (Hunt, Mar. 4, 2020).
- Plastic recycling is not simple. It requires savvy consumers and industrial approaches that maximize the arriving consumer-used plastic (with various adulterations, “mixed recycling” contaminants, and other challenges). Much plastic is not recyclable and ends up in landfills, based on the original feedstock used to create the original plastic and other processes along the way.

Much plastic can only be “downcycled” to make products like bags and clothing and carpet, and not “upcycled” to remake clear-plastic bottles for carrying food products and drinks.

- Plastic recycling is not costless. There are inputs required in terms of collection, transportation, processing, and others, that are required to actualize this in the world. There are various inputs into whether recycling plastics is worth the resources (Brueck, Oct. 8, 2019).
- Also, there are effluents as a byproduct of plastic recycling (Santos, Teixeira, Agnelli, & Manrich, Oct. 2005). Such waste products, if untreated with “a typical physical-chemical treatment” at their source before discharge stand to affect the larger environment negatively. (Santos, Teixeira, Agnelli, & Manrich, Oct. 2005, p. 159)
- In the plastic lifecycle, there are human livelihoods at play. Livelihoods are part of human well-being.
- Perhaps modern life can involve more purposive consumption of materialia that does not entail such environmental costs on human, animal, and environmental health. (Some lurid images include dead sea life with the plastic contents in their stomachs displayed. There are images of microplastics in the human bloodstream, depicted in diagrams.)

These stories help mitigate potential tunnel vision in addressing the challenges. They inform of a more complex context, when taken together. In terms of the “personal stories” (at the lived level) about plastic recycling on social media, a few may be discerned and extracted.

- People can make decisions about what they consume, use, recycle, and discard. They can take responsibility for what they learn and remember and apply to their own lives. They can play a critical role in plastic usage, recycling, and management. Their self-determined

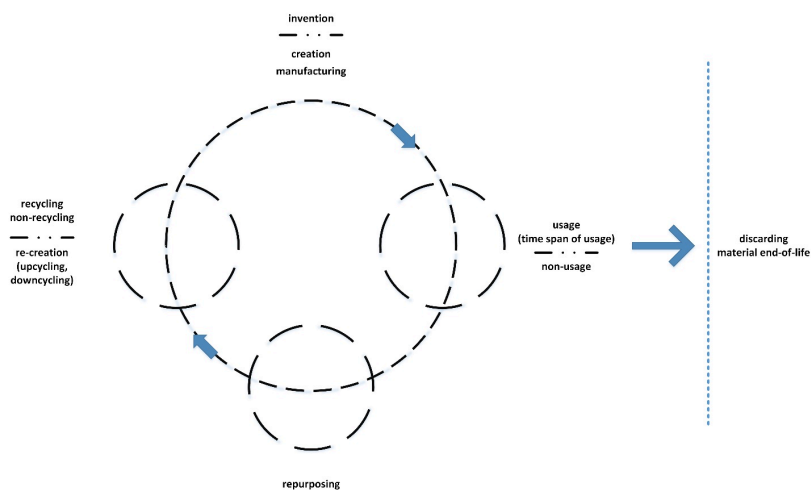
awareness and behaviors are important. There is a virtue in being frugal and green. People are empowered agents in the choices they make.

- How people respond to plastic recycling, through their own creative repurposing of plastics, may be an extension of their self-expression. On social media are repurposed artworks, clothing, jewelry, knit bags, knit baskets, and other items, and these may result in lessened usage of other materials for those same types of products (less use of wood, less use of natural fibers, etc.). These acts and creations are also about awareness of plastics usage and so have an educative purpose.

Certainly, other transnational meta-narratives (macro-level) and personal stories (micro ego-level) may be understood from these collected (strung-together) informational contents, with top-down types of coding as well as bottom-up. Additional questions are relevant:

- Are the transnational meta-narratives and personal stories around plastic recycling sufficiently coherent for the mass public's for understandings?
- Are they sufficiently motivating to encourage the desired pro-social actions?

A reasoned “green” (environmental) approach suggests that recycling is part of the most constructive One Health-based path, to protect human, animal, and environmental health. To actualize and operationalize this, people will have to make behavioral changes, manufacturing ones, scientific and technological advances, policy changes, and applied and practical changes. A read-through of the mass media coverage of this issue does show advances in each context. (Figure 27)



A Simplified Consumer Plastics Lifecycle (with off-path variants)

This diagram shows consumer options in how they may handle plastics, conceptually and practically.

Figure 27: A Simplified Consumer Plastics Lifecycle (with off-path variants)

In a lived sense, if people consumed less, fewer plastic items have to be manufactured or created. If less plastic went unconsumed and went straight to a landfill, that would save on wastage. If they used items consciously and avoided waste, that would also be important. If they repurposed plastics, that would mean less in the landfills (or at least slowing the time-to-landfill). Or if they recycled more, or more efficiently, there would be less plastic going to landfills. In the visual, there are a number of exit points, resulting in plastics in landfills. To solve such a challenge will require a whole of humanity approach, involving economic incentives, policy updates, disciplined lifestyles, scientific research, factory innovations, political will, and compelling ideologies. [Some narrative threads of the importance of recycling have already been part of naturalist religions like the worship of Gaia (earth, nature, fertility), and they have also been integrated

by various thinkers into Christianity (a monotheistic religion) and Buddhism (a belief system about the human condition and the ability to achieve nirvana), along various lines of argument. A core idea involves stewardship.] Perhaps there are strengths and weaknesses in each social context, in knowing of how to approach these challenges. Also, there may be substitutes for plastics that are also sufficiently practical and efficient to use. (A simple one is to use washable dishes and tableware). Whatever changes are advanced, these have to be balanced against people's livelihoods. Changes in one area may have implications on others, whether intended or unintended.

In the West where plastic recycling has been operationalized initially, people use recyclable machine-washable straws. Some restaurants have stopped enabling access to plastic straws while others enable access to paper straws. Plastic bags for grocery shopping are forbidden in some states in the U.S. Recycle bins capturing used consumer plastics are prevalent as are recycling centers. Municipalities have taken on recycling as a city service.

Future Research Directions

"Plastic recycling" in social media does seem to convey a fairytale about how recyclable plastics are or how easy it is to participate in the process ("mixed recycling" totes that do not require sorting). Ideally, people would clean out their plastics; ideally, they would soak off labels; ideally, they would bring their recyclables to a recycling station and not mix and cross-contaminate various materials. Still, to achieve awareness and buy-in, perhaps the fairytale sensibility is required.

Future research in this space may include other types of social media, such as particular user accounts, particular corporate accounts, and others, across multiple social media platforms. Perhaps additional platforms in the following explored types may be reviewed for this topic:

(1) a mass-scale digitized book corpus term frequency search, (2) a social video sharing site, (3 and 4) two social image sharing sites, (5) a crowd-sourced online encyclopedia, (6) a social networking site, (7) a microblogging site, and (8) a mass-scale search term analysis based on time-based associations with correlated search terms.

Or particular regionalisms may be explored, such as the senses of “plastic recycling” in urban vs. rural areas, or in a particular locale (municipalities, countries, regions, or others)...or within a particular culture...or within people groups. This issue would benefit from being mapped out in different ways.

Perhaps various social symbolism—visual, textual, and other modalities—may be explored in this space. What are analogies made to excessive plastic consumption? Plastic dumping? What is a symbol of a recycled object? How can the abstraction of frugality and self-denial and non-spending be portrayed as a luxury choice or a pious religious choices or a self-fulfilling healthy choice through symbols (like string bracelets and others shown on social media)?

Also, within this movement, are there “filter bubbles” (limitations of messaging intake) that may lead to extreme actions? Mass blame of others? Violent actions? And if so, what are the potential implications? What are ways to lessen extremist ideas in this space?

Conclusion

Mass attention is expensive to acquire, and it seems to be capture-able only a moment at a time. As to how people live ethically, there are many insights about this, across a range of topics and behaviors and choices. While the dumping of plastics seem like a physically local issue, it is actually a transnational and borderless one with plastics in the oceans (affecting all land masses

via beaches, via weather cycles), with the costs and externalities of creating plastics, with health effects from ingested and inhaled microplastics, and other factors. The lifecycle of plastics involves various externalities. The world is as-yet far from any sort of “net zero” way of using plastic—even as there are creative ideas for plastics re-use and recycling and “rationing” and non-use. The current state of equilibrium is of mass consumption and limited mitigations.

International environmentalism is bolstered by the “international networks for communication, the sharing of information, and the sharing of resources among environmental NGOs” (Dalton & Rohrschneider, 1999, p. 16). Nations that are less green regarding this issue may adopt the standards “of their richer, greener grading partners” in what has been termed the “California effect” (Vogel, Dec. 1997, p. 556). Transnational environmental groups do better with a “big tent” approach, even among members with “internal conflicts and debates over core ideological questions” which are normal for larger organizations (Doherty, 2006, p. 860). Writ large, researchers suggest that there are “three principal kinds of environmental movement, the post-material movements strongest in the United States and Australia, the post-industrial movements that are strongest in Europe and the post-colonial movements of the South” on global scale (Doherty & Doyle, Nov. 2006, p. 697). People groups *en masse* arrive at different understandings and capabilities related to environmentalism in different contexts, and collaborations across those spaces will require empathy and accommodations on all sides to each other’s differences. The environmental identity is abstractly positive across a range of contexts, but on-ground, it is a highly contested role (and sometimes very dangerous for those with the environmentalist identity because of the sense of potential differentiated interests from other industries and practices—like farming and ranching). There is a fine balance between freeing types of intersectional collabora-

tions and over-step into arrogance, given the importance of sovereignty.

There are environmental protection endeavors at the global level (the United Nations Environment Programme), transnational levels (many dozens of non-governmental organizations), national organizations (public and private sector organizations), and local ones. Each have different and sometimes overlapping constituencies, and social media play a critical role in their engagement. People on Earth have an important role to play to lessen the usage of plastics and to recycle what they use, within the limits of what is technologically possible. Social media inducements to engage constructively are potentially relevant to human awareness and motivations. However, at present, the plastics used in nondurable goods are mostly landfilled, with a small amount recycled (“Plastics: Material-specific data,” 2019).

Plastic or polymer recycling is inherently a transnational issue. The environmental and animal and human impacts cross borders, as do the supply chains, trade, and cross-border plastics recycling in bulk. Waiting for time and micro-organisms to potentially address the plastics issue, at least partially, is a non-starter because that timeline is too slow for the pace of human consumption, especially if it is to be sustainable and less-contaminating of the environment. Solving this issue of consumer plastics dumped into the world’s landfills and oceans is a hard problem that will require much more effort, coordination, resources, technologies, and time, to solve.

Ironically, plastics seem as popular as ever. Recent news accounts have highlighted the building of 3D-extruded plastic houses being built in the developing world, which also means that plastics will be much more common in the larger natural environment (Delbert, Dec. 12, 2019). Their low cost makes them the go-to choice for 3D printing and not other more biodegradable materials.

As to the social media aspect, some messaging is already being targeted toward children and youth, the upcoming generations. What can be compelling for those populations, and how can the messages be made appealing to individuals in these various groups? What mediated outreach campaigns can be more effective for such transnational advocacy? How can angel investors be encouraged to contribute to plastic recycling efforts through such social messaging? Practically, how can words and images and videos compel prosocial and pro-environmental behaviors to improve “one health” in terms of recyclable plastics or biodegradable plastics or lessened usage of plastics altogether?

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Key Terms

Feedstock: Raw material for an industrial process

Microplastic: Small pieces of plastic resulting from the disposal and breakdown of plastic as well as created objects for consumer goods

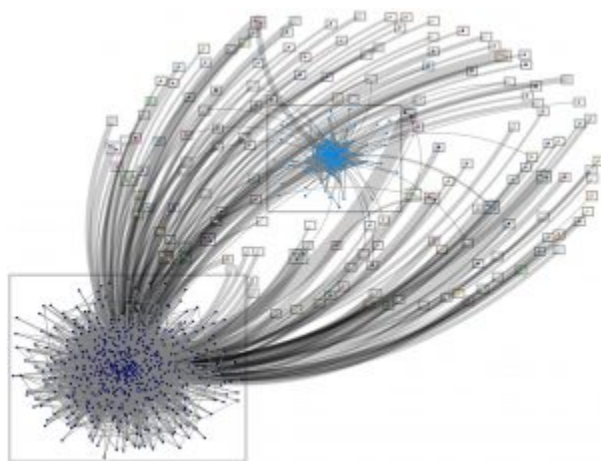
Plastic (noun): A synthetic substance created from organic or synthetic polymers

Pyrolysis (gasification): Decomposing of a material through high temperatures

One Health: The concept of the interconnectedness of human, animal, and environmental health across a range of health challenges

PART III

PART 3: ASSERTING HUMAN RIGHTS



3

**GLOBAL CITIZENS
AGAINST
SOCIO-TECHNOLOGICAL
INCURSIONS ON
PRIVACY, HUMAN
RIGHTS, AND
PERSONAL AND
SOCIAL
FREEDOMS:
TEMPORARY
PIXELS AND
EPHEMERAL**

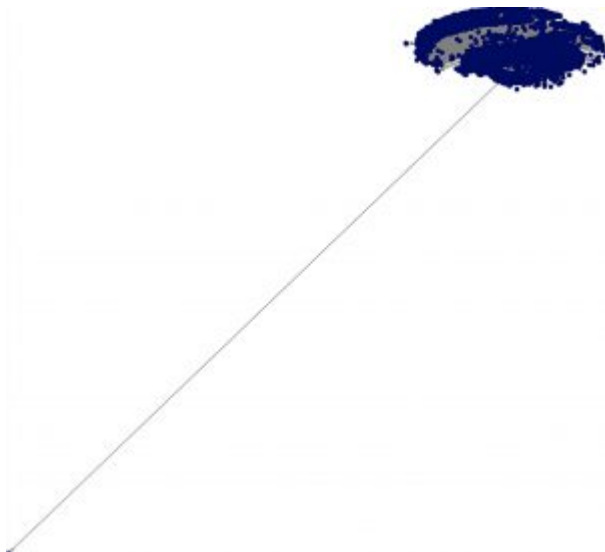
VOICES

Abstract

With the simultaneous advances in technologies across various fronts, private citizens have had to face their fears of government surveillance and over-reach and private industry manipulations of personal data for various types of sell. There is fear that individuals and humanity will be over-matched and outpaced, judged, bullied, and ultimately captured and constrained by technological enablements. This work explores the thinking, writ large, of threats to privacy, human rights, and personal and social freedoms, as expressed on social media. This uses game theory to inform an early and narrated game tree about the power and limits of online voices.

Key Words

Socio-Technological Incursions, Privacy, Human Rights, Human Freedoms, Transnational Advocacy, Social Media, Surveillance Technologies, Civil Liberties



Introduction

“As long as there shall be stones, the seeds of fire will not die.” —
Lu Xun (Zhou Shuren) (Sept. 25, 1881 – Oct. 19, 1936)

“As history teaches us, the character of warfare adapts to new circumstances. And as the saying has it, ‘Only the dead have seen the last of war.’” — Jim Mattis and Bing West in *Call Sign Chaos: Learning to Lead* (2019, p. 175)

“On the hill we had been at the start of something: of a new era in which conflict surges, shifts, or fades but doesn’t end, in which the most you can hope for is not peace, or the arrival of a better age, but only to remain safe as long as possible.” — Matti Friedman in *Pumpkinflowers: A Soldier’s Story* (2016, p. 222)

—

With the advent of various technologies—artificial intelligence, big data, data analytics, machine learning, near panopticon-level

surveillance, video stitching, hacking and counter-hacking, affective computing, encryption and decryption, automation, the Internet of Things (IoT), implantable technologies, biometrics identifiers, and facial recognition software—people around the world have become somewhat more leery of the capabilities of nation-states to monitor their own citizens and to potentially enforce draconian laws with hyper-precision and force. Such concerns of government surveillance were found in an experimental study to lower the willingness to share personal information online (Dinev, Hart, & Mullen, 2008). Such tenets are core in many information-technology-based movements, such as the Anonymous hacktivist group (Hai-Jew, 2013) and other transnational movements. In the U.S., citizens have militated against the bulk collection of telephone metadata (under the U.S. Patriot Act), which has been widely covered in the mass media. This issue has come to the fore with the massive information theft of secret U.S. government data and its dump by Edward Snowden in 2013, the social credit system in China in 2020 [built on closed-circuit television (CCTV) and apps and other information], the mass demonstrations over multiple months in Hong Kong against a proposed extradition law of those in Hong Kong to the People's Republic of China (PRC), the mass incarcerations of Muslims in Northwest China for “re-education,” and others. There are fears that people will be deprived of their civil liberties in a panopticon and that all-seeing-ness of governments will force population compliance and passivity. There would not be the authentic and empowered “consent of the governed” but acquiescence, docility, submission, and tractability. Colloquially, the narratives go as follows:

- People require a sporting chance against their government and their incursions into their personal lives.
- Rights of one entity end where the rights of another's begins, and there is a “zero sum” aspect to rights.
- Excessive buildup of personal citizen information enables a government to corrupt itself with too much

power (via information and knowledge); it encourages heavy handedness in how governmental power shapes out and is expressed in the world. Personal citizen information builds in vast data farms contributes to the government arsenal of knowledge and control. It enables citizen profiling, physical locating and tracking, and other endeavors of regulation.

Based on what is known about technological capabilities, the concerns are many. How much is knowable for individual (pattern of life, psychology) and group profiling (capabilities, leadership, likely lifespan) through direct data collection and inference attacks? What are the privacy implications of mass and targeted surveillance? What do technological enablements allow for repressive governments that would see religious (or any other) identity as a threat and act on that fear? What happens to people's personal and social freedoms in light of the fact that current technologies enable deeper knowledge of individuals (remotely): their professed values, their personalities (based on analyses of their expressions), their friendships, their expenditures, their real-time locations, their apparent politics, and other aspects? Is there a negative feedback loop possible based on "dataveillance" (data-based surveillance of persons in order to govern their behaviors), such as in a cycle where there is "recorded observation, identification and tracking, analytical intervention, behavioral manipulation" in a feedback loop that is endlessly recursive (Esposti, 2014, p. 213)? "Privacy" is defined as "the protection of unauthorized access to personal data" (Haunss, 2015, p. 227). "Privacy advocates" are those who are fighting "excessive surveillance" (Bennett, 2008, as cited in Bennett, 2012, p. 413).

Traditional concepts do not adequately capture the dynamic, volatile, overlapping and fragmented nature of privacy advocacy. There is certainly no clear structure. Neither is there a social movement with an identifiable base. Perhaps the best label is the 'advocacy network' which can be conceptualized

as a series of concentric circles. At the centre are a number of privacy-centric groups, such as the Electronic Privacy Information Center (EPIC) in which other issues are peripheral and, if addressed, have to be entirely consistent with the core pro-privacy (or anti-surveillance) message. As we move out of the centre of the circle we encounter a number of privacy-explicit groups for whom privacy protection is one prominent goal among several; many of the civil liberties and digital rights organizations, such as the American Civil Liberties Union (ACLU) or the EFF fall into this category. Within the outer circle, there is an indefinite number of groups, for whom privacy is an implicit or potential goal. Their aims are defined in very different terms—such as defending the rights of women, gays, and lesbians, the homeless, children, librarians, ethnic minorities, journalists and so on. Despite not explicitly focusing on privacy issues, the protection of personal information and the restriction of surveillance can be instrumental in promoting their chief aims. (Bennett, 2008, 57 – 61, as cited in Bennett, 2012, p. 415).

This issue is transnational because surveillance is “a global phenomenon” (Bennett, 2012, p. 415) and has to be challenged as such. The activists in this space are lobbying industries (particularly the few multinationals with wide global reach in this space) to change practices, both from within and without. They are lobbying various governments to change laws and practices. They are engaging other organizational entities, as well to advocate on their behalf and in support of their focal issue. Some of their general “power levers” are listed in Table 1. The highlighted cell between “General Public(s)” and “Social Media Messaging” is the focus of this work, with the base questions: “How potent are the temporary pixels and ephemeral voices online in support of transnational advocacy generally and this issue of human (privacy, human rights, individual and social protections) well-being against socio-technical incursions in particular? Why?”

Power Levers	General Public(s)	Vertical(s) / Industries	Government(s)	Other Entities (non-governmental organizations or NGOs, political organizations, non-profits, and others, as a catchall)
Public Demonstrations	Yes	No	No	Yes
Press Conference	Occasionally	Yes	Yes	Yes
Social Media Messaging	Yes	Yes	Yes	Yes
Mass Media Messaging	Occasionally	Yes	Yes	Yes
Courts of Law	Yes	Yes	Yes	Yes
Government Levers	Yes	Yes	Yes	Yes
Physical Force (at various levels)	Occasionally	Rarely	Yes	Occasionally
Combinations	Yes	Yes	Yes	Yes
Others	Yes	Yes	Yes	Yes

Table 1: Strategic “Cards” for the Respective Stakeholder Groups based on Social Norms

For issues that are advocated to a global audience, social media are *de rigueur* because of its global reach. Of course, given geo-

graphical distances and socio-cultural factors, transnational issues are understood and manifest in different ways in different localities, based on more organic concerns. Transnational movements manifest in different ways in different locales (Lehoucq & Tarrow, n.d.), resulting in an uneven geographical distribution of activist hotspots. Certainly, the issues and threats also are perceived differently, and the on-ground understood threat profiles and scenarios (actors, technologies, applications, policy and practice environments, and others) vary. Also, this work is not usually a once-and-done but a continuing endeavor across a number of fronts. In most cases, transnational advocacy groups are working in a context of less power against better financed entities with inherent power (of corporations, of nation-states). Some have argued that most people are only signaling a few dozen people in the world who are in sufficient positions of power to make large-scale changes, in one sense. On the other hand, there are also the many others in the world with “hearts and minds” to be won over because global issues may be affected by individual actions as well. Public opinion also helps define an “authorizing environment” for policy makers, because of the importance of the “consent of the governed” (even beyond democratic societies and even among highly controlled populations). Another core assumption is that humans tend to be conflictual, to commit to their own sense of the world and to be less receptive to the ideas of others; people advocate for their own senses of an idealized future, and in public space, they compete with others for attention and sway.

Transnational advocates engage various tactics of sharing “politically usable information quickly and credibly to where it will have the most impact” (“information politics”); sharing “symbols, actions or stories” (“symbolic politics”); calling out “powerful actors to affect a situation” (“leverage politics”), and asking more powerful actors “to act on vaguer policies or principles they formally endorsed” (“accountability politics”) (Keck & Sikkink, 1999, p. 95). Much of the organizing work then involves coalition

building and maintenance, research, strategic and tactical planning, fund-raising, marketing and branding, budgeting, strategic communications, outreaches, and others. Throughout, those advocates that maintain the high ground and act in alignment with stated values tend to earn a place at the table for that issue and related peripheral ones.

So to answer the research questions, this work will involve exploring the academic research literature, some mass media news coverage, and some digital residua on social media and Web 2.0 (including social imagery from a recent and ongoing multi-month demonstration). From these, a basic partially explicated “game tree” will be created which represents the binary decision of advance or retreat at various phases of advocacy, up and down an escalatory ladder.

Review of the Literature

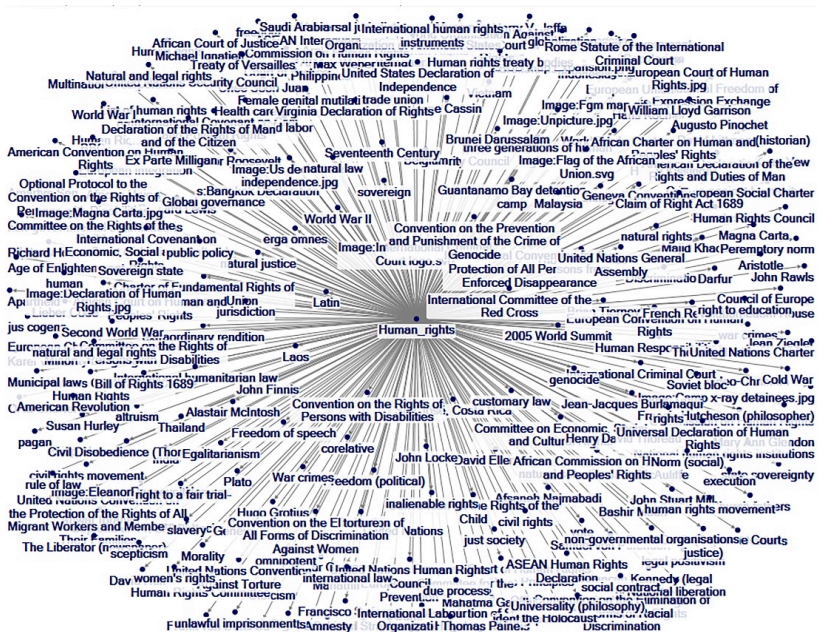
A “transnational advocacy network includes those actors working internationally on an issue, who are bound together by shared values, a common discourse, and dense exchanges of information and services” (Keck & Sikkink, 1999, p. 89). A central effort involves the framing of issues “to attract attention and encourage action” towards policy change (Keck & Sikkink, 1999, p. 90). Transformative social changes are seen as innovations, sparked by differing visions of the future as expressed in narratives (storytelling) (Wittmayer, Backhaus, Avelino, Pel, Strasser, Kunze, & Zijderwijk, 2019). A number of actors in these networks include the following: “international and domestic NGOs, research and advocacy organizations; local social movements; foundations; the media; churches, trade unions, consumer organizations, intellectuals; parts of regional and international inter-governmental organizations; parts of the executive and/or parliamentary branches of governments” (Keck & Sikkink, 1999, pp. 91 – 92; numbering removed). An “electronic hive mind” (Hai-Jew, 2019) may be another construct that may be applied

to the understanding of mass movements and decision making, albeit more in virtual space; certainly, empirically, people can be sparked to mass actions by messaging alone.

An informal summary of the mainline types of transnational advocacy issues include the following categories:

- human rights [“the right to life and liberty, freedom from slavery and torture, freedom of opinion and expression, the right to work and education” (“Human Rights,” 2019)] as a root inspiration, impacting development, basic health, human well-being, security, human dignity, anti-hate, and other aspects;
- pro-democratic institutions;
- free market trade;
- environmental protections;
- animal rights;
- economic development;
- conservatism related to biological and genetic modifications of food...and related research;
- anti-warfare;
- the rule of law and effective governance, and others.

For many issues, there are advocates taking countervailing positions. Human privacy, human rights, and personal and social freedoms are essentially encapsulated in the first bullet under “human rights.” The concept is that these apply across national borders and so are the subjects of transnational advocacy. A visual sense of this may be seen in Figures 1 and 2. The first is an article-article network on “human rights,” and the latter is of “privacy,” both as one-degree networks on the crowd-sourced English version of Wikipedia, a global resource. The links are outlinks to other articles from the focal article node.



This network graph shows outlinks to various articles within Wikipedia from the "Human_rights" article page (1 deg.).

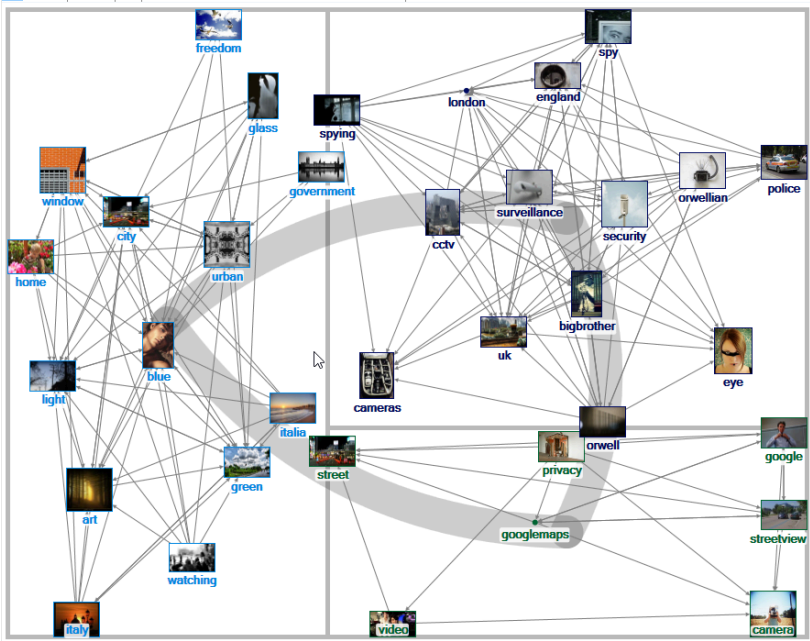
Figure 1: “Human Rights” Article-Article Network on Wikipedia (1 deg.)



This 1-degree network graph shows outlinks in Wikipedia from the “Privacy” article page.

Figure 2: “Privacy” Article-Article Network on Wikipedia (1 deg.)

It is possible to explore “privacy” in related tags networks from a social image sharing site. Here, there are “folk” tags that are posted with image contents that are also tagged “privacy.” Some early insights: in terms of shared user-generated social imagery, “privacy” is expressed as something lived (“freedom,” “city,” “window,” “urban”) in Group 1, as threatened (“spy,” “orwellian,” “surveillance,” “security,” “police”) in Group 2, and as big data-related (“google,” “streetview,” “googleimages,” “camera”) in Group 3 in Figure 3. “Privacy” is visceral and directly lived...and affected by government and private industry.



This network graph shows three groups in the “Privacy” related tags network on the Flickr social image sharing site. The tags are related labels used when labeling user-shared social images that are also tagged with “privacy.”

Figure 3: “Privacy” Related Tags Network on Flickr (1.5 deg)

Google Correlate, soon to be retired, shows that in terms of correlated search terms, “human rights” is conceptualized differently in the U.S. vs. China, for example. (Table 2) The respective focuses are different, in descending order.

“Human Rights” in the U.S.	“Human Rights” in the P.R.C.
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Correlation	Search Term	Correlation	Search Term
0.967	statistics	0.9144	rights
0.9653	education in	0.8676	writing
0.9611	ethnic	0.8568	summary
0.9607	drug abuse	0.8546	experiment
0.9606	animal rights	0.8517	gender
0.9597	educational system	0.8515	definition of
0.9591	overview	0.8511	graphs
0.9582	international trade	0.8477	human
0.9577	comparison of	0.8474	theorem
0.9571	economics of	0.8459	printable
0.957	diseases	0.8458	schools
0.9569	composers	0.8449	grade
0.9569	historical	0.8448	spatial
0.9568	report on	0.8445	definition
0.956	ecotourism	0.8434	science
0.9559	trade organization	0.8433	political
0.9558	statistical	0.8427	differences
0.9558	opinions on	0.8426	math
0.9558	government of	0.8425	problems
0.9556	agriculture	0.8423	biology
0.9553	poetry	0.8421	activities
		0.842	affect
		0.8415	formula
		0.841	society

0.9548	history of
0.9548	illegal drug
0.9547	japanese cul- ture
0.9546	world trade organization
0.9537	soils
0.9536	history
0.9533	prevention of
0.9532	history of american
0.9528	capita income
0.9527	per capita income
0.9527	disorders
0.9526	drosophila
0.9525	wetland
0.9518	illegal drugs
0.9516	research on
0.9514	research
0.9514	scattering
0.9513	self-esteem
0.9513	critiques
0.9513	personal sto- ries
0.9512	natural resources
0.9511	evaluation of
0.8409	methods
0.8406	education
0.8404	middle
0.8404	vocabulary
0.8396	structure
0.8391	of the
0.8389	examples
0.8389	dna
0.8387	analysis
0.8384	diagram
0.8384	timeline
0.8381	exercises
0.8374	patterns
0.8374	war
0.837	teach
0.8369	facts
0.8366	percentage of
0.8364	conference
0.8362	articles
0.8362	how does
0.8362	mechanism
0.8359	speaking
0.8358	communication
0.8357	words
0.8356	how did

0.9508	overview of	0.8355	hydrogen
0.9507	popular music	0.8355	drawing
0.9504	profile of	0.8354	economy
0.9503	the u.s.	0.8353	movement
0.9503	trends in	0.8352	schools in
0.9502	case studies	0.8352	ancient
0.9502	music his- tory	0.8352	population
0.9501	modulation	0.8352	kids
0.9499	reproduction	0.8352	children
0.9498	twentieth century	0.835	effect
0.9495	indicators	0.8349	complex
0.9494	architecture of	0.8349	physical
0.9492	gale group	0.8347	effects
0.9492	research of	0.8344	reaction
0.9489	statistical data	0.8342	economics
0.9488	foreign trade	0.8342	citation
0.9487	forests	0.8341	physics
0.9487	ovid	0.8337	reconstruction
0.9485	deafness	0.8336	laws
0.9482	bibliographic	0.8335	demand
0.948	alcoholism	0.8335	brain
0.948	in the u.s.	0.8332	of a
		0.8332	study
		0.8327	equation
		0.8327	knowledge

0.9479	history of music
0.9478	architecture
0.9477	education statistics
0.9474	twentieth
0.9472	and math
0.9472	school edu- cation
0.9471	wto
0.9471	economic history
0.9467	history of the
0.9463	evaluation
0.9462	eating disor- ders
0.9462	genome
0.946	conservation
0.946	oscillator
0.9459	geology
0.9458	in united states
0.9456	free essay
0.9456	psychology of
0.9455	critique
0.9454	foreign
0.9453	music educa- tion
0.8327	efficient
0.8327	famous
0.8326	literature
0.8325	simulation
0.832	research
0.8319	theory
0.8315	did
0.8313	cell
0.8313	lead
0.8312	language
0.8312	geometry
0.8312	and the
0.831	what is a
0.8309	environmental
0.8309	density
0.8308	plant

0.9453	free sounds
0.9452	treatment of
0.9449	system
0.9449	multicultural

Table 2: Google Search Terms Time-Correlated with “Human Rights” as a Search Term in the U.S. vs. China (from Google Correlate)

Interestingly, various human rights frameworks describe “communication rights” as a fundamental right as well. From the advent of the Web, there have been calls for governments to emplace proper laws for the digital age to “ensure markets remain competitive, innovative and open...” and that to “protect people’s rights and freedoms online” (Berners-Lee, 2019, as cited in Kerr, Musiani, & Pohle, 2019, p. 1). These conversations of digital rights are important given the ubiquity of digital in people’s lives (Goggin, Ford, Martin, Webb, Vromen, & Weatherall, 2019). Internet governance to enable human rights involves the following issues (in descending order): “security, access, Internet critical resources, domain name system, privacy, freedom of expression, human rights, multi-stakeholderism (sic), openness, open standards, diversity, intellectual property rights, infrastructure, Internet Governance Forum, IP addresses, multilingualism, public policy, developing countries, content regulation, deliberation, global governance, and others (Padovani, Musiani, & Pavan, 2010, p. 371), to ensure basic functioning and access. One author writes: “If AI developers treat privacy not as an ethical preference but as a fundamental human right, it would strengthen the privacy considerations that already exist in industry norms and technical standards” (Latonero, 2018, p. 13), which does suggest

some of the extant guardrails in the information technology space that may guide the onboarding of new technologies. The building in of privacy enablements into technology systems have been defined as including “notice, choice and consent, proximity and locality, anonymity and pseudonymity, security, and access and recourse” (Langheinrich, Sept. 2001, p. 273).

How the technologies are used also have widespread and long-term implications on their usage. In a study across 36 countries, the Internet has had mixed results on “political trust” or citizen confidence in political institutions and their legitimacy. In the face of Internet censorship, political trust is strengthened, but in terms of “violation of user rights,” political trust is weakened (Lu, Qi, & Yu, 2019, p. 1). Given the prevalence of online incivility, online civility (politeness) is sufficiently novel to induce social trust, according to one experimental research study using a social networking platform (Antoci, Bonelli, Paglieri, Reggiani, & Sabatini, 2019, p. 83). Women and younger users have higher levels of expectations for trust online (Warner-Söderholm, Bertsch, Sawe, Lee, Wolfe, Meyer, Engel, & Fatilua, 2018, p. 303), which may have implications for their usage of online spaces. Breakages in trust may turn groups off to participate online. Already, there are drops in the numbers of users on social media, attributed to fatigue. Some “root causes of social media fatigue” include the “stressors of privacy invasion and invasion of life” with personality traits as mediators of this perception (Xiao & Mou, 2019, p. 297). One turnoff is “presenteeism,” defined as “the degree to which social media enables users to be reachable” (Ayyagari, et al., 2011, as cited in Xiao & Mou, 2019, p. 301).

Another study found that citizens perceived an increased sense of control over national government corruption (“misuse of public power for private gain”) with the presence of social media, based on analysis of five years of data from 62 countries (Tang, Chen, Zhou, Warkentin, & Gillenson, 2019, p. 2).

These information and communications technology (ICT) chan-

nels have been used for mass disinformation campaigns, in a highly dynamic geopolitical space (Fried & Polyakova, 2018). Others have observed malicious actors have used the Internet to weaponize civil societies to “foment dissent and create breaches along ethnic, racial, religious, and socioeconomic lines” to “intensify hyperpartisanship” (Jayamaha & Matissek, 2019, p. 11), with the 2016 U.S. presidential election cited as one case in point. In the aftermath of the campaign election meddling (including hacking attempts), various social media platforms were critiqued and there were increasing calls for “platform governance” (Gorwa, 2019, p. 854). In an age of “modern transnational terrorism,” state security is pitted against “freedom of press and speech,” with various social media companies liable for “federal criminal prosecution...” for providing “material support to terrorism” by enabling “terrorists and their sympathizers to glorify and pursue their violence on social media” (VanLandingham, 2017, p. 1).

There are spillovers from the cyber into real space and vice versa, known as the cyber-physical confluence. One concern is about the usage of advanced technologies for autonomous warfare (Jensen, Whyte, & Cuomo, 2019), with the harnessing of artificial intelligence and machine learning and automation to create weapons systems that destroy humans, without other humans in the decision making loop. Warfighters have long used social media as part of their information operations (Marcellino, Smith, Paul, & Skrabala, 2017, p. iii), defined as “the integrated employment, during military operations, of IRCs (information-related capabilities) in concert with other lines of operation to influence, disrupt, corrupt, or usurp the decision making of adversaries and potential adversaries while protecting our own” [Joint Publication (JP) 3-13, 2014], as cited in Marcellino, Smith, Paul, & Skrabala, 2017, pp. ix – x].

Citizen Privacy, Human Rights, and Individual and

Social Protections vs. Socio-technical Incursions

The focal research questions are the following:

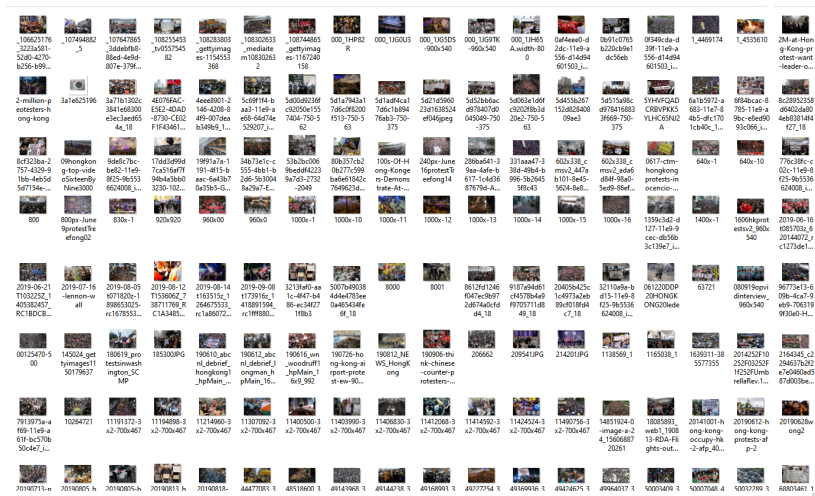
How potent are the temporary pixels and ephemeral voices online in support of transnational advocacy generally and this issue of human (privacy, human rights, individual and social protections) well-being against socio-technical incursions in particular? Why?

The “case” around which this issue is explored is the pursuit of citizen privacy, human rights, and individual and social protections against socio-technical incursions, given the technological advances in the past few decades. The basic interests are to make personal information private from government and industries, in order to preserve people’s personal choice-making and degrees of freedom. This case is represented through mass media coverage along with reams of social imagery and some user-generated videos.

Social imagery. At this moment, the contemporaneous case involves street clashes of Hong Kong citizens and police, with the discontent sparked by the proposal of an extradition policy to have court cases heard on mainland China for some cases originating in Hong Kong. Essentially, many of the citizens of the former British colony (which reverted to Chinese control in 1997) disliked the sense that they were losing many of their prior rights, which they felt were enshrined in an agreement for the handover. The specifics of this issue are not the main focus here. Rather, the demonstrations are contemporaneous, and the issue of socio-technical surveillance is a factor, with many of the demonstrators wearing not only masks for tear gas but also face masks to hide identities. (This case is being used in a generic and semi-abstracted way to look at transnational advocacy. In this sense, the local issues are somewhat less important than that at the larger level—of government reach, of socio-technical surveillance, of the uses of social media and encrypted apps for social

organizing, of strategic and tactical social media messaging, and the clash of interests. This is not to take anything away from the seriousness of this issue or the futures of 1.4 billion people and their future generations at stake.)

This event was analyzed based on 1,344 images scraped from Google Images highlighting the multi-month events. The images show people of all generations in the marches, which have brought out a fifth of the city's population, according to press reports. Residents of a city in transition are warning off their national government against using too heavy a hand on themselves. On one side are demonstrators with Molotov cocktails, masks, messaging, signage, and barricades; on the other side is tear gas, water cannons, police batons, shields, and messaging. There are signs about sovereignty and freedom and resistance to a proposed change to the territory's laws to enable extradition of those arrested to be tried elsewhere. Some signs protest Communism, the ostensible ruling framework for the mainland. There are protests against a demonstrator blinded during a police action. On social media, there are overhead and on-street images of protesters, carrying flags of the U.S. and Britain (to try to encourage their engagement), and lists of demands. There are counter-demonstrators waving flags of the national government. Will a closer integration spark demands on the mainland for more freedom? Will these actions spark a more forceful mainland government presence? (Figure 4) This issue does not have even a temporary resolution at the moment of this chapter's submittal.



This screenshot shows thumbnails of social imagery in a social imageset from Google Images of the Hong Kong demonstrators. These show a challenge-response dynamic.

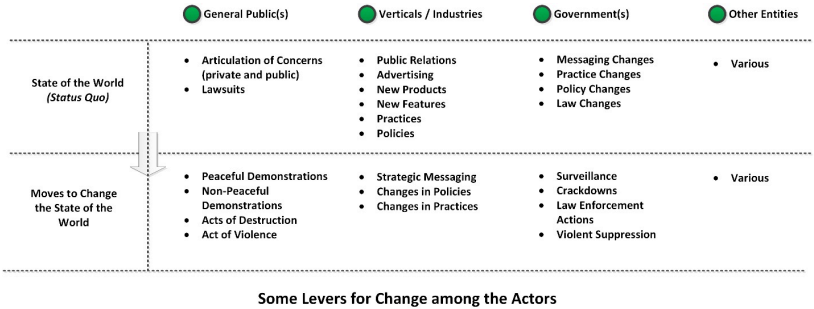
Figure 4: Social Imagery of a Contemporaneous Challenge-Response (in Hong Kong demonstrations)

Gamed out. If this issue were gamed out, in a partially explicated game tree, from the point-of-view of the transnational advocates, what would it look like? A game is an expression of strategy and tactics, and it is informed by the respective natures of the game actors, their interests, their levers for making change, and other factors.

A game is specified by the choices or moves available to the players, the order, if any, in which they make those moves, and the payoffs that result from all logically possible combinations of all the players' choices. (Dixit, Skeath, & Reiley, 2009, 2004, 1999, p. 362)

In game theory, a core idea is that actors in a space choose actions with the maximum expected utility or the highest expected gain (Morrow, 1994, p. 23), with the least cost (efficiency assumption). Each actor—whether an individual or a collective—has different

preferences for various actions and payoffs, and with an attendant range of risk acceptance to risk aversion preferences (Morrow, 1994, p. 37). In Figure 5, the main stakeholders at a macro-level sense are introduced along with some observations of their points of leverage or power.



This diagram proposes a way to conceptualize how various social actors may make changes to the world.

Figure 5: Some Levers for Change among the Actors

A “Nash equilibrium” is a state where no player “has an incentive to deviate unilaterally from its equilibrium strategy” (Morrow, 1994, p. 81). In that state, stated another way, the actor or player has the “utils” or utility fulfilled. These are necessary over-simplifications in these general sketched equilibriums.

For the “general public(s),” they are assumed to be willing to exchange private information for free services based on how many use various social media and Web 2.0 tools. They are willing for government to have their private information as long as it is not misused or leaked. They are willing to give government the benefit of the doubt, especially if they are not aware of what the technological and government capabilities are. Protests involve disagreement with others in public and are effortful and risky.

For the “verticals / industries,” they are going to push the edges of engineering and technological features in order to win market share. However, they also try to work within legal frameworks, so they are not at risk of losing lawsuits and paying out large sums. They are also interested in maintaining good public relations to avoid bad PR and resultant losses in the marketplace. Technological advances are not necessarily deterministic, but they do introduce a forcing function into the environment and require all entities to adjust to them (or to challenge them).

“Government(s)” have an interest in acquiring the highest technological and other capabilities to achieve their responsibilities but in a way constrained by laws and policies. The law enforcement part of government has a legal “monopoly on violence,” and it is in their interests to keep this. Also, there is inherent interest in maintaining government credibility, for their assertions and their actions. There is defense of their purview and active contravening of others’ attempts to co-opt their power. And, they have an interest in maintaining the social contract enabling governance, by provisioning the population writ large, to enable safety, security, social order, the meeting of basic human needs (food, education, housing, healthcare, and so on). In general, governments as human systems bound by rules prefer the *status quo* and are “conservative” and do not relish challenges to the rules.

Other “entities” have a mix of affordances and constraints, but they generally advocate for their own positions, within financial constraints, legal constraints, leadership limits, membership limits, and other factors.

Each of the stakeholder groups has a sense of an idealized future, and each is generally arguing for what they see as good. (There are malicious actors, too, but in this case, the game assumptions are that each group is benevolent. In the real, there are spoilers who may only have an interest in wrecking others’ systems...but that beyond the scope of this work.) Each entity is jealous and possessive of its own prerogatives, and none will give ground

willingly if concessions mean backing off. Basic strategies suggest the following: pursuing goals with the least cost (for efficiency), not contravening values, not forming alliances with untrusted others, not locking in losses (if unavoidable), and so on. Message strategically, in alignment with one's aims, but be factful where possible. Avoid over-sharing and possibly releasing sensitive information. By actions, it is important to not give up something valuable for something cheap (but pursuing the opposite if possible), not trade away the permanent or long-term for something temporal or short-term, not contradict one's own values in actions, and so on. A "dominant" strategy is one that stands to deliver effectively, given the context and the other actors; a "dominated" strategy is one that is already a loss, one that stands to result in concessions and backing off of objectives. With sufficient data and observation of extant patterns, some level of predictivity and probabilistic understandings may be brought to bear to understand which strategies are most effective in which contexts, and enabling analyses based on conditional probabilities (like Bayesian analytical approaches, informed by beliefs and "priors").

Each of the stakeholder groups orientate to each other. Each are at least partially aware of each other. They are assumed to have some overlapping interests and some conflictual interests, so the game is not purely a cooperative or non-cooperative one. A basic partially explicated game tree begins with a temporal equilibrium of *status quo*. In this case, a sequential bargaining game is assumed. In general, bargaining games launch in the presence of "surplus" or some "excess value" that is available for the bargaining context (Dixit, Skeath, & Reiley, 2009, 2004, 1999, pp. 692 – 693). For the transnational advocacy for privacy, there was a "window of opportunity the NSA scandal offered" (Haunss, 2015, p. 227), in reference to Edward Snowden's apparent actions releasing secret data from the U.S. National Security Agency. One author asks if this scandal is "the Privacy Chernobyl that has the potential to mobilize mass protests and to galvanize the vari-

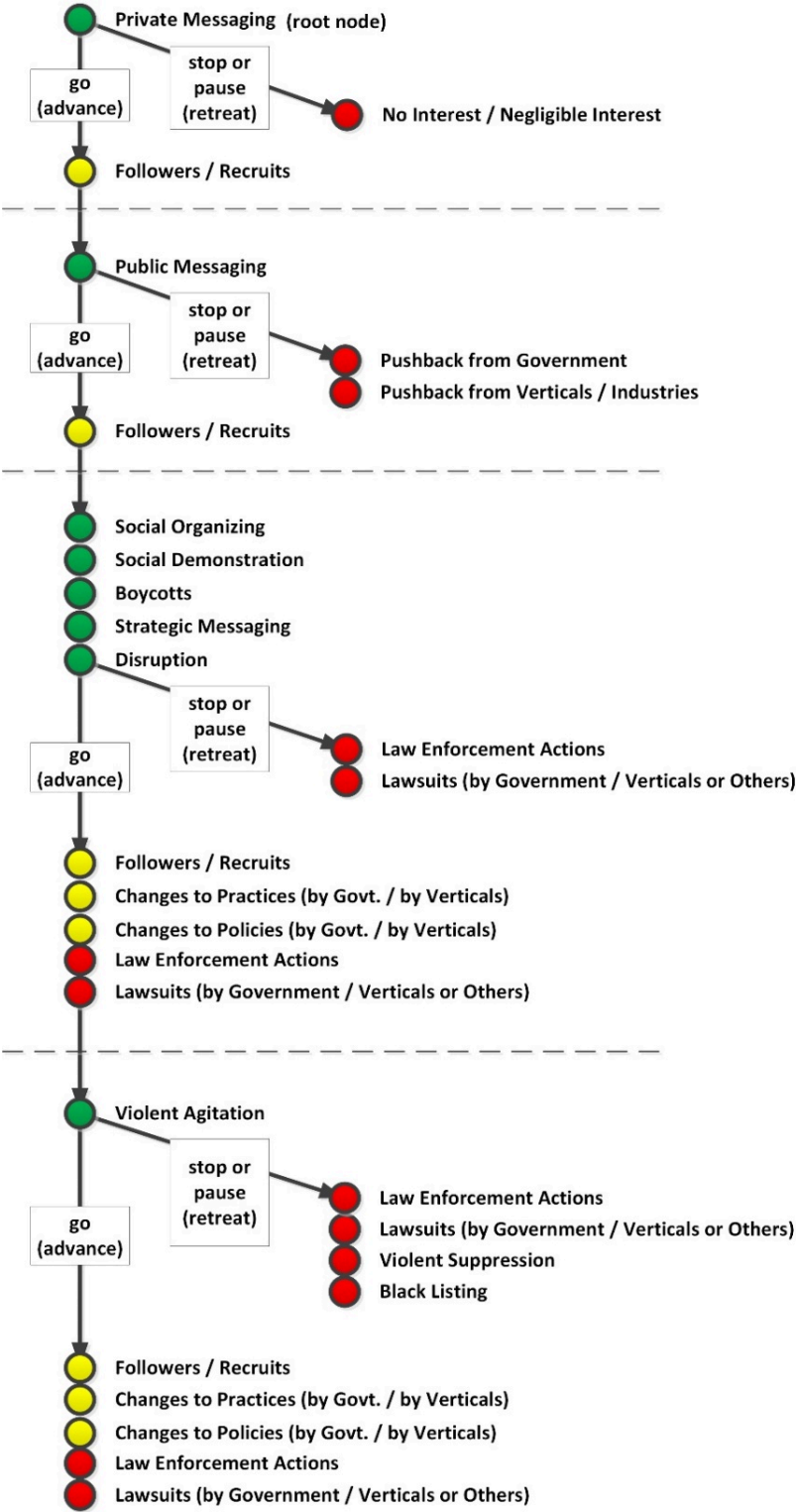
ous privacy advocacy groups into one privacy social movement?” (Haunss, 2015, p. 228) In a sense, some are looking to this historical event to jumpstart a global scale narrative of people’s personal information and how much access anyone would have to it.

Not taking action is always an option, but there are risks to silence and waiting because that moment will pass, and it may not arrive again (and certainly not with the same contextual conditions). The liminality of change can be high-risk because of the bargaining behaviors and also because of where the negotiations end and the fallouts in the systems.

The game tree is explicated visually and narratively but not in a mathematical representation of possible payoffs. A basic assumption is that each of the stakeholder groups has its own interests, but each are willing to create alliances based on points of common interest. It is assumed that changes are made to the status quo all the time but each of the entities, and game changers (from government policy, from new technologies, from changes in public desires, from new leadership, and so on) can arise anytime. A “subgame perfect” game is one in which a desirable end is defined and then the optimized steps are selected at each juncture.

The root node of the game tree begins with private messaging among the nascent transnational advocacy group of individuals with shared values and interests. They either go to public messaging once they have sufficient interest and confidence to advance, or they remain in their private groups and pause or retreat. For those who go public, they attract some supporters and some detractors in that step. Based on feedback, they may choose to advance or pause or retreat. And so on. They may escalate to social organizing and mass actions; they may engage in violent agitation. In all the steps, there are other actors in the space who have their own interests and wills (collectively). (Figure 6) [Different game trees may be drawn for the other stakeholders. A fully explicated game tree would bring in the hands

of the respective stakeholders and their actions at each step and define respective payoffs and losses, given the conjointness of game trees.]



This diagram suggests escalations of the general public to advocate for change.

Figure 6: Scenarios of General Publics' Social Agitation on a Semi-Recursive Escalatory Ladder

For some, a pause may be expensive. For example, if demonstrators have attracted a large number of citizens to participate, that is not a grouping they can necessarily easily coalesce again. A pause may mean a loss of momentum and public interest; it may signal weakness. For government, they can play a waiting game because most such large-scale demonstrations devolve into disorder, as people have to return to their daily lives.

The claim of "leaderlessness" among the demonstrator-citizens works against their interests because who is to say that new claims will not suddenly arise after initial sets of demands have been settled? Who is to say that the movement will not become fractious and spin off into other bodies with other interests (as has been observed in other movements)? Who is to say that there are not "hidden hands" using the demonstrators as "cutouts" for others' (nation-state's) interests? If there is no authority, then who is responsible? If it is no one, then government is only shadowboxing with a faceless entity that cannot be held to account. Even if the ideas were valid and could benefit the larger context, how it has arisen in a confrontational, angry, broadly public, and fractious way...may make the ideas sufficiently toxic to use. There are redlines that governments cannot cross, and such contexts may make such redlines less likely to be contravened.

If this challenge were modeled as a classic Prisoner's Dilemma, with Player 1 as the demonstrator-citizens, and Player 2 as the government, the 2x2 payoff matrix could look like the following. (Table 3) If the demonstrator-citizens cooperate, and the government cooperates, there may be a temporary middle ground found, and the larger issues may be rectified or addressed in the

future (ideally). The score is (5,5) in this first scenario. If the government defects (resists, does not cooperate with the demonstrator-citizens), and the demonstrator-citizens cooperate, then the demonstrator-citizens lose, and their time spent demonstrating is a sunk cost; the score is (0,8). If the demonstrator-citizens defect, and the government cooperates, then the demonstrator-citizens win their demands, and the government is seen as losing credibility and power; the score is (8,0). If both the demonstrator-citizens defect, then there is a stalemate, and the score is (0,0). Some may ask: Who is keeping score? Well, everyone...because the past informs the future; it sets precedents. If “shared governance” is accepted, then a government loses authority and power, and coercive outcries on the street are validated as a form of governance. Who “blinks first” matters because weaknesses invite more challenge. Giving ground under duress or public pressure reads like a loss and is often treated that way. Whoever is seen to inhabit the moral high ground can make a case to the general public and the watching world...how defensible their position is. Social tolerance for disorder is limited, and the clock is constantly running on the issue.

	Player 2: Government		
Player 1: Demonstrator-Citizens		cooperate	defect
	cooperate	(5,5)	(0,8)
	defect	(8,0)	(0,0)

Table 3: A Prisoner’s Dilemma Payoff Matrix for the Demonstrator-Citizens vs. Government Issue

Bargaining decisions are not necessarily so cleanly spelled out. Perhaps one of the strategies is a game of chicken, to see if the other side can be made to capitulate under pressure. Perhaps a strategy for the demonstrator-citizens is to force the government to show its “iron fist” and how it does not have the citizens’ interests at heart, even at the cost of receiving violence and potential fatalities among their ranks. Perhaps a strategy for the government is to force the hand of the demonstrator-citizens by pushing them to resort to property destruction, hooliganism, and violence, to delegitimize them: Are these the people that you want to have changing up laws of the land and in this manner? Such pressure tactics are to force the other side’s “real face,” whatever that may be. These respective narratives play to a broad audience. Each side is engaging in social performance in that collective moment. An empath’s view of the context, at macro level, may enable the teasing out of interests and strategic messaging and bargaining positions and may benefit petitions for change and challenges to power.

In the real world, human restiveness is a constant and a given. Human roles shift and change, and people’s identities may exist across the board of various stakeholders to an issue. Chance factors are constantly at play. Predictivity even on small things can be difficult. Here, events do not unfold in a step-by-step way. Multiple actions may be ongoing. Random chance affects anywhere in the game tree (Dixit, Skeath, & Reiley, 2009, 2004, 1999, p. 49); chance factors present surprises to all players. Some actions are permanent and irretrievable; others are temporary, with possible “takebacks.” The first are signs of “costly signaling,” and the latter are forms of “cheap talk” (aka “babbling”) which may help define the environment around which negotiations are occurring but are also not fully credible (because of the cheapness of the talk). Additional leverage may be harnessed by the general public by disrupting the lives of others in the society or showing up the government as not being in control. There are risks of over-reach, of demonstrators to violence, or govern-

ments to excessive violence and other ignominy. In terms of the call-and-response dynamic, certainly, the government and other entities may choose to respond minimally or even with occasional silence, based on their strategic aims. Too much call-and-response, the responding entities are giving power over to those putting out calls (the demonstrators). Concessionary moves may end a protest, or they may encourage heightened demands (while the going is good). Each side is walking a high wire act.

Discussion

The basic focal research questions were the following:

How potent are the temporary pixels and ephemeral voices online in support of transnational advocacy generally and this issue of human (privacy, human rights, individual and social protections) well-being against socio-technical incursions in particular? Why?.

The power of pixels and ephemeral voices depends on the context, the stakeholders, what is asked of the stakeholders, and other factors. Alone, pixels and electronic voices are not particularly inherently potent. As for human privacy, per the research, there has been some headway in government policies, government-instigated lawsuits, commercial practices, and others efforts. However, there have also been advances in the capabilities of government to conduct necessary surveillance, in engineering advancements enabling further incursions into people's lives, and so on. It is difficult to provide an accurate "on balance" analysis because the space is so dynamic. Also, with known unknowns, it is difficult to quantify the respective risks of malign and intrusive government social controls. Some researchers argue that social controls are not necessarily "malignant and anti-democratic" but can be benign and part of "a democratic endeavor" and part of human rights (Sarikakis, Korbziel, & Mantovaneli, 2018, p. 275). The co-authors argue that social actors

need to be responsible for social change, and the focus should be on human relations not on the “technological object”—whether machine or code, symbols or even bureaucracy” because what is actually at stake are “social relations” affected by “information generally, personal data and privacy more specifically” (Sarikakis, Korbiel, & Mantovaneli, 2018, p. 287). The new technologies may be harnessed by the marginalized and dispossessed to document “police violence...war crimes at scale...environmental pollution...” and so be a positive force for “grassroots documentation of abuses” to advance human rights (Gregory, 2019, p. 374). How the technologies are wielded are an important aspect of their value for human rights. An earlier work made the case about using online communications for “attracting support, coordinating action, and disseminating alternatives” for addressing “transnational action, leaderlessness, profusion of concerns, tactical schisms, and digital/language divides” (Clark & Themudo, 2006, p. 50) for “dotcauses” or Internet-based political networks “which mobilize support for social causes primarily (but not necessarily exclusively) through the Internet” (Clark & Themudo, 2006, p. 52). Civil societies may engage in various forms of “virtual mobilization” (Clark & Themudo, 2006, p. 52). Web 2.0 technologies, including “social networking sites, blogs, podcasts and wikis,” may be harnessed to “coordinate, synchronize and document campaigns” as a complement to more traditional means of social organization (Pillay, 2012, p. vi). Said another way: New “...digital media are helping people self-organize and coordinate massive protests in the absence of formal organizations” (González-Bailón, 2015, p. 512), potentially enabling efficiencies of organization, including reach and speed, for collective actions, and new forms of protest including cyber-attacks like DDOS attacks and hacking and increasing sophistication. Most of what occurs online is in clear text and readable by others. Certainly it is not unheard of for people to lose their jobs for social media postings (Parker, Marasi, James, & Wall, 2019), much less than for marching against their own government.

This is not to say that there has not been advancement on the privacy protection front. Private citizens have applied “inventive strategies ...to subvert, distort, block and avoid surveillance (Marx, 2003, as cited in Bennett, 2012, p. 412). There are government authorities working to ensure “privacy and data protection” (Bennett, 2012, p. 412). In Europe, consumers now have a “right to be forgotten.” Actions by the UN General Assembly in 2013 and 2014 codified “surveillance as a human rights problem” (Haunss, 2015, p. 230). The U.S. government has made changes to some of its collection of data of its own citizens, and some private data are held now by companies and not directly by the government. Citizens’ rights are protected against surveillance unless there is concern of possible crimes being committed, so while information is collected, it generally cannot be accessed without legal cover. “Social credits” may be advanced in one country currently, with people’s digital doppelgangers being examined for compliance, but in many other locales, governments profile citizenry based on their records. Governments all keep their secrets about what is knowable and by what methods and how their various tools are used, to enact the responsibilities of governance (including law enforcement, security, taxation, and other aspects). Those in government are also citizens, too, and with awareness, perhaps they can try to ensure that excessive power is not in the hands of government. (Ironically, this concept seems to have salience in the U.S. only and not among other polities. Also, even with such ideas, many people acquiesce to power, even against the dictates of professional ethics and morals.)

About naivete and transnational advocacy online. A naïve approach to transnational advocacy may be the assumption that hard problems are easily solvable or that if sufficient attention is on it that the problems will solve by publicizing the issue (public attention \neq change). In some cases, attention may reinforce efforts and strengthen endeavors; however, in other cases, the attention may dissipate that energy via catharsis and something of the “screen effect” (where expressing an idea feels like action

was taken when nothing really changed except for the messaging). This is a version of the reinforcement vs. catharsis argument in media studies; here, for some, messaging on social media reinforces convictions and may make actions more likely; for some, expression online results in a dissipation of the energy, and no actions are taken. Social ripples splash and then dissipate and are often forgotten, with some new outrage arising predictably. Awareness does not usually translate into actions. A social media posting is often just one voice in a wilderness of voices, including those of cyborgs (humans and robots within a social media account) and robots (scripts that create and disseminate messaging).

At core, to make change, there has to be awareness, sense of salience, care (vs. apathy), commitment, measurable actions, accountability, incentives, encouragement, and other aspects. Perhaps a confluence of factors have to occur to advance an issue; rarely is it one thing alone that is determinative or decisive. Changes may have to be institutionalized into the legal system, the political system, the social norms and culture, and they have to be taught to future generations. What may be of great concern to one generation may not carry over to the next. Some changes occur subtly and quietly, over time, and even below the level of collective awareness.

In general, people cannot be expected to act against their own perceived interests. In a context with competing interests, those with the most powerful voices and resources and power are expected to prevail. Another idea is that the current state-of-the-world is arrived at based on powerful socio-cultural and historical forces and present-day interests. People do not give up power easily or without rigorous defenses. Kurt Lewin proposed that change requires an unfreezing-change-freezing process to enable change in his three-step model in the 1940s, which may apply here. Societies do not change swiftly. One observer observed that "...every society has its own carrying capacity for

making change...” (Mattis & West, 2019, p. 222). Making change is effortful against inertial forces and interests. Change seems to happen in fits and starts, in the way that “punctuated equilibrium” has been described. The “klieg lights” of attention do not alone make change, but they may influence those with power to advance particular agendas or support particular positions. Some researchers offer a sense of transnational advocacy networks having various influences on power, as stages:

- (1) issue creation and attention/agenda setting;
- (2) influence on discursive positions of states and regional and international organizations;
- (3) influence on institutional procedures;
- (4) influence on policy change in ‘target actors’ which may be states, international or regional organizations, or private actors...;
- (5) influence on state behaviour. (Keck & Sikkink, 1999, p. 98)

The stages seem to be ascending and cumulative. There seems to be a necessary investment of longitudinal time.

In virtually every confrontation, there are informational asymmetries; each side lacks critical information in part because not everything is known or is available. Then, too, cognitive biases suggest that different individuals and groups focus on particular information and neglect others. User opinions tend to correlate with “the sentiment of the news post and the type of information source” (Kumar, Nagalla, Marwah, & Singh, 2018, p. 42), for example. What is “ground truth” may not be perceivable. Often-times, with the complexity of human systems, it is difficult to understand the particular historical moment. Serendipity and chance are always at play. At various times, the various interacting systems and dynamics focus on individuals, who may play critical roles in history, but these may not be clear until sometime

in the future, with individuals looking retroactively. Then, too, in the intensity of the moment, many may imagine themselves on the cusps of historical change, in a heady sense, when the moment is not ripe. Or the leadership is not sufficiently telegenic or charismatic. Or decisions drive a movement into missteps and erroneous choices. Or rumors may be insufficiently vetted, in a time of the post-truth era and #fakenews, and bad information misleads the leadership and membership. Even without so much environmental noise, people are susceptible to irrationalities and cognitive biases and errors in judgment, and misunderstandings of governance and technology are rife. Some advances in this space include “bots, voice assistants, automated (fake) news generation, content moderation and filtering” which affect digital communication (Gollatz, Beer, & Katzenbach, 2018 – 2019, p. 1).

Some “leaderless” movements may indeed be without leadership and without articulated direction. Perhaps the messaging itself may not be sufficiently coherent. Or the followers attracted to a particular movement do not take actions to actually advance the cause. Mass demonstrations may be noticed in real time by some (because such out-of-channel activism is sufficiently anomalous to be noticed) but forgotten in time, potentially as a piece of political theatre. Movements may be catalysts and spark awareness and interest, but unless the message gains traction among a larger receptive audience, change itself often takes much effort and inputs and resources. To make change that is persistent and real, there often have to be actual disciplined commitments and investments to create and maintain. In the world, there are historical examples of slow progress on very critical issues, like environmental change or diplomacy to resolve issues, with only very small-step incremental changes. Even if there is consensus that change is needed, most serious issues still require many decades to achieve. With so many actors at play simultaneously, various dynamics make a future, which is not particularly predictable.

Social Media and Effective Transnational Advocacy: Some Basics (A Sidebar)

Based on this work, some basic tenets seem initially supportable:

(1) About people...

Select social media platforms where the respective audiences of interest congregate. This will make it easier to find alignments with other groups and the pool information and other resources, to coordinate, and to make common cause. Communicate with the audience members in a way that your message will be heard. Conduct analysis of others' values, both public and private, in order not to contravene them.

Maintain supporter loyalty. Affirm followers online and regularly (but without being irritating), so there is not interest in "defecting" or spinning off into splinter groups.

Enable the messaging to be socially inclusive, in the way that franchises enable local adaptations. Movements like the protection of human privacy against socio-technical incursions instantiate differently in different locales based on local concerns. Some amount of "strategic ambiguity" without cultural or geographical dominance may enable an idea to spread further and to encourage higher levels of uptake. Not addressing potentially controversial issues may encourage a broader range of follower-ship because of the uninformed assumptions of the followers about the beliefs of the organizations and leadership. (Said another way: Stated opinions may provoke disagreement and alienation.) Let locals (wherever they are) fill in the blank.

In other cases, it may be important not to dissipate energy and impetuses too far. In these cases, geographical location and local particulars may have to carry the day. It is important to know what is energizing the crowds.

Strive for early wins and achievements. Participants tend to develop more investment in a movement that is seen to have achieved early wins. Focus on what is practically doable, and do not ask for the impossible. Enable win-win approaches to increase the likelihood of making change. Offer real advances to real problems, not just self-serving messaging. Offer value.

(2) About movement identity...and real reasons to make change...

Have a clear purpose and a platform and a strategy. Have clear leadership, even if they are working from the background in a "leaderless" movement. (Rule by crowds or the "mobs" does not have a

great historical reputation.) Message on social media platforms in a consistent way, with one voice, where possible. Contradictions will be observed and noted, given participant interest and the culture of online communities.

Use social media to be transparent, with credible messaging. Control who has access to the formal channels, to control against mis-messaging and spoofing and hijacking. Clean out faux data from channels. Avoid manipulations by outside forces who may want to free-ride the transnational advocacy movement. Avoid other-deception and self-deception as an organization and membership.

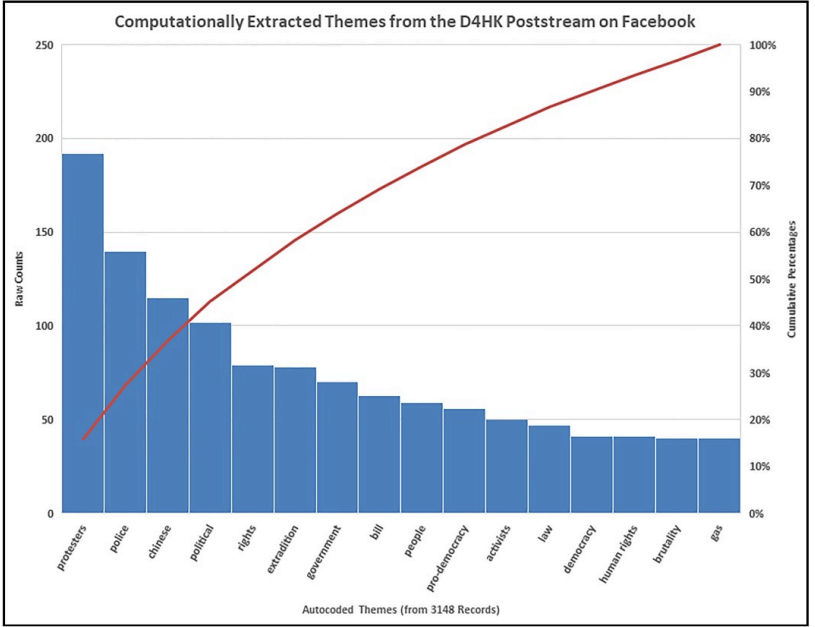
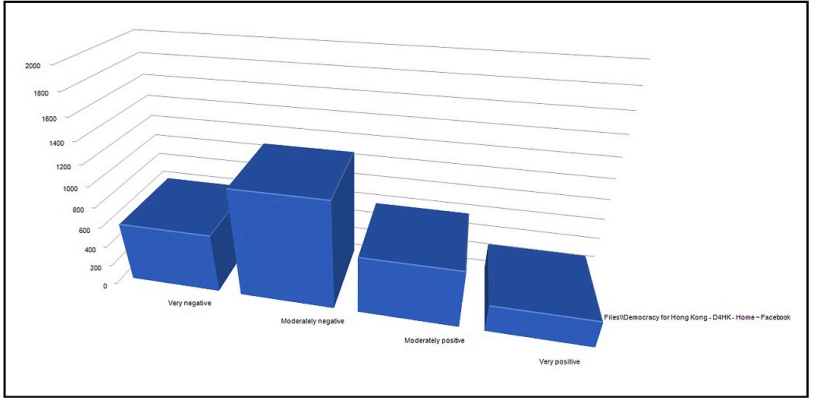
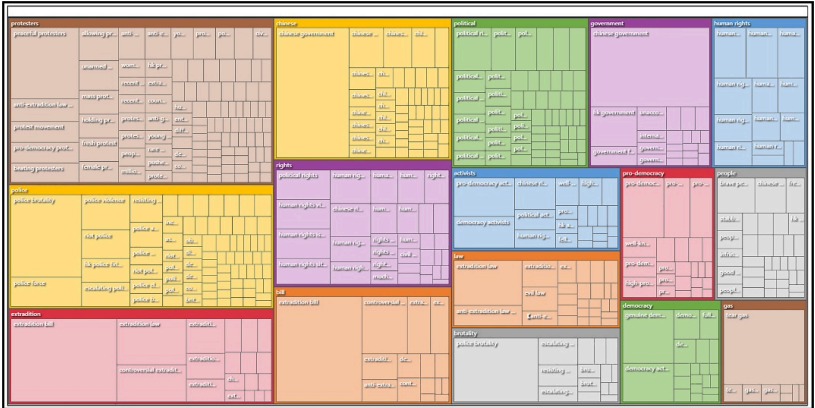
Align rhetoric and actions. To be effective, a movement benefits from maintaining aligned rhetoric and actions. This is not to lock the movement into stasis and nonchange, but it is to communicate a clear message at any time.

Use both the “public” and “private” channels available online. Use each strategically. Maintain a sense of vision and idealism in the work. Vet all information before it goes public. Do not break laws in sharing information. Do not contravene privacy. Do not foment violence. Use private channels when strategizing. Talk to decision makers. Do not assume that private channels are private from government, which have computational and other decryption capabilities. Every message has a range of audience members, some supportive, some not. Assume that cyber is one of the most surveilled “spaces” on Earth. Assume that both computational and manual means of surveillance are applied. Some light computational analyses are shown of the Democracy 4 Hong Kong (D4HK) at <https://www.facebook.com/DemocracyForHongKong/>. (Figure 7)

Be recognizable in the space. Have a clear name for mass media (like “umbrella movement” in this studied case). Have clear visuals that may serve as the logo. Have clear uniforms (“black shirts” in this studied case). Have a clear #hashtag or a few for the movement. Enable continuing conversations on microblogging platforms, for example.

(3) About the technologies...

Do not conflate “likes” and thumbs-up and kudos with...actual opinions, actual action, actual support, actual resources, or real change. Impressions are only impressions. A selfie is not an accurate or objective portrait, but it is a self-expression. A walk down a street in summer heat is not commitment to real change. Real change will require committed hard work over time. Social media enable a sense of ease-of-change, which is illusory.



Computational and Manual Monitoring of Social Media Messaging

This work offers some data visualizations related to computational analytics of social media messaging (text).

Figure 7: Computational and Manual Monitoring of Social Media Messaging

Future Research Directions

This work asks the question of how to learn from the world and understandings of various systems and humanity and to use electronic communications systems and other tools to foment transnational change. What are compelling “narratives of change” (Wittmayer, Backhaus, Avelino, Pel, Strasser, Kunze, & Zuijderwijk, 2019) that may spark followership and interest (and ultimately, social change at the societal level)? Are there compelling ways to share ideas for social change into the public sphere, where people engage discursively? And are there ways to defend ideas against squelching? What are effective ways to message and to argue for the ethics and outcomes of particular approaches? To communicate with clarity? To organize socially and care about the membership? To engage with other stakeholders constructively? What are optimal ways to leverage social media and Web 2.0 for transnational advocacy, for constructive and prosocial outcomes (and limited externalities)?

How would other versions of the simplified and parsimonious game tree be depicted, with fuller explication and quantified pay-offs? What are ways to make respective game trees more accurate to the world? How would this tree be updated to future contexts? How can it be distilled further?

Conclusion

The analysis is a simple (perhaps simplified) one: Will the interests of a nation-state disappear because a (technical) minority of citizenry is asking for that government to give up authority and appointed responsibility? Will government affirm the power of

the street when it has not done so in the past and ended prior mass demonstrations in blood? Will it dignify negotiations outside its own political and legal system and possibly encourage future disruptive taking-to-the-street for grievances and petitions? Will it do so outside its own social norms? If current decisions are always made in the “shadow of the future,” what does that portend for this particular context?

If this confrontation ends in constructive change, how so, and by whose point of view? Can a skilled leadership pull out a win-win from this without ceding power and increase trust in government and in citizenry? Can further violence, with its own dark dynamics, be avoided? Or will the limits of leadership and the dark pull of history resolve this in lost life years and potential?

On the one hand, these images evoke a sense of temporal power and hope; on the other, these messages on social media feel ephemeral and already receding into the past, like wind carrying away human voices, to the fast evaporating past, and not to a high stakes future.

What is the power of temporary pixels and ephemeral voices, drowned out by robots and cyborgs, manipulated by governments, filtered by algorithms? How much can be organized on social media with so many different audiences with so many different interests and values? Can these fleeting pixels and faraway voices instantiate permanent and long-term constructive change as soft power influences in a context of transnational advocacy? Essentially, can the voices convince decision makers to change their points of view and commit to hard actions over time into the flowing future, where past is prologue?

Afternote

The author was serving abroad as a professor at a university in

the People's Republic of China when the pro-democracy movement broke out across the nation on June 4, 1989. The demonstrations were put down violently in a military action known as the Tiananmen Square Massacre, with an estimated many thousands killed and the event documented by photographers and others. The official government word is that the event never happened. The author accidentally brought a copy of a book with images of the event on her return to a different university in the PRC a few years after, and the book was quietly burned, page by page, along with several other books (by sinologists in the West) deemed too politically sensitive to have on Chinese soil.

In a more recent work, one author writes of the event in retrospect (and with the wisdom of 20/20 hindsight):

During the predawn hours of June 4, 1989, on government orders, 200,000 troops surrounded Beijing, China's capital, and then marched to its heart. The government's tanks and armored vehicles cleared the way, crushing the barricades, firing into the crowd, mowing human beings down like weeds. Sanctioned at the very top, the massacre they committed in and around Tiananmen Square—against overwhelmingly nonviolent protesters from all walks of life—shocked the world...Thirty years later the regime that committed the massacre is still in power. (Yiwu, 2012, p. 7)

People live in and of history in every moment, and in and of statistical probabilities. Some generations may learn the lessons from old, and some leaders may learn the lessons from old. Or not. As individuals and as groups, people engage in forgetting, convenient and selective memory. Each new generation starts the clock again in making their own lives and contributing to those of others, and they may expand or contract the possible in different directions. Historical moments do seem to have some degree of repetition, some variations on a theme. Perhaps a

future that involves some constructive middle ways will be possible.

And then, just as this work was about to go to press, there was news of the discovery of the SARS-CoV-2 in Wuhan, Hubei Province, in the P.R.C. in December 2019. In the next few months, the infection spread around the world to all the continents except Antarctica. During this outbreak, a variety of surveillance technologies have been deployed: drones, CCTV, social media, mobile devices, AI, facial recognition technologies, and others. Special applications have been created especially for this moment, to achieve various aims, such as notifying people that they may have come into physical proximity with a person with known COVID-19, and others. This pandemic has enabled further incursions into people's private lives, in the P.R.C., at minimum. There are fears that such incursions will remain, long after the pandemic resolves (one way or another).

Dedication

This work is dedicated to my former students in the P.R.C. and the U.S., with great respect and affection and the highest hopes for their bright futures... We are all co-creating our collective futures simultaneously, with an abundance of awareness and knowledge. There is a balance here somewhere which enables the respective human needs to be met with the greatest individual latitude possible.

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Key Terms

Dataveillance: The “systematic monitoring of people or groups,

by means of personal data systems in order to regulate or govern their behavior” (Esposti, 2014, p. 209)

Game Theory: Expression of strategic analysis, usually with mathematical bases

Presenteeism: How accessible people are on social media

Privacy: The protection of personal information against unauthorized access and / or misuse

Transnational Advocacy: The support of a particular position or sense of the world for an issue extending across national boundaries

Transnational Advocacy Network: A group of interconnected actors with shared values working towards the achievement of shared policy outcomes

4

BLOWING WHISTLES ON TRANSNATIONAL SOCIAL MEDIA: FROM MICRO-TO-MASS SCALES, PRIVATELY AND PUBLICLY

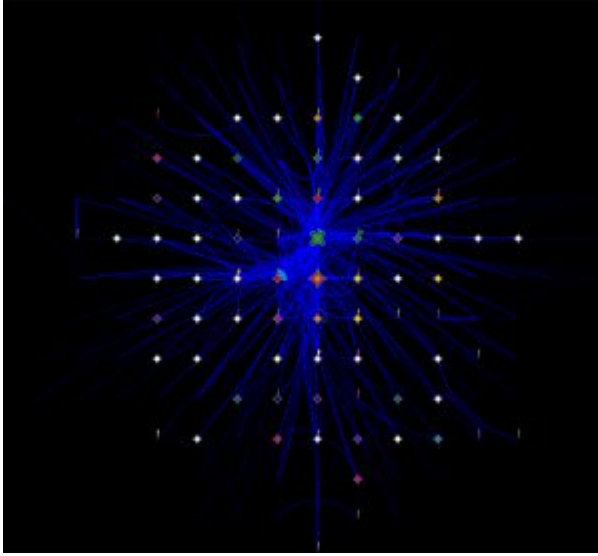
Shalin Hai-Jew

Abstract

Internal whistleblowing against perceived wrongdoing has long had a place in both public and private sectors; this activity is seen as enabling more effective business and governance by bring law-breaking, fraud, waste, theft, and other issues to administration attention. With the popularization of transnational social media, additional channels have opened that enable both private and public outreaches to external others. The low cost of entry and potential for wide reach may lead some to imagine that public attention is a net positive and will lead to its solution. However, such outreaches may have major downsides: intended and unintended audiences (attracting allies and detractors), the lack of hard power in public opinion and public pressure (in many cases), and “blowback.” This work explores some roles of social media in the whistleblower phenomenon and defines the “social whistleblower” phenomenon.

Key Words

Whistleblowing, Social Media, Social Whistleblowing, Online Whistleblowing, Global Whistleblowing, Transnational Whistleblowing



Introduction

“If it’s possible not to tell the truth, why tell the truth? The truth is a dangerous thing.”

— Amnon Shamosh in Matti Friedman’s *The Aleppo Codex* (2012, p. 201)

A “whistleblower,” by definition, is an insider, a former insider, or a witness (at varying levels of distance) to wrong-doing, who shares this information with an authority in order to lead to some positive change (and pursuit of justice). Those who witnessed acts of wrongdoing but remain silent are known as “inactive observers” (or “silent observers” or “non-reporter observers”).

Defining “wrongdoing” may be something written into policy in workplaces. In many contexts, it may not be defined, or the

actions are so egregious that there was not prior anticipation of such actions. What is seen as corrupt in the public sector is “diverse” and “difficult...to define” and may partially impact reportage actions (Gorta & Forell, 1995, p. 315). There are three general types of corruptions: legal, public interest, and public opinion (Gorta & Forell, 1995, p. 316).

The act of “whistleblowing” has been defined as “the disclosure by organizational members (former or current) of illegal, immoral, or illegitimate practices under the control of their employers, to persons or organizations that may be able to effect action” (Near & Miceli, 1985, p. 4, as cited in Gundlach, Douglas, & Martinko, Jan. 2003, p. 108). This act of “whistleblowing” has been compared with “fire alarms” (Beim, Hirsch, & Kastlelec, 2014, p. 904). Another reference suggests a tie with refereeing (Eby, 1994, pp. 56 – 84, as cited in Peternelj-Taylor, 2003, p. 528). Another definition of whistleblowing is the following:

the voluntary release of non-public information, as a moral protest, by a member or former member of an organization outside the normal channels of communication to an appropriate audience about illegal and/or immoral conduct in the organization or conduct in the organization that is opposed in some significant way to the public interest (Boatright, 2000, p. 109, as cited in (Chiu, 2003, p. 65)

This work provides some early research on the intersection between whistleblowing and social media. This work introduces the term “social whistleblowing” to address this interface. Here, “social whistleblowing” refers to the reporting of wrongdoing in various realms to protect the general public and enable change. Perhaps there is a sense that going public may offer some protection against harms. There is the idea that blowing whistles across boundaries, transnationally, may not only activate others of like mind elsewhere but provide some public pressure on the whistleblower’s own country and context from outside—and provide a

measure of safety. [In many cases, the sense of safety is illusory, and digital righteousness (0s and 1s) is thin cover and thin protections against government law enforcement actions—justified and unjustified, bolstered by various laws, politics, and monopolies on violence.]

Review of the Literature

Based on synthesized research, the act of “whistleblowing” is conceptualized as involving eight elements:

(1) the actor, i.e. a (former) member of the organization concerned; (2) the target, i.e. the organization or member(s) of its management which/who conduct unethical or immoral act(s); (3) the disclosure recipient, i.e. the person or organization to whom/which the whistle is blown; (4) the subject, i.e. the form and nature of the unethical or immoral conduct; (5) the information, i.e. a document that is generally evidence of some significant kind of misconduct or immoral practice; (6) the act, i.e. the information that is released outside normal channels of communication, which can be external or internal; (7) the motive, i.e. the release of such information must be undertaken as a voluntary moral protest; and (8) the outcome, i.e. as a result of releasing such information, the unethical or immoral conduct is stopped and the public interest is again protected (Boatright, 2000; Jubb, 1999, as cited in Chiu, 2003, p. 65).

In terms of the behavior, some researchers suggest that the “four stages of ethical decisions and behaviors” may apply: recognition (predicated on “ethical sensitivity”), attitude (“ethical judgment”), intention (“ethical intention”), and behavior (“ethical character”) (Chen & Lai, July 2014, p. 329). Said another way, an individual or group must identify wrongdoing, judge that action, form an intention to report, and then follow through on that intention with the reporting action. If the whistleblowing is about “per-

ceived *immorality*,” the whistleblowing act is conceptualized as comprising three parts: the “initial moral judgement” in a *prima facie* sense, the appropriateness of denouncing the action to “a higher authority,” and whether “the denunciation should be made internally to higher authority within the organisation itself; or if it should be made to an outside authority such as the state or any other watchdog such as a non-governmental organization (NGO) or even the press/mass media” (O’Sullivan & Ngau, Oct. 2014, pp. 402-403). In the reporting of wrongdoing in workplaces, the type of morality is “professional morality” (Bouville, 2007, p. 579).

Some foundational thinkers on whistleblowing suggest this involves “four parties” and is a social process: the wrongdoer(s), the whistleblower(s), the recipients of the complaint, and the organization (from which the whistleblowing emerged or about which the whistleblowing is) (Near & Miceli, Sept. 2008, p. 267). As such, power relationships are core. In social systems, political whistleblowing is often addressed politically, based on the extant power structures in the society and their various levers. Some researchers consider people as “motivated tacticians” (Flake & Taylor, 1991) in a social information context to inform whether or not they whistleblow and how (Gundlach, Douglas, & Martinko, Jan. 2003, p. 109); in particular, they couch this behavior in a social space redolent with “power, justice, and prosocial” perspectives (p. 108). The accused may engage in various types of management tactics, including excuses and justifications and apologies (as defensive) and intimidation (as offensive) (Gundlach, Douglas, & Martinko, Jan. 2003, p. 110). Whistleblowing may be seen as an exercise in power and “voice,” which may explain a sense that “older employees with greater tenure at a higher level are more likely to have the commitment and power to employ voice rather than exist mechanisms” (Mesmer-Magnus & Viswesvaran, 2005, p. 285).

The social sense may be seen in terms of persons with competing and cooperating roles and interests:

Whistleblowing poses ethical dilemmas for both the employee and the employer. For the employee, there are questions of motive, fairness, loyalty, cooperativeness, and moral obligation, among others (Elliston, 1982a; Elliston, 1982b; Jensen, 1987; Loeb and Cory, 1989). But whistleblowing is also a difficult ethical issue for employers. They must ensure that the rights of all employees are protected, including those who may be charged with wrongdoing by whistleblowers. They must ensure that the work environment does not degenerate into an atmosphere of mistrust. (Barnett, Cochran, & Taylor, Feb. 1993, p. 128)

The social aspect may also be seen in close-in studies of how people make decisions about whether or not to whistleblow in a social context, including whether “the wrongdoer is aware that the potential whistleblower has knowledge of the fraud” and “when others in addition to the wrongdoer are not aware of the fraud” (Robinson, Robertson, & Curtis, 2012, p. 213). What others know and think affect a person’s decision making.

Characteristics of issues may come with “moral intensity” and affect ethical decision making. This concept include six components: “social consensus” about the goodness or evilness of the act, “proximity” to the people affected by the act, “magnitude of consequences” or the harms or benefits from the act, “concentration of effect” or the magnitude of the effects on people, the “probability of effect” (the likelihood of a forthcoming follow-on event and its potential harm or benefit, and “temporal immediacy” (defined as “the length of time between the present and the onset of consequences of the act” (Jones, 1991, as cited in Bowes-Sperry & Powell, 1999, p. 780). The higher the moral intensity, the more salient the issue becomes and the more likely actions may be taken.

Another study found that while moral intensity was correlated with whistleblowing intention, “only the potential harm is positively correlated with such intention” (of the component factors making up “moral intensity”) (Chen & Lai, July 2014, p. 327).

For either condition of blowing whistles or staying silent, there are possible related “regret effects” that may be anticipated by individuals, based on affective forecasting. Based on “affect-as-information” models, people may use their feelings as if it was information for decision-making (Forgas, 2001; Schwarz & Clore, 1983, 1988, as cited in Fredin, 2011, p. 407). Some anticipated regrets may be anticipated “harm to others” or “retaliation to self,” for example (Fredin, 2011, p. 421). The moral intensity of the scenarios informed the framework of reference for the research respondents. If the focus was on low-intensity nonfinancial situations, the main focus went to the threat of retaliation to the self. In financial situations with high moral intensity, then the fear of “harm to others” was triggered along with the risks of inaction (Fredin, 2011, p. 422).

Such reportage is not costless. One study found that 90% of whistleblowers “lose their jobs or are demoted” (Chiu, 2003, pp. 65 – 66). Other whistleblowers were “blacklisted, treated as insane, and / or lost their life savings from lawsuits, their marriage or even lives” (Green & Latting, 2004, as cited in Zhang, Chiu, & Wei, 2009, p. 25). When reportage is about misconduct that is “systematic and significant,” retaliation tends to be “most certain and severe” (Rothschild & Miethe, 1999, as cited in Chiu, 2003, p. 66). In a later work, another team found that “blowing the whistle on serious transgressions or those that frequently occur in the organization, are more likely to be met with retaliation, than are infrequent or less severe wrongdoings...” (Mesmer-Magnus & Viswesvaran, 2005, p. 288). Going broadly public with whistleblower complaints can incur “considerable loss of company resources,” based on “negative company image, poor business relationships, and disrupted work routines (Laczniak &

Murphy, 1991; Miceli & Near, 1994; Vanderkerckhove, 2006, as cited in Zhang, Chiu, & Wei, 2009, p. 26).

While “wrongdoing” is negative by definition, reportage on it is “not an unqualified good” unless there is knowledge about how to follow on with other endeavors to improve the *status quo* and to right wrongs (Near & Miceli, July 1995, p. 679). How the work is done matters. Whistleblowing is not *a priori* “always morally right (a good act) or morally wrong (a bad act),” and this sense is especially sharp between various cultures (O’Sullivan & Ngau, Oct. 2014, p. 401).

Across the literature, the act of whistleblowing is often “high-risk low-personal-reward,” with a high percentage of whistleblowers experiencing blacklisting, defamation, reprisals and retribution, workplace demotions and termination, social hostility and ostracism, high legal costs, threats of violence, actual personal harm, and worse, including deaths. People do not challenge power or the *status quo* with impunity, in many (all?) parts of the world.

Whistleblowing, however, is seen as critical for organizations to be aware of wrongdoing in order to maintain high professional standards (such as rigor in healthcare systems, security in engineering, preservation of shareholder value in corporations, and others) and run with efficiency. Hierarchical organizations require information from their subordinate agents to help them provide oversight; in this context, “whistleblowing or fire alarms” enable the smoother transmission of information (Beim, Hirsch, & Kastellec, 2014, p. 904). Likewise, societies benefit from effective private and public sectors, with resulting policies to encourage responsible whistleblowing. Whistleblowers who anticipate a fair and just organizational process (“organizational whistleblowing procedures, outcomes, and related exchanges with superiors” and “procedural justice, distributive justice, and interactional justice”) may be more willing to engage (Seifert, Sweeney, Joireman, & Thornton, 2010, p. 707). In other

words, employees have to trust the social interactions, the processes and outcomes. The importance of perceived fairness has been echoed in an earlier work on whistleblowing (Singer, Mitchell, & Turner, 1998, p. 538).

Researchers vary on how prevalent misdeeds are in respective verticals. “Unethical behavior in research” is considered fairly prevalent (Mecca, et al., 2014, p. 159). In some contexts, business enterprises are seen as generally “honest and ethical” (Chiu, 2003, p. 65); in others, a global survey found widespread “corporate fraud,” with “one in three organizations, both worldwide and in the United States, had experienced fraud in the previous 24 months, prevalently in the form of asset misappropriation, cybercrime, corruption, and procurement and accounting fraud” (Butler, Serra, & Spagnolo, 2019, p. 1) and “organizational wrongdoing...wide spread throughout the whole business world” (Nayir & Herzig, 2012, p. 197). Another team writes: “Law-breaking activities within firms are widespread but difficult to uncover, making whistleblowing by employees desirable” (Butler, Serra, & Spagnolo, 2019, p. 1). It is thought that there is under-reporting of wrongdoing in the various contexts, particularly about “corruption, as a form of ‘victimless’ white-collar crime” (Gorta & Forell, 1995, p. 335).

Some researchers turn to common mass media journalistic accounts of “illegal, fraudulent, or unethical behavior” “almost on a daily basis” as an indicator of how commonplace such actions are (Keenan, Mar. 2002, p. 17). In the research realm, unethical behavior may be seen in rising retraction rates of published works (Mecca, et al., 2014, p. 160). Information technology projects may suffer failure based on non-reportage (Park & Keil, 2009, p. 901), so it is important for learners to train into “bad news reporting” instead of indulging in “organizational silence.” In education, there is a need to be aware of efforts towards maintaining educational standards (Vinten, 1999).

Research into faculty member viewpoints about whistleblowing

found some disturbing results. In a text analysis, some common themes were (in descending order): “get worse,” “none of your business,” “none of my business,” “repercussions,” “fiasco,” and others. There are some themes that may be perceived as more positive (in descending order), such as “go on,” “can’t ignore,” “handle it,” “legal,” “intervene,” “responsibility,” and “consequence.” (Mecca, et al., 2014, p. 167)

While it is the stated professional responsibility of many to report on wrongdoing, “non-reporting observation” (Cassemetis & Wortley, 2013, p. 615) is not unusual. There are Stanley Milgram’s (1973) observed “perils of obedience.” If various unethical behaviors are fairly widespread, there seems to be severe under-reporting. In various workplace and other social contexts, there are “norms against peer reporting” (King & Hermodson, 2009, p. 311). Others suggest that whistleblowing is becoming “increasingly prevalent” in terms of issues of organizational wrongdoing (Mesmer-Magnus & Viswesvaran, 2005, p. 277). An earlier work suggests that “consumerist attitudes” of employees will lead to more reporting of wrongdoing (Ewing, 1983, as cited in Near & Miceli, July 1995, p. 703).

Some ways to “police” professions involves training people to be ethically sensitive and full of character. There are individuals assigned to guard against employee misdeeds, in various offices. There are policies set up in organizations to incentivize responsible whistleblowing internally. Professional ethics, moral reasoning, and reportage of wrongdoing are built into some curricula, such as for auditing class in accounting (Liyanarachchi & Newdick, 2008).

There are external motivations as well, such as the offering of moneys by regulatory agencies to those who would report the wrongdoing they see. Some approaches include providing financial incentives to whistle-blow (beyond covering lost wages and benefits and lost jobs) (Callahan & Dworkin, 1992), raising questions of whether financial rewards may shift motivations from

intrinsic ones to extrinsic. Certainly, some whistleblowing investigations—such as for the Securities and Exchange Commission—may involve high levels of professional sophistication and even years of work to be effective; such endeavors can be highly expensive to the whistleblowing team (Melloy & Rooney, Aug. 15, 2019) and potentially quite risky.

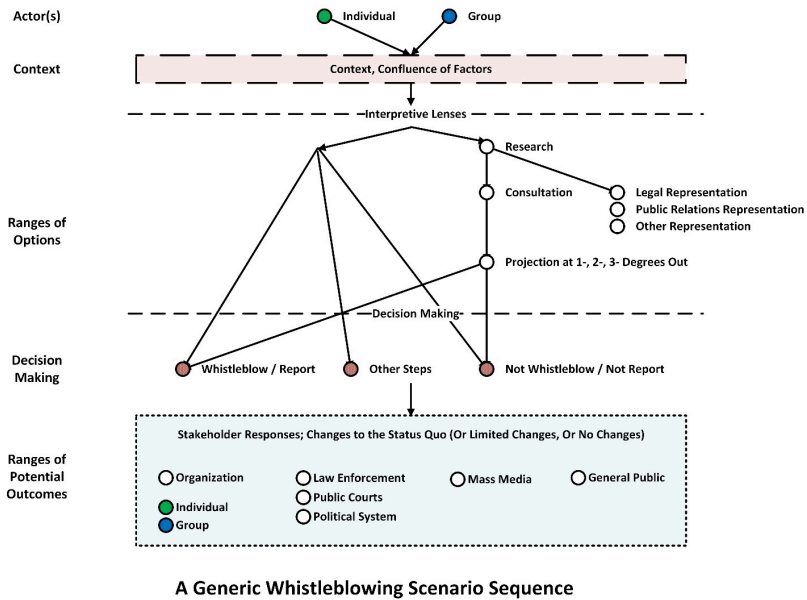
Creating organizational policies for whistleblowing that properly balances the various considerations requires setting financial rewards at a rate that does not turn “*heroes to greedy snitches*” (Butler, Serra, & Spagnolo, 2019, p. 2). The activation of people to blow whistles on wrongdoing enables a kind of “human sensor network” to better understand organizational (and societal) functioning and work towards prosocial outcomes. Here each person can provide a kind of surveillance (close observation) of the organization’s functioning in order to raise accountability. The prosocial argument suggests that whistleblowing “is not an act of pure altruism” but rather is “both selfish (egoistic) and unselfish (altruistic)” in terms of the actor (Dozier & Miceli, Oct. 1985, p. 823). Whistleblowing external to an organization can “have serious consequences both for the whistleblower and the company involved” (Barnett, Dec. 1992, p. 949). Another study found that those who “utilize an external reporting channel are more likely to be retaliated against” (Mesmer-Magnus & Viswesvaran, 2005, p. 288). There is mixed research on how much of a motivation monetary rewards are on whistleblowing (Miceli & Near, Aug. 1994, p. 71).

Concomitant with the incentives are many laws and policies which somewhat constrain what may be legally done in the work of whistle-blowing. In some ways, whistle-blowing may be a mere filing of a report, with the rest of the responsibility for investigation going to professionals; in other ways, it may require some ongoing work for helping to build a case because there is not a formal structure for enabling such reportage.

Workplaces strive to enable problem-solving within the work-

place without spillage to external measures. For example, a complaint about a supervisor may go to an ombudsman to “circumvent the chain of command” (Miceli & Near, Aug. 1994, p. 68). Anonymous “alternate reporting mechanisms” may be used to capture employee feedback, or arbitration systems may be used to arrive at resolution (Miceli & Near, Aug. 1994, p. 69). The balance in creating policies for promoting whistleblowing to benefit from transparency requires discouraging “the ‘gadfly’ who threatens to file complaints when no reasonable basis exists and who is disruptive in attempting to assert or challenge authority indiscriminately” (Miceli & Near, Aug. 1994, p. 65). There are practical aspects where tilting at windmills or going after imaginary issues makes no sense, and in cases of real issues, if corrective action is not possible, some may decide to remain in silence. Others may take principled stands to try to correct systems and empower them to improved oversight. Ethical cultures may be shaped for desirable whistleblowing outcomes, to enable corrective actions (Kaptein, 2011, p. 513). A general concept is if there is a way to release tensions and resolve issues within the organization, there is a lessened sense of need for external whistleblowing. Most who report wrongdoing start internally (Miceli & Near, 1992, 2002, as cited in Mesmer-Magnus & Viswesvaran, 2005, p. 278).

What does whistleblowing generally involve, as a sequence? A basic version is offered in Figure 1. In a sense, whistleblowing is one from among a range of options. If people take on this role to head off a potential undesirable future, there are projections made about that.



This diagram suggests various options for whistleblowing.

Figure 1: A Generic Whistleblowing Scenario Sequence

In many cases, the public itself may not be aware of such whistleblower reports because organizational policies require that such issues be kept closely held. In some cases, the events may leak, often along with audio or video evidence, given the openness of a free press and open social media. In many ways, taking issues to the court of public opinion is part of the zeitgeist of the age, with the wide proliferation of smart phones and recording devices...and the fomenting of human tensions with news bubbles and social media filter bubbles (which restrict the way people see the world). Going widely public does provide some leverage and a spike in short attention in some cases (and not even much attention in many others).

The advent of social media in the whistleblowing space (as social practice) is a double-edged sword. Taking a whistleblowing story

public requires some level of sophistication. There is a need to simplify a story for mass consumption without changing facts. Then, a whistleblower has to know how to create attention, argue for the public interest related to the issue, self-present telegenically and charismatically, with social mass-mediated decorum, interact with others through the social media, and make a solid and compelling case. Successful engagement will also require not causing reputational harms or falling into defamation or libel. It may require various alliances and moneys. There may be avenues for legal recourses, and for those who have lost their jobs based on whistleblowing, potential “reinstatement and lost compensation” (Callahan & Dworkin, 1992, p. 273).

Research into whistleblowing has covered a range of approaches: Who are the whistleblowers? How are they motivated or demotivated? How do they differ in motivations and related actions across cultures? Across verticals? How does whistleblowing manifest in different domains? How do work places deal with whistleblowing through policies and practices? What are ways various domains have set policies to essentially encourage internal whistleblowing and to discourage external whistleblowing? How do the internal standards that organizations hold themselves to differ from either external regulatory agency standards, and then the standards of the general public?

Who are the whistleblowers?

There is not apparently a particular predictable pattern of a whistleblower or even particular characteristics that may indicate a whistleblower-in-the-making. [If “whistleblowers” can be compared to those who break loyalties through “espionage,” then perhaps the “MICE” construct about people’s motivations may apply; the “MICE” acronym represents “money, ideology, compromise, and ego”. This is not a conflation made here between “whistleblowing” and “espionage,” but there is overlap in some cases, with the first act used as cover for the second, and the sec-

ond used as a way to discredit the first. The idea of whistleblowing as showing disloyalty to an organization is implied when associated with a “loyalty component” to the workplace (Somers & Casal, Sept. 1994, pp. 270 – 271), for example.] A whistleblower has been referred to, generically, as a “loyal heretic” in multiple works (Ray, 2006, p. 441).

Being in possession of “convincing evidence of (serious) wrongdoing” and being directly affected by that wrongdoing was seen as important elements in whistleblowing (Miceli & Near, 1985, p. 525). The individual’s sense of “locus of control” (their sense of power over their own lives) is a mediating factor to the reportage of wrongdoing (Chiu, 2003, p. 65). A later work found that the individual’s sense of self-efficacy is also a factor in the internal whistleblowing decision (MacNab & Worthley, 2007, p. 407).

Besides predictivity of who may become whistleblowers in particular contexts, researchers have created typographies of conceptual types of whistleblowers based on psychological factors and levels of commitment to the organization (namely “indifferent, rebel, mature, and spoil”) (Chen & Lai, July 2014, p. 327).

In terms of the gender of whistleblowers, the research is mixed, with some studies showing one or the other as more likely to report wrongdoing (Mesmer-Magnus & Viswesvaran, 2005; Keil, et al., 2010, Seiferet, et al., 2010; Miethe, 1999, as cited in Miceli, Near, Rehg, & Scotter, 2012, p. 945).

Cross-cultural studies

Culture-based studies around whistleblowing have shown different cultural attitudes (based on different philosophies, values, orientations towards society and others, and differing contexts) towards whistleblowing and different rates (Chiu, 2003, p. 70). For example, American managers were found to be more likely to whistleblow than their Chinese counterparts, even though both

experienced similar levels of fear of retaliation (Keenan, 2007, p. 92).

A study of university students from S. Korea, Turkey, and the U.K. found preferences for “formal, anonymous, and internal modes of whistleblowing” but even fine-grained differences among these preferences (Park, Blenkinsopp, Oktem, & Omurgonulsen, 2008, p. 929). Some research in this space has involved the uses of scenarios and the interpretation of those scenarios (Gorta & Forell, 1995), for more detailed understandings. The co-researchers observed: “It is important to be aware that just because some public sector employees did not label a behaviour as corrupt, does not mean that they believed the activity to be desirable...For each of the twelve scenarios, those who considered the behaviour to be corrupt also considered it, on average, to be *more undesirable*, *more harmful* and *less justified* than did those who considered that the behaviour was *not* corrupt” (Gorta & Forell, 1995, p. 329).

Research in a different socio-cultural context suggests that “younger and less experienced respondents tended to have higher potential to blow the whistle if the cause is just; it is not so of older counterparts” who are seen as more conservative (Zhang, Chiu, & Wei, 2009, pp. 35 – 36). There are assertions of differences between individualistic vs. collectivistic cultures, with the idea that the first tends to be more supportive of whistleblowing than the latter (Zhang, Chiu, & Wei, 2009, p. 38).

While much of the literature posits a “whistleblowing/silence dichotomy,” others note that there are other alternatives to address issues of potential wrongdoing (Teo & Caspersz., 2011, p. 237), and more should be studied in terms of alternatives. There are “hidden, everyday forms of regulation within work groups” that may broaden the research on how wrongdoing may be effectively addressed (Teo & Caspersz., 2011, p. 247).

External whistleblowing

Larger organizations tend to be associated with “higher levels of whistleblowing” to external agencies on issues like workplace safety and equal employment opportunities to regulatory agencies...and unionized companies also experience more “external whistleblowing” (Barnett, Dec. 1992, pp. 956-957). External whistleblowing is affected by organizational factors (particularly “supervisor support and informal policies which support external whistleblowing behavior”) as well as “intrapersonal characteristics” (“gender” and “personal ideal values”) of whistleblowers (Sims & Keenan, 1998, p. 418). Interestingly, “formal policies which support external whistleblowing behavior were not found to be a significant predictor of external whistleblowing” (Sims & Keenan, 1998, p. 417). The more “extreme and recurring the wrongdoing, the more likely than the whistle-blower will inform authorities outside the organization” (Miceli & Near, 1985, p. 540).

Whistleblowing may be understood as actions to defend primary goals, such as “ensuring life against violence, ensuring that promises once made are kept, and ensuring the possession of things” (Bull, 1977, as cited in Fritzsche, Nov. 1995, pp. 3 – 4). Values may be instrumental ones (as a means to an end) or terminal ones (such as intrinsically desirable end states), what people strive towards. Those with various values may have positive or negative associations with whistleblowing (positive association: “independent,” “a world at peace,” “polite,” and others; and negative association: “an exciting life,” “freedom,” “logical,” “salvation,” “equality,” and “cheerful”); ultimately, the researcher found that there was no support or limited support for the hypotheses (Barnett, Cochran, & Taylor, Feb. 1993, p. 128). In terms of whistleblower “judgments and intensions,” some moral intensity components were more critical than others, with some nuanced results (Henik, 2005, p. 20). The “potential harm” factor was con-

sistently predictive of intended follow-on whistleblowing behaviors (Henik, 2005, p. 22).

Workplaces are conceptualized as those that should be free from sexual harassment, and “social-sexual behavior at work” are transgressive. A study of such behaviors found that “both the moral intensity of the behavior and the ethical ideology of the observer on recognition of the behavior as an ethical issue and intentions to intervene in the behavior” were important factors in combatting sexualized work environments (Bowes-Sperry & Powell, 1999, p. 779). The moral intensity aspects in this research are conceptualized as “social consensus, magnitude of consequences, and proximity”) (Bowes-Sperry & Powell, 1999, p. 781), with impacts on the ethical decision making process by the first two variables but not the third (proximity) (p. 795).

Workplace policies and practices

If “fraud involves concealment” and communication enables openness, increased “upstream” communication may reduce fraud (Hooks, Kaplan, Schultz, & Ponemon, Fall 1994, p. 86). Other features of the organization, its internal controls, its leadership and management ethical attitudes may affect fraud levels within (Hooks, Kaplan, Schultz, & Ponemon, Fall 1994, p. 88). Toleration of wrongdoing “has negative effects for the organization itself” but further “correcting wrongdoing may be nearly as positive as preventing it” (Miceli, Near, Rehg, & Scotter, 2012, p. 923).

Ethical leadership is seen to have effects on others’ whistleblowing behavior in a positive way (Bhal & Dadhich, 2011). Open communications channels are also important for an organization to elicit the perceptions of the employees (Gundlach, Martinko, & Douglas, Autumn, 2008, p. 46). If positive mood affects prosocial behaviors, does such a mood affect whistleblowing intention? Co-researchers suggest that positive mood does when the

individual's sense of the organization's ethical culture is "unethical" (Zhang, Chiu, & Wei, 2009, p. 630).

Intention to actions?

Factors found to affect whistleblowing intentions may not spill over to actual actions. Intentions may be experienced, but these may not translate to actual communications with regulators or trusted administrators. In the meta-analysis, the co-researchers found the following: "...that ethical judgment, approval of whistleblowing, and a perception that blowing the whistle is in one's best interests were related to whistleblowing intent but not to actual whistleblowing" (Mesmer-Magnus & Viswesvaran, 2005, p. 289).

The individual and the organization...and whistleblowing

One study suggests that the organizational structure ("centralized, matrix, horizontal, hybrid, and divisional") may affect whistleblowing (King, 1999, p. 315). For example, organizations with too many "structural levels within the hierarchy" may inadvertently encourage external reporting over internal (King, 1999, p. 324).

Are there "reformers" who are more willing to whistleblow to make changes vs. "organizational" persons who are too ingrained and loyal to report wrongdoing? In terms of a relationship between "organizational commitment and whistleblower," some empirical data suggest that it is a curvilinear one, as an inverted U, or that "relatively high and relatively low levels of commitment inhibit whistle-blowing, whereas moderate levels lead to an increased propensity to report wrongdoing" (Somers & Casal, Sept. 1994, p. 281). The level of organizational commitment is related to the individual's "socialization" into the organization (Somers & Casal, Sept. 1994, pp. 271 – 272) and is thought to affect acculturated employee worldviews. Or, perhaps if corrup-

tion is rampant, those who are participants or near it may become inured to it, and it becomes invisible. A later study suggests that “organizational commitment does not appear to be related to either whistleblowing intentions or actual whistleblowing” (Mesmer-Magnus & Viswesvaran, 2005, p. 286).

In a sense, the default setting is to remain “inactive observers” (or “silent” or “non-reporter” observers) for many, because it is the path of least resistance. The “doing nothing” expectation is an observed “standard or norm which authorities expect from members and by which discontented members are judged” (Kolarska & Aldrich, 1980, as cited in Miceli & Near, 1985, p. 538). Research shows “that most employees who believe they have observed wrongdoing in their organizations do not report it to parties who can take corrective action” (Brown, 2008; Mazur & Cassimatis, 2009; Miceli & Near, 1992; Miceli, et al., 2008; Miethe, 1999, as cited in Miceli, Near, Rehg, & Scotter, 2012, p. 924). In a study of Australian public sector employees, based on individual and situational predictors, to differentiate between whistleblowers and non-reporter observers, the co-researchers did not find a difference. The co-researchers suggest that a whistleblower is likely to be an “ordinary employee making a good faith attempt to stop what they perceived to be a serious wrongdoing that was initially identified through personal victimisation” (Cassimatis & Wortley, 2013, p. 615).

Research into potential cultural precursors of whistleblowing vs. silent observing is particularly relevant given the potential high impacts of wrongdoing in “multi-national enterprises” (Park, Blenkinsopp, Oktem, & Omurgonulsen, 2008, p. 938). Some organizations have interest in identifying potential whistleblowers during the recruitment and hiring process. One research has found that there is “no path-dependent course toward whistleblowing or inactive observation exists, nor does an *a priori* profile of whistle-blowers whom organizations can attempt to screen out during recruitment” (Henik, 2015, p. 442). While peo-

ple may have stereotypes of who will whistleblow, those impressions are not backed up by empirical research.

Professional hierarchy may play a role for within-organization whistleblowing. One researcher observes:

Individual and organizational propensity for whistleblowing is higher for upper-level followed by middle-level and then first-level managers. Similarly, upper-level managers are more likely to blow the whistle on serious, minor, and harm to others forms of wrongdoing, followed by middle-level and then first-level managers. As expected, fear of retaliation is stronger for first-level, then middle-level and upper-level managers. A significant difference exists between managerial levels on supportive communication climate, with greater perceived supportiveness for first-level, followed by middle-level and then upper-level managers. Lastly, no apparent difference exists between managerial levels with respect to moral perception variables. (Keenan, Mar. 2002, p. 25)

Newcomers to organizations were found to be “less likely to report a wrongdoing” based on a “fear of being incorrect” (Near & Miceli, 1985, as cited in King & Hermodson, 2009, p. 320) and lack of knowledge with “proper disclosure channels within the organization” (Barnett, Cochran, & Taylor, 1993; Stewart, 1990, as cited in King & Hermodson, 2009, p. 320). Those who whistleblow externally tend to be those who “have less tenure with the organization than internal whistleblowers” (Dworkin & Baucus, 1998, as cited in Chiu, 2003, p. 66). External whistleblowing is not seen as career-enhancing or risk-free, so there are preferences for anonymous ways to share information (Nayir & Herzig, 2012, p. 208).

The respective cultures of organizations may affect whistleblowing behavior. Seven dimensions of organizational culture have been identified, including the following: “1) vigilance, 2) engage-

ment, 3) credibility, 4) accountability, 5) empowerment, 6) courage, and 7) options” (Berry, 2004, p. 1). These dimensions may be used to inform policies and practices for desired outcomes.

Individuals registering higher on Machiavellianism tend to be “less likely to report wrongdoing” (Dalton & Radtke, 2013, p. 153). This psychological tendency is not wholly determinative, however. The researchers found that “a strong ethical environment, relative to a weak ethical environment, increases whistleblowing intentions incrementally more for individuals who are higher in Machiavellianism” (Dalton & Radtke, 2013, p. 153). Persons who tend to be “proactive” are associated with whistleblowing and “positive outcomes” like increased sales (Crant, 1995, as cited in Miceli, Near, Rehg, & Scotter, 2012, p. 947).

In terms of reporting peers for wrongdoing, a variety of factors of the observer, the situation, and the organization affected the decision making in a healthcare context (King & Hermodson, 2009, p. 309). Risks of wrongdoing in a healthcare environment include “negligence, abuse or danger” (Ray, 2006, p. 438), among others. In this context, having the support of “an interdependent moral community to address ethical concerns” in an organization may be constructive (Ray, 2006, p. 438).

While emplaced workplace policies may share similarities, not all agree that whistleblowing policies are a net positive. There is the sense that workplace policies may increase responsibilities and risks for employees by making them “liable for ethics at work” (Tsahuridu & Vandekerckhove, 2008, p. 107) and “fails to safeguard the integration of organisation and society, the integration of the economic and social concerns” (Tsahuridu & Vandekerckhove, 2008, p. 115). Some whistleblowing policies involve both a “carrot” and a “stick”, with money offered for important information but also the punishment of “sanctions” for not speaking up (Callahan & Dworkin, 1992, p. 331). Another work suggests that policies “hide the obvious fact that whether to blow the whis-

tle is indeed a choice, not a matter of objective duty" (Bouville, 2007, p. 579). [Some government positions in national security and intelligence require oath-based compellence to whistleblow in the face of observed wrongdoing.] Finally, policies "on the books may be loosely coupled with what the organization actually does" (Martin, 2000, as cited in Miceli, Near, Rehg, & Scotter, 2012, p. 928).

Blowing Whistles Privately and Publicly on Small-to-Mass Scales on Social Media

In this present moment, "whistleblowing" is an activity *du jour*, with plenty of global attention and professions of truth and virtue, and responding acclaim in some quarters. Social media are harnessed for this outreach, with one-to-one, one-to-many, many-to-one, and many-to-many types of communications and intercommunications. The narrowcast outreaches include the uses of email, microblogging (to private accounts), direct calls, and others. The broadcast outreaches include the uses of social networking sites, microblogging publicly, broadscale email campaigns, and others. Generally, the messaging may be strategic and targeted to others who may share similar ideologies and / or interests. In other cases, the idea is that the audiences are so big that certainly other like-minded individuals will come forth and contribute messaging or resources.

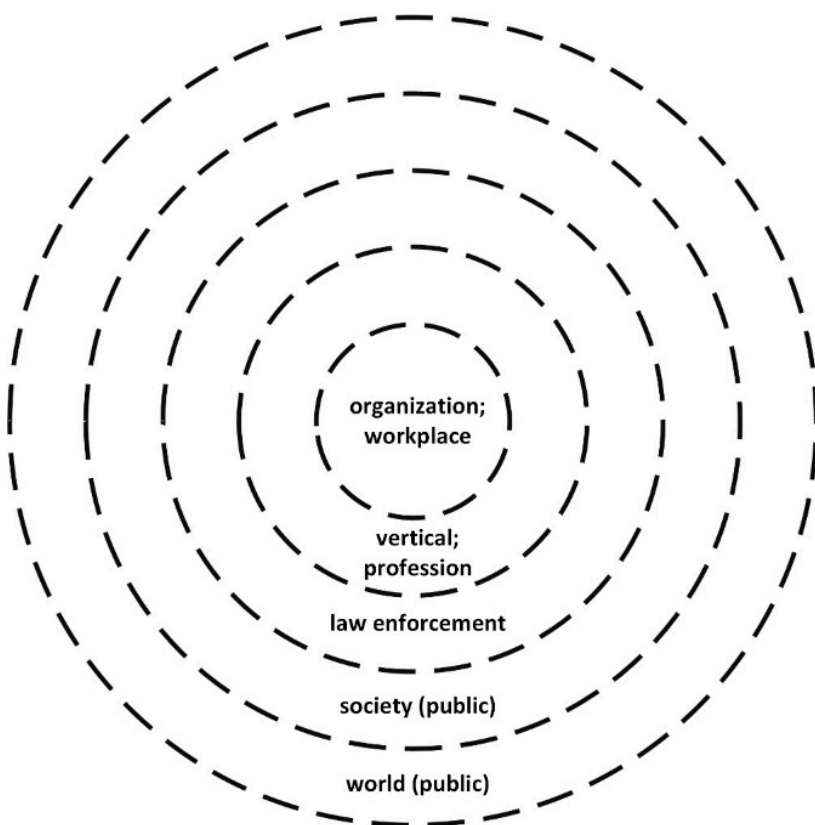
In some cases, where an issue is resonant (and an audience "read-in" to the issue and receptive), one whistleblower is joined by others. In other cases, a whistleblower stands alone. In some cases, they remain anonymous; in others, they are revealed to the public. Where there is a confluence of interests, and alignments with public meta-narratives, such actions are acclamations of speaking truth to power. There are temporary strategic and tactical alignments to support particular issues. In other cases, there is insufficient understanding of an issue (a lack of base knowledge), a lack of sense of relevance of the issue, and resulting apathy and

non-response. Or there may be those who disagree with the individual's stance, and among this group, there may be some who are sufficiently inspired to disagree loudly or even take other actions (including violence).

In terms of going broadly public, in some cases, an individual may be sharing privy information that may be used in unintended ways by others, including potentially harmful ones. For example, a disgruntled employee may be sufficiently vulnerable to a stranger's commiseration and may compromise themselves or the company by sharing private closely-held information (protected under non-disclosure agreements or "NDAs") or by complaining about other staff, who may then be compromised or engaging in some harmful shenanigan or even sabotage against the company. Those who go public open themselves up to a wide number of opportunists of all stripes.

Many workplaces have policies for internal whistleblowing in order to head off various problems as soon as possible. There are defined paths for recognizing unethical behavior (noncompliance with policies), and these are found to partially inform the decision to whistleblow or not (King & Hermodson, 2009, p. 309). Whistleblowers may choose to escalate beyond the organization or workplace and into the profession, to law enforcement, to society, and the world (Figure 2). For some, instead of escalating in a step-by-step method, they may bypass other whistleblower bureaucratic structures altogether and go straight to the broad public, straight from an internal environment to an external and broadscale one. For some, they may find the issue sufficiently familiar to a broad audience and some timely alignment with the present. Perhaps they see the publicity as positive to advancing the issue, to promoting their public identity, to recruiting followers, and to raising social funding and resource donations. In many cases, renown may be converted into cash or other material and non-material resources. The "social whistleblower" phenomenon has emerged in an age of elicited leaks,

with many who have created a meta-narrative of the benefits of grievance-seeking and the relief of that grievance by leaking privy data. This is the value proposition of some leak site that promise that a portion of the world's attention may be applied to the grievance or "telling on" others—as both catharsis (relief of the tension) and reinforcement (affirmation, the potential of enacting some revenge). In some cases, government agencies have set up such "storefronts" in order to identify criminal behaviors and conduct counter-intelligence. [A common colloquial sense of this is the question, "Who wants to know?"] Another challenge to this model is that understanding the minutiae of a particular grievance requires local and contextualized and specialized knowledge. The general sense of "Google-knowing" (the ability to find information via the Google Search engine) as a "digital human" in the modern "digital form of life" has severe limits and stands in for actual knowledge (Lynch, 2016, pp. 21 – 40). The value proposition behind the leak model is about being self-righteous on a particular issue, with a concept in the mind of the leaker about what is being achieved vs. that of the site owner vs. that of the general public (and specific publics therein). In general, however, the centripetal forces pulling towards the center are fairly powerful, and there has to be a lot of centrifugal effort and will to push out past escape velocity to the peripheral rings (to the broad publics) through the concentric circles. On a small scale, a whistleblower may use social media to reach out to another, in privacy; on a large scale, a whistleblower may go one-to-many...to try to attain as much attention as possible.



**Escalating “Whistleblowing” Reportage Beyond
the Organization to the World**
(via formal and informal channels)

This diagram of concentric circles shows an escalation of whistleblowing from a core center and outwards towards the world.

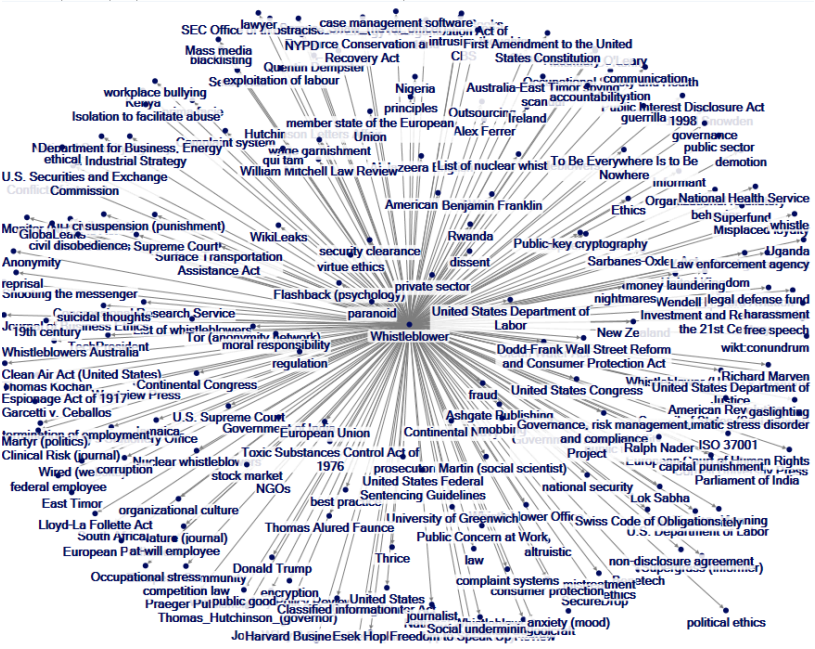
Figure 2: Escalating ‘Whistleblowing’ Reportage Beyond the Organization to the World (via formal and informal channels)

Various aspects of social media shed light on the sense of whistleblowing. For example, in Google Scholar (an index of academic publications), the autocomplete for the search term <whistleblowing> includes the following (in descending order): “whistle-

blowing...cases, in nursing, ethics, in organizations, in healthcare, policy, law, nhs, system, protection.” When the search term “whistleblowing” is in quotation marks in Google Scholar, the autocomplete includes the following: “decision tree, decision, cases, in nursing, ethics, in organizations, in healthcare, policy, law, nhs.”

In the general Google text search, the autocomplete includes the following: “definition, policy, law, meaning, cases, examples, in nursing, cases in the healthcare field, protection.” When “whistleblowing” is placed in quotation marks in the search box for Google Search, the autocomplete includes the following: “definition, policy, law, meaning, cases, examples, in nursing, cases in the healthcare field, protection, in business.”

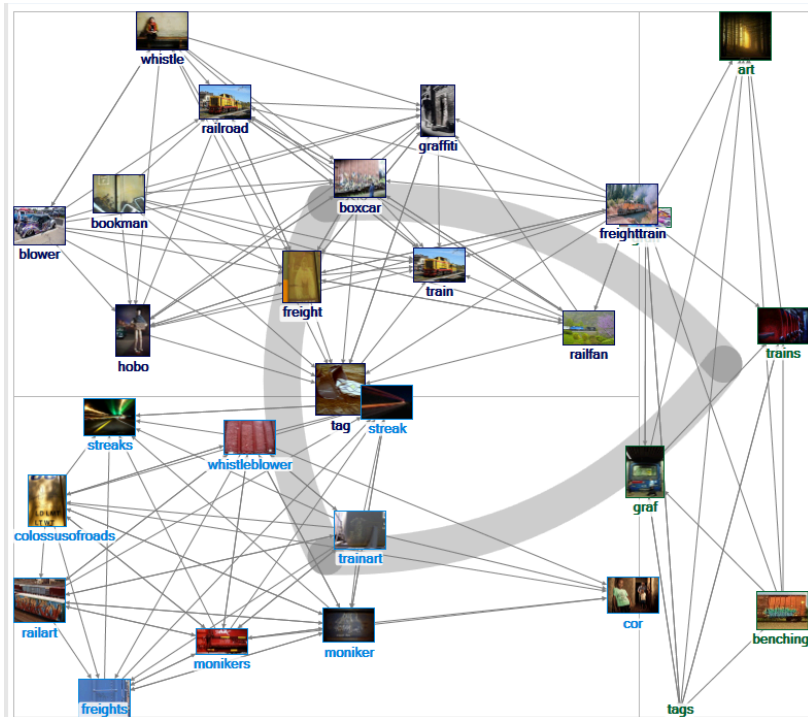
On the English Wikipedia, a global scale crowd-sourced encyclopedia on the Web, the “whistleblower” article is outlinked to a number of other Wikipedia articles related to locations, government organizations, individuals, historical events, and related technologies. This article-article visualization shows something of the word sense of “whistleblower.” (Figure 3)



This article-article network graph shows outlinks from the “Whistleblower” article in Wikipedia to other article pages in Wikipedia (on the Mediawiki platform).

Figure 3: “Whistleblower” Article-Article Network on Wikipedia (1 deg.)

On the Flickr social image sharing site, the related tags network to “whistleblower” is almost singularly about a whistleblower on a train, whose job is to warn of approach. The tags in all three interrelated groups are suggestive of something of “conscience” (Figure 4).



This visual shows a related tags network at 1.5 degrees to "whistleblower" on the Flickr social image sharing site.

Figure 4: "Whistleblower" Related Tags Network on Flickr (1.5 deg.)

Discussion

In many cases, various elements militate against whistleblowing:

- social pressures
- official policies
- legal costs
- time costs
- incomplete information
- historical cautionary tales
- a lack of knowhow
- the sense of risk and anticipated regret, and other fac-

tors

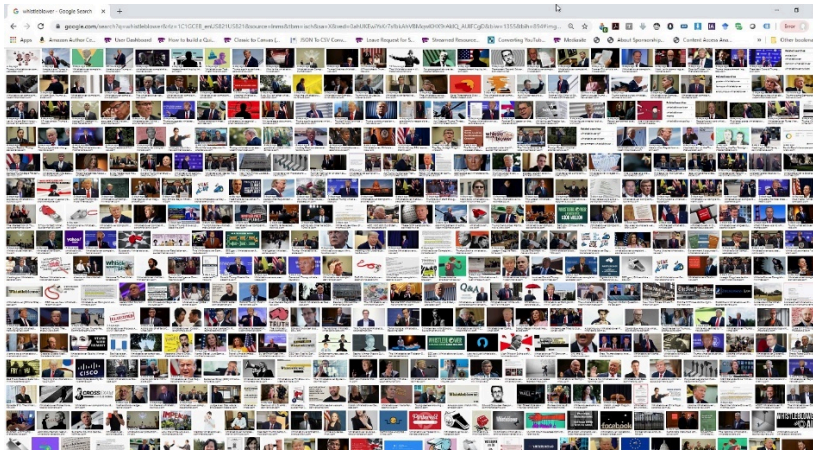
based on the research literature. In a collection of 1,348 social images from “Google Images” in a search of “whistleblower,” some insights may be captured about a public sensibility of this phenomenon. (Figure 5) At a meta level, auto-created tags (used as filters) that came with this set of imagery include the following:

cartoon, poster, protection, anonymous, rachel weisz, famous, government, retaliation, clipart, nigeria, enron, snowden, american, hotline, employee, nurse, definition, movie, wikileaks, internal, sec, business, illustration, ethics, whistleblower act, infographic, graph, facebook, workplace, osha

(The tags are in lower case per usual handling of tags.) These images are likely part of news stories, web sites, blogs, and other contextualized data contents. Here, however, they are disconnected and stand-alone. The messaging is in the visuals and the text (and the metadata).

A majority of the images show public figures engaged in various whistleblower issues of the moment, including the U.S. president under an impeachment inquiry, for example. There are images of people testifying before the U.S. Congress, over one matter or another. There are photos of famous and infamous whistleblowers, such as a young former member of the intel community who had absconded abroad with reams of secret data from the U.S. National Security Agency. (His name is synonymous with data leakage and traitorous behavior.) There are book covers directly or peripherally about this topic; one is a how-to handbook, and one is a survival guide. One is a movie poster with a subplot about whistleblowing. One is a sunburst diagram showing the percentage of various types of whistleblower complaints filed with a particular government office.

Several informational graphics describe various reward programs for whistleblowing. Various drawings read: “I support whistle blowers,” “protect whistle blowers,” “blow the whistle,” and “speak up,” alongside drawings of whistles. Another is a word cloud focused around the topic of whistleblowing. One image shows a person underneath a giant gavel with a dollar sign on it. Faces in silhouette suggest something of personal anonymity. In this social imagery set, the “organizational man” (the silent or non-reporter observer) is not a hero. Earlier research suggests that “attitudes toward it continue to be at the very least ambivalent, with many whistleblowers experiencing highly negative responses to their actions” (Alford, 2001, as cited in Park, Blenkinsopp, Oktem, & Omurgonulsen, 2008, p. 929).



This screenshot shows thumbnails of social images shared with the tag “whistleblower” on Google Images.

Figure 5: “Whistleblower” Social Imagery on Google Images

Australia	
0.6669	disadvantage
0.6582	governance
0.6519	market share
0.65	corporate governance
0.6493	case study
0.6483	implications
0.648	security issues
0.6467	foreign policy
0.6438	implementing
0.6438	market segmentation
0.6436	evaluating
0.6435	implications of
0.6433	implementation of
0.6427	marketing plan
0.6424	marketing report
0.641	segmentation
0.6406	report writing
0.6396	problem of
0.6382	advantage disadvantage
0.6352	critique
0.6349	product life cycle
0.634	statistic
0.6338	organisational
0.6325	disadvantage of
0.6317	fourier
0.6316	decision making
0.6313	fourier transform

0.6312	policy
0.6308	behaviour
0.6306	resistance to
0.6303	total quality
0.6295	environmental effects
0.6292	application of
0.6285	introduction of
0.6285	product life
0.6283	total quality management
0.6282	wastewater treatment
0.628	media in
0.6272	evaluation of
0.6268	assessment of
0.6267	advantages
0.6265	case study of
0.6264	case study on
0.6245	value chain
0.6244	economic growth
0.6243	implications for
0.6243	developing countries
0.6241	advantage of
0.6238	implementation
0.6235	management of
0.6231	ethics
0.6231	strategies
0.6228	wto
0.6226	minimisation
0.6223	analysis of

0.6222	mass media
0.6218	the future of
0.6214	advantages of
0.6212	marketing communication
0.6203	approaches
0.62	negotiation
0.6198	mechanisms
0.6194	organization
0.6189	ethic
0.6189	report on
0.6188	appraisal
0.6187	criticisms
0.6185	sustainable development
0.618	strategic plan
0.6179	organisational structure
0.6178	future of
0.6174	promoting
0.6166	objectives
0.6166	and market
0.6164	media influence
0.6164	dfd
0.6162	effectiveness
0.6162	distribution
0.616	trends in
0.6159	tqm
0.6159	critique of
0.6156	alcohol and
0.6151	human rights

0.615	problems of
0.6149	crisis management
0.6149	theories of
0.6142	marketing strategy
0.6142	social change
0.614	positioning
0.6136	globalization

Canada	
0.7432	mechanism
0.7381	synthesis
0.7374	policing
0.7284	binary tree
0.7276	synthesis of
0.7259	mechanisms
0.7259	reforms
0.7216	electrophoresis
0.7216	bessel
0.7188	psychological
0.7175	representations
0.7171	productivity
0.7161	demographics
0.7144	findings
0.7139	degradation
0.7121	coefficients
0.7119	the elderly
0.7108	analysis
0.7106	structure
0.7098	case study
0.7094	annual report
0.7087	portrayal
0.7085	journal articles
0.7083	effect of
0.7076	nmr
0.7075	industry analysis
0.7071	binary search

0.7067	references
0.7063	application of
0.7045	microbial
0.7035	attitudes
0.7034	synchronous
0.7033	fourier
0.7029	alcohols
0.7015	direct investment
0.7013	mechanism of
0.7013	dietary
0.701	adolescent
0.7008	analysis of
0.6989	algorithm
0.6989	interpolation
0.6989	op amp
0.6986	context
0.6983	distribution
0.6979	privatization
0.6972	hash table
0.697	negotiation
0.6969	absorption
0.6966	role of
0.6963	impact of
0.6961	gender issues
0.6961	nutrient
0.696	applications of
0.696	activism
0.6959	structure of

0.6956	differences in
0.6951	nonverbal
0.6948	critique of
0.6946	defined
0.6936	in java
0.6935	implications of
0.6935	market share
0.6933	effectiveness
0.6925	organizational
0.6923	cytochrome
0.6922	style guide
0.6921	adaptive
0.6921	spectroscopy
0.6919	segmentation
0.691	research papers
0.6908	block diagram
0.6908	canadian charter
0.6903	theories of
0.69	symbolic
0.6896	use of
0.6891	fluorescence
0.6888	ethics
0.6887	foreign direct investment
0.6887	genetics
0.6885	marketing case
0.6883	fdi
0.6881	risk
0.6878	expenditures

0.6876	stress
0.6876	structural
0.6876	molecular weight
0.6875	process
0.6874	disorder
0.6874	gender differences
0.6873	semantic

United Kingdom	
0.919	diameter
0.9145	positive
0.9143	sensory
0.9134	expanding
0.9131	measure
0.913	care plan
0.9123	a percent
0.9118	type
0.9109	sds
0.9106	include
0.9101	value in
0.9097	insert
0.9094	benefits of
0.9086	word document
0.9083	hearing
0.9081	explain
0.9067	thickness
0.9063	wider
0.9063	pressure
0.9046	calculate
0.9045	matching
0.9044	length of
0.9036	data is
0.9033	compared to
0.9031	rectangle
0.9022	depth
0.9016	non

0.9011	osteoarthritis
0.9011	actuator
0.9008	respond
0.9003	what is whistleblowing
0.8997	questions
0.8994	scatter
0.8993	grabcad
0.8993	prevent
0.8992	person centred
0.899	explain the
0.8989	type 1
0.8984	lucidchart
0.8982	health and care
0.8981	angle
0.898	teaching school
0.8978	merge
0.8974	percentile
0.8971	width
0.897	explain how
0.8968	inflammation
0.8965	contains
0.8964	text in
0.8961	antibiotic
0.8959	how to determine
0.8957	patient
0.8957	a range of
0.8949	capacity
0.8945	paragraphs

0.8944	fluid
0.8941	linguee
0.8934	business model canvas
0.8934	an image
0.8934	budgeting
0.8933	model canvas
0.8924	feedback
0.8922	older adults
0.8919	immediate
0.8917	negative
0.8911	development matters
0.8911	employee
0.891	double exposure
0.8908	drawing of
0.8905	injection
0.8902	mri
0.8902	absence
0.8901	synonyms for
0.8898	percent
0.8898	internally
0.8897	cylinder
0.8897	doodle poll
0.8896	over time
0.8895	jetpunk
0.8895	a value
0.8894	drawing
0.8893	facilitate
0.8891	another word for ensure

0.889	floor plan
0.8889	relationship
0.8888	staff
0.8886	equal to
0.8882	sulfate
0.8882	one file
0.8881	6 cs

United States	
0.8651	stress and
0.8595	case study
0.8583	nonverbal
0.857	nonverbal communication
0.8558	case study on
0.8556	effectiveness of
0.8535	the workforce
0.8531	media in
0.852	analysis for
0.8517	expenditures
0.8515	morphology
0.8509	matlab code
0.8504	attitudes
0.8444	body image
0.8443	delinquency
0.844	bjt
0.8439	arguments
0.8431	case study of
0.8421	academic journals
0.8419	advantages
0.8417	discrimination
0.8415	transfer function
0.8415	developing countries
0.8408	d flip flop
0.8404	social support
0.8387	advantages of
0.8379	perceptions

0.8372	opposition to
0.8366	stereotyping
0.8364	gender differences
0.8361	content analysis
0.8353	portrayal
0.8351	stress
0.8344	coefficients
0.8344	promoting
0.8337	marketing strategy
0.8329	effects of stress
0.8329	gender discrimination
0.8313	ligand
0.8311	social development
0.8304	approximation
0.8303	integration in
0.8299	profitability
0.8296	research proposal
0.8293	pathogenesis
0.8292	absorption
0.8292	synthesis of
0.8291	influencing
0.8288	rates of
0.8288	methods of
0.8284	drawbacks
0.8275	quality of
0.8274	esl students
0.8269	impairments
0.8267	family structure

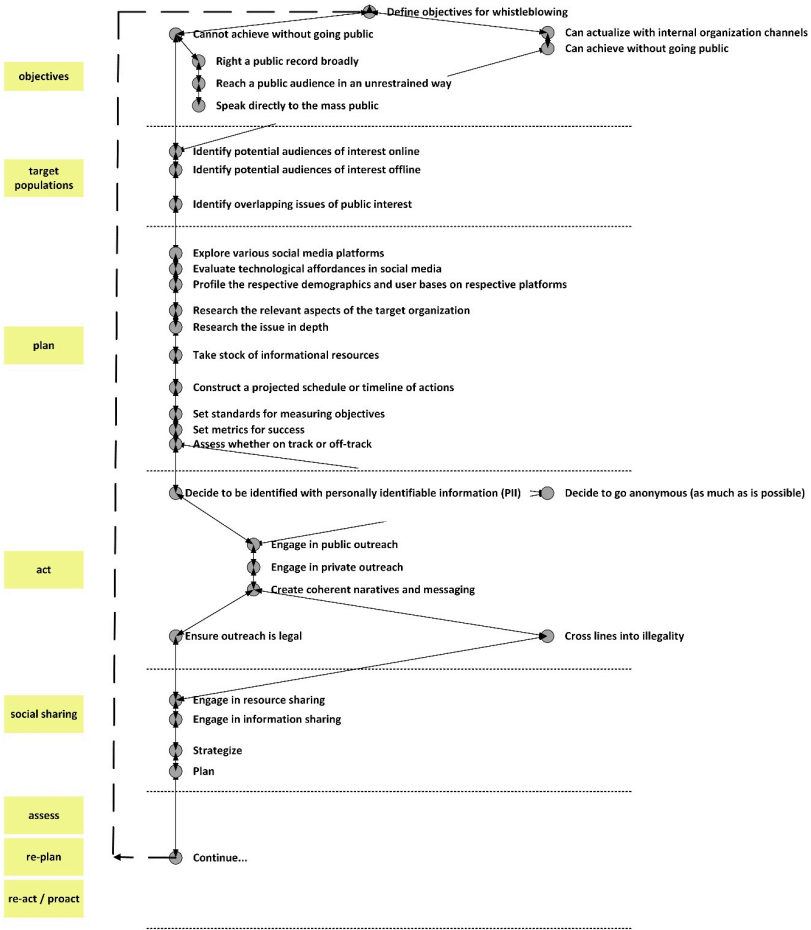
0.8266	self image
0.8265	physical disabilities
0.8262	juvenile delinquency
0.826	disorder
0.8258	analysis on
0.8257	boundary conditions
0.8257	prevalence
0.8256	solutions to
0.8255	mass media
0.8254	scholarly journal
0.8252	physiological effects
0.8251	degradation
0.825	visual impairment
0.8249	on advertising
0.8249	applications of
0.8246	psychological effects
0.8238	family systems
0.8236	media effect
0.8224	dehydrogenase
0.8217	alcohol use
0.8216	victimization
0.8216	the media
0.8214	dependence
0.8209	gender roles
0.8207	low pass filter
0.8206	pass filter
0.8205	influence in
0.8205	influence on

0.8203	racial discrimination
0.82	language acquisition
0.8199	economic cost
0.8197	physical development
0.8194	education system
0.8191	learning theory
0.8187	diversity in

Table 1: Correlating Search Terms for “Whistleblower” Searches Based on Weekly Time Patterns for Australia, Canada, United Kingdom, and the United States

In Table 1, the searches for “whistleblower” was explored for Australia, Canada, the United Kingdom, and the United States, all on the same day. Based on mass search data (on Google Search) and weekly time patterns, the associations among these co-occurring search terms vary widely, according to Google Correlate. At minimum, these differences suggest different ideations related to “whistleblowing.”

So what do these details from prior academic research and social media imagery and mass search data suggest about decision-making for whistleblowing, including taking an issue broadly public via social media? If there is required due diligence, what are some of the issues that might need to be considered? Figure 6 offers some early ideas in this “social whistleblowing” space.



Going Public with Social Whistleblowing (a preliminary decision tree)

This diagram shows a decision tree for whistleblowing.

Figure 6: Going Public with Social Whistleblowing (a preliminary decision tree)

In this “decision tree,” a person considers the objectives of the whistleblowing, identifies target populations, forms a plan, acts, engages in social sharing, assesses the progress, re-plans, and re-acts in a general cycle. Similarly to “high need-for-cognition

individuals in ethical decision making,” that were found to require “a greater utilization of issue-relevant information” (Singer, Mitchell, & Turner, 1998, p. 527), perhaps such individuals engage in due diligence and ensure that their position of calling out wrongdoing publicly is defensible. This work suggests forethought to the actions vs. an impulse-driven leak. This suggests consideration of first-, second-, and third-order effects. The idea is that making a decision to go public is a crossing of a Rubicon, with no take-backs and no returns to the antecedent state.

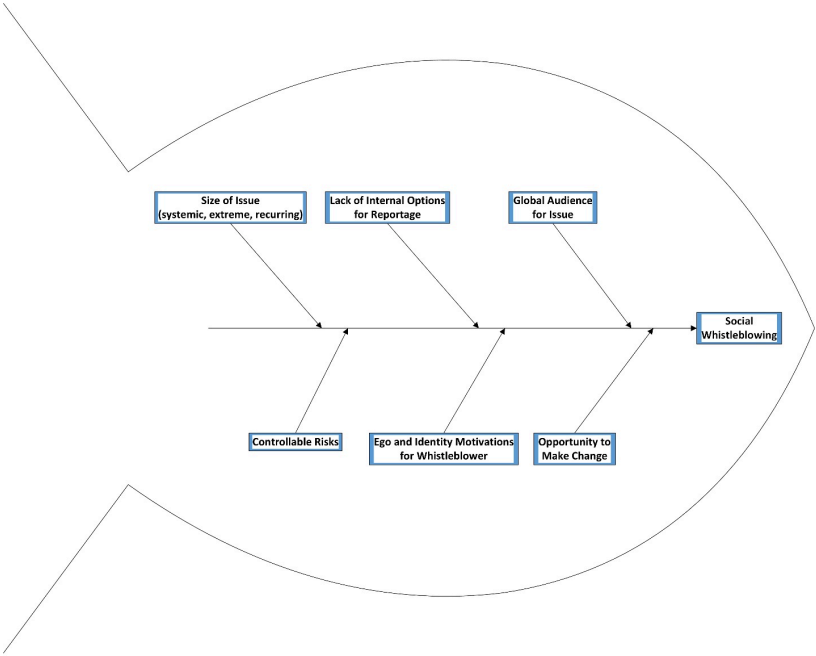
In the real, there are many other additional factors, including reading a public into a situation to explain the wrongdoing. After all, the general public is not necessarily educated about the work of particular whistleblowers and may need the logical “dots” to be connected for them. Persons must be comfortable in public space with a public persona, and they have to be able to make proper decisions in that space and under that scrutiny. They have to be able to withstand public attacks. They have to earn and maintain a public trust. This sequence may seem excessively detailed, with most whistleblowers not checking so many boxes, before taking action. For others, this may seem like a fairly coarse decision tree, with many finer details left out. The breaking of any one of the prerequisites may end the whistleblowing. Projections of others’ interests and / or participation may not materialize.

How to whistleblow effectively requires knowledge about how to do so effectively. Capturing mass and/or social media attention alone may not bring about the necessary changes (Near & Miceli, July 1995, p. 679). For example, dissents may “increase the likelihood of discretionary review, but review is far from guaranteed” in the U.S. judicial system (Beim, Hirsch, & Kastlelec, 2014, p. 916). Others observe that “first reports of unethical or illegal activities are often ineffective” (Van Scotter, et al., 2005, as cited in Taylor & Curtis, 2010, p. 22). To be effective, there has to be

“persistence in reporting” (Taylor & Curtis, 2010, p. 23), given its importance for ultimate success.

“Effective whistleblowing” involves “the extent to which the questionable or wrongful practice (or omission) is terminated at least partly because of whistle-blowing and within a reasonable time frame” (Near & Miceli, 1995, p. 681, as cited in Near & Miceli, Sept. 2008, p. 267), and this issue goes beyond the resolution of the local issue that may have triggered the report of wrongdoing. To ensure “wrongdoing cessation” will require more than the initial attention-getting (Near & Miceli, July 1995, p. 680). Often, going public is seen as leverage to apply pressure on the leadership of organizations to make particular changes, or to encourage a regulatory agency to take actions. Taking an issue external to the workplace or organization adds more complexity, with the whistleblower having to have a “legal basis for the complaint” (Near & Miceli, July 1995, p. 683). The characteristics of the whistleblower are a key focal point because who they are affects their sense of “credibility” and “power” to speak on the issue and will affect how public pressure incentivizes changes within the organization (Near & Miceli, July 1995, p. 682). Objectively measuring the efficacy of whistleblowing has been challenging to researchers, who need to rely on “existing legal data...or innovative approaches to the use of multiple informants for each case” potentially to support their work (Near & Miceli, July 1995, p. 704). Viewed this way, taking on whistleblowing for abstract concepts like “the right side of history” and “values” may seem somewhat flimsy.

An early “barebones” fishbone diagram is drawn to indicate some of the factors that may support “social whistleblowing” (Figure 7) and elaboration follows (Table 2).



Whistleblowing to a Broad Public through Social Media or Not
(a barebones fishbone diagram)

This visual shows factors that may promote social whistleblowing (in a barebones fishbone diagram).

Figure 6: Whistleblowing to a Broad Public through Social Media or Not (a barebones fishbone diagram)

For Going Broadly Public	Against Going Broadly Public
No internal options for reportage	
Running out of options for reportage and no satisfactory resolution	Internal options for reportage
Audience of the global public	Options for reportage
Potential allies	Satisfactory resolution
Issue relevance to the public	Sufficient audience
Social identity/reputation-making for the whistleblower	Issue not particularly relevant to the public
Ability to attract and make money	No personal ego motivation
Ability to make change	No direct financial motivation
Protections and control against blowback	No path to make change
Low levels of risk	High levels of risk
Low costs	High risks for costs
Shielding against some of the potential harms	Lack of protections against potential harms

Table 2: Pros and Cons For and Against Going Broadly Public with the Whistleblowing

Future Research Directions

If a whistleblower thinks he or she has witnessed wrongdoing, how can they proceed on likely incomplete or partial information? Or can they learn more without stepping into others’ lanes or invading others’ privacy? How can they report on what they can prove vs. what they think they know? How can they avoid

the “WYSIATI” (what you see is all there is) as a cognitive bias? If repercussions redound to the whistleblower, how can they mitigate the potential effects? Are there ways to advance without incurring unnecessary costs and *post hoc* regrets? (Is there something like the Abilene Paradox where there may be excitement to pursue a particular course of action but later unhappiness at the destination and bewilderment at taking on a particular path?)

When reporting wrong-doing, perhaps the whistleblower may have some control over the first salvo, but what follows may be beyond their control. Within an organization, perhaps the report is squelched. Or it is investigated and does not result in findings of wrongdoing? Perhaps information leaks, and others come forward, or others come forward and provide different narratives. Or an opening salvo achieved in public space...may be read as throwing out the rulebook and rejecting the existing systems that enable paths forward (to not uncharted territory but differently charted territory). In this scenario, it may be that a whistleblower tries to attain mass media interest...but may not have sufficient proof. Or the topic is not seen as sufficiently newsworthy. Certainly, acquiring formal mass media attention is challenging. How a public storyline plays out is not particularly predictable.

For would-be whistleblowers, when would it be optimal for them to go wholesale public via social media? How can they be assured that the issue that they’re engaging has public interest and public implications? How can they be assured that it is something that may affect a broad swath of the polity? How can they develop strategies and tactics even against others in the space? How can whistleblowers maintain personal security? How can they anticipate possible fallout? How can they ensure that their story has “legs” and will last over time (given the high competition for public attention)? How can they deal with counter-messaging?

Even more importantly, how can they calibrate the necessary level of blowing the whistle to control for the scope of effects

and not engage in over-reach or rule-breaking or miscalculations (like libel and defamation or public offense)? With incomplete information, how can employees and ex-employees know how to proceed, with incomplete information? When does public whistle-blowing work, and to what ends, and why? What are some practical ways to understand means-ends justifications?

In some cases, posting to social media may be cathartic and deplete the impetus for the sharer. In other cases, such postings may reinforce convictions and encourage further actions. When does either catharsis or reinforcement occur, and why?

Conclusion

Finally, at the time of publication, there were several websites still eliciting global information for leakage, regardless of the local context or situation. This was so even as various leaders and figureheads in this movement were arrested and incarcerated. In other words, the idea of leaking information to achieve “justice” for the aggrieved still seems to have some salience to some individuals.

A number of works refer to the cultures of silence, the “mum effect,” “codes of *omerta*,” and other references to codes of silence. In purely rational and self-regarding considerations, people would not necessarily take on the challenges of blowing a whistle. In many ways, whistleblowers are following in an idealistic tradition, in which truth is revealed, justice is ultimately served, books are closed, and people get their due. In this universe, issues are investigated thoroughly and professionally, with all relevant leads explored. Tidy resolutions are possible. In some cases, they are right, and systems work, and some measure of justice and change occurs.

A naïve whistleblower approach might begin with the sense that one has a “story to tell” to right some wrong, to name-call, and to

achieve some vengeance. The individual may believe that something subjective and idiosyncratic is actually universal and broadly relevant to the world. An egocentric point-of-view may be mistaken for full (and even “objective”) reality. Follow-on analysis might suggest that there are different points-of-view regarding the issue and perhaps a mix of motivations. Perhaps the certitude of outcomes may dissipate into complexity and a wider range of foreseeable futures. Perhaps if they step out front too soon, those others who have an interest in the issues may be able to hide some details. Or if they take too high of a profile and too big of a step, they may compromise themselves, their organization, and even their country. (A common example here is Edward Snowden.) In stepping out on the Web and Internet, people find that anything shared is broadly available, transnationally so, and many different repercussions may flow from that, with first order, second order, third order effects, and even serendipitous occurrences, come what may.

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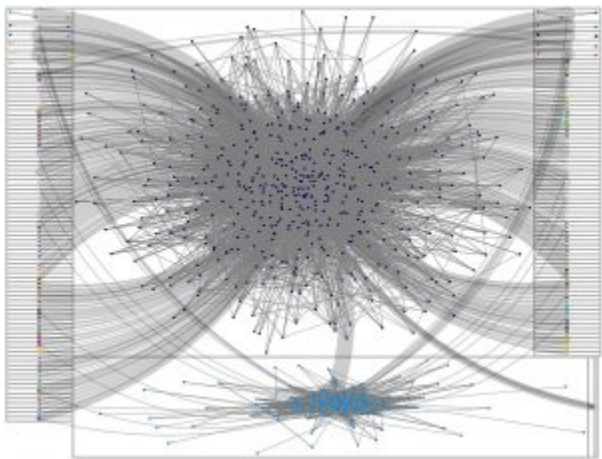
Key Terms

Inactive Observer: An employee or other who observes wrongdoing but chooses not to report it (to anyone in authority who can investigate or address the issue)

Whistleblowing: The reporting of wrong-doing in an organization or workplace to someone in authority or others, to bring about change

PART IV

PART 4: POLITICAL
EXPRESSION



5

IN FLAMES, IN
VIOLENCE, IN
REVERENCE:
PHYSICAL
PROTEST
EFFIGIES IN
GLOBAL AND
TRANSNATIONAL
POLITICS FROM A
SOCIAL
IMAGESET

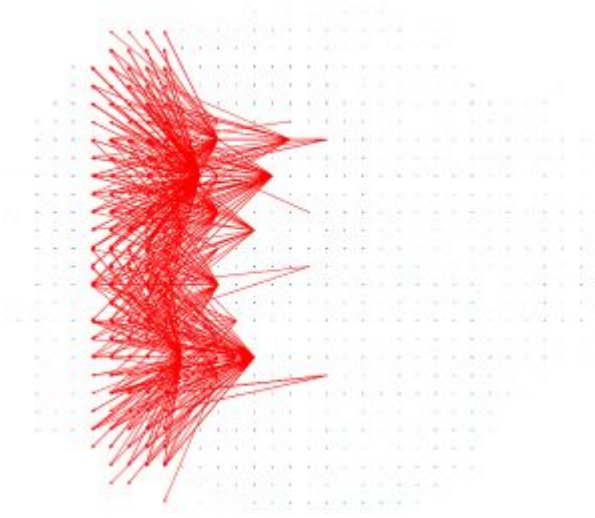
Shalin Hai-Jew

Abstract

The popularization of the Internet, the WWW, and social media, has enabled various populations around the world to be politically “woke” together, with varying levels of agreements and disagreements around a variety of issues, with conservatism around some and radicalism around others (generically speaking). In social imagery, there are visuals of various protest effigies, depictions of public figures representing certain values, ideologies, platforms, policies, attitudes, styles, stances on issues, and other aspects of the political space. In some cases, the political figures are stand-ins and stereotypes that may represent undesirable change and a sense of threat. The study of physical “effigy” in social imagery from Google Images may shed some light on the state of global and transnational protest politics in real space and the practice of using physical protest effigies to publicize social messages, attract allies, change conversations in the macro political space, to foment social change.

Key Words

Physical Protest Effigy, Political Protest, Global Politics, Transnational Politics, Social Imageset

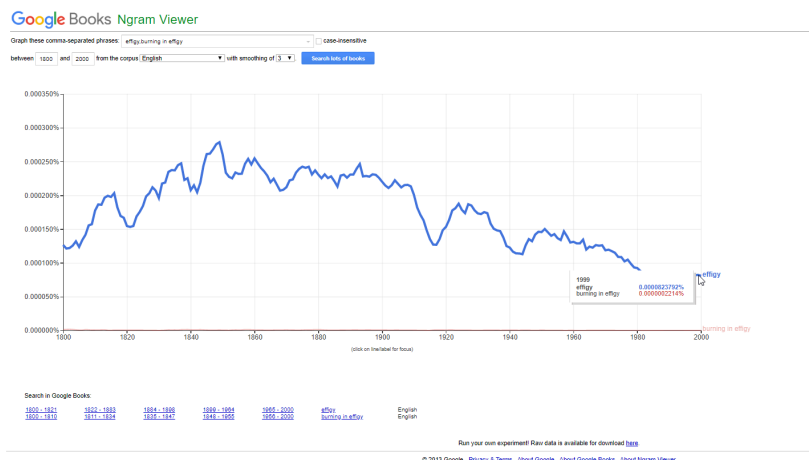


Introduction

Generally, an “effigy” is a model of a person, something created from the human form, “artfully” or not. In a political sense, it is “a roughly made model of a particular person, made in order to be damaged or destroyed as a protest or expression of anger” (“effigy,” 2019). In a pop culture sense, such as in video games, an effigy may be imbued with magical or other powers. On social media, there are a number of images of various physical effigies used in socio-political demonstrations, with public messaging. (These, while in digital form at the point of analysis, originated as physical objects, not digitally born ones.) The public-facing aspects of demonstrations mean that these are often captured in visuals shared on mass media sites and on social media ones.

Based on a social imageset of “effigies,” with the political set separated out from others (like photos of historical relics and effigy mounds, like pop-culture ones related to games and music), a number of questions were explored to better understand the uses of physical effigies in global and transnational protest and

demonstration. To be clear, “effigies” are used in various ways beyond the socio-political. In the Google Books Ngram Viewer, there are many more references to “effigies” than the other common use of “burning in effigy” phrase (often related to public demonstrations). (Figure 1) This search was done in books published in English from 1800 – 2000. Note that the “burning in effigy” is low on the x-axis. The first reference to “effigy” in English stems from 1539 and is thought to come from the Latin term “*effigies*” or representations (“Effigy,” Nov. 14, 2019).



The concept of “effigy” has been in long use in the scanned books of the Google Books Ngram Viewer, from at least the 1800s and earlier.

Figure 1: “effigy” and “burning in effigy” in the Google Books Ngram Viewer

In a historical sense, an effigy may refer to “recumbent” statues, “funerary art,” and other representations (“Effigy,” Nov. 14, 2019). In the political form, effigies “are damaged, destroyed or paraded in order to harm the person represented by magical means, or merely to mock or insult them or their memory,” with burning

in effigy also used for protest (“Effigy,” Nov. 14, 2019). An “effigy mound” refers to “a raised pile of earth built in the shape of a stylized animal, symbol, human, or other figure and generally containing one or more human burials” (“Effigy mound,” July 30, 2019).

In a theoretical work from the 1960s, one author describes an “effigy” as a human-created object made for other humans because of its representational value. He writes:

If pictures consisted only of canvas and colored pigments, paper and daubs, how could a few pencil scrawls, i.e., thinly dispersed deposits of graphite, change a sheet of paper into a drawing, a picture? If pictures are immaterial figurations, how is it that they can be seen? If they are material things, how can they stand for other things, and yet differ from the things they stand for? Pictures are artificial even when they are not artistic human productions. Only man is in a position to understand the pictures of his own making as effigies. For a dog or horse a photograph is something entirely neutral; for man, to the contrary, it is both a something of paper and an effigy which, according to the theme represented, can touch, move, or emotionally shake him. (Straus, 1965, p. 672)

The power of the effigy, in part, stems from its effect on other human viewers, who may be emotionally and cognitively affected. This work also suggests that reference objects, like photographs, can be used to represent a person in effigy, and the in-world uses of people’s photos (in publications and from other sources) have appeared as representations of the individual and / or the bureaucracy or industry that they are a part of. Drawings, illustrations, and cartoon depictions of people may also be human models and effigies and treated in particular ways based on the ideas of the artist, the visual editor, the publisher, and others who are in the chain-of-production for that visual.

In an applied sense, an effigy may be created to speak not only to supporters of the political effort but also those who are undecided and even those who are antagonistic. For some, there may be the sense of the added power of ceremonial objects, something with historic shamanic evocations. However, in general, contemporary effigies in the West seem to be more about direct action for social change than trying to harness magic. (In other parts of the world, the tie to folk magic practices remain, as referenced later.) Protest effigies tend to be generally separated from the underlying word referent in a historical sense.

Exploratory research questions

The research questions surround the various personages depicted, what the effigies say about the demonstrators' shared identities, the physical materials used in the construct of protest effigies, the various types of attacks (and other non-aggressive actions) on protest effigies, some political dialogues occurring around protest effigies currently, and global and transnational issues that are animating for people. The questions are the following:

1. Real-Life Personages

- Which global leaders and other personages attract the most lightning rod sorts of attention? Why?
- What are the most common personal attacks in persons represented in protest effigies? How is their dignity attacked? Their personhood? How are political leaders punished for their stances and representation contrary to the desires of the dissenters?
- How are political effigies styled? What messages does the styling evoke?

2. About Demonstrators

- Who is being appealed to with the physical effigies and

political messaging? What value is being offered in the particular collective groups, and why? Who is being left out in the messaging, and why? (If blame is being apportioned, who is being blamed?)

- How does the effigy help create the identity of the demonstrators, who stand against the effigy as other / or who stand with the effigy as the same?

3. Physical Materials for the Construct of Protest Effigies

- What are the most common analog materials used to create effigies?
- How are protest effigies presented in physical space?
- How are physical protest effigies presented in social digital spaces in two-dimensional imagery?
- How are effigies re-used transnationally (if any)?
- How do still social imagery of political effigies compare to social videos available (on YouTube)?

4. Actual and Symbolic Treatment on the Protest Effigies

- What are some common ways that protest effigies are attacked? Verbally? Physically? And others?
- What are some non-aggressive ways in which protest effigies are treated?

5. Political Dialogue and Protest Effigies

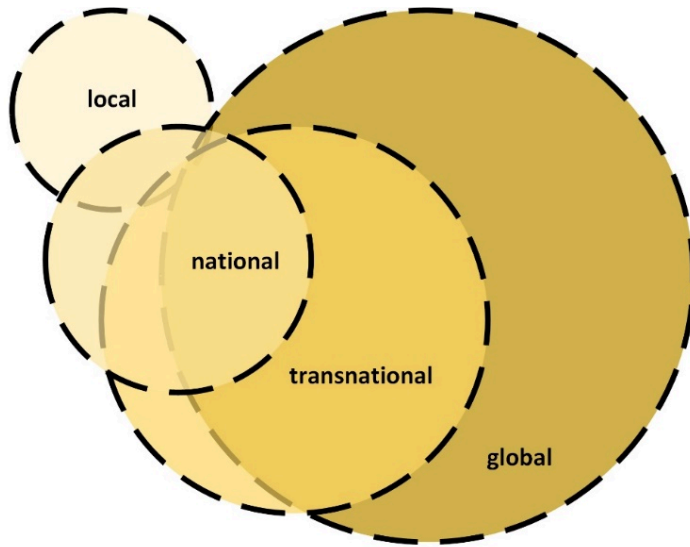
- How are protest effigies a part of political dialogue?
- Based on the proliferation of social imagery on formal mass media and on informal social media, what sorts of power do contemporaneous political effigies evoke? How?
- Do contemporaneous modern-day effigies have ties to prior ones, used culturally and ritually? What are some senses of the magical uses of effigies to call up magical powers?

6. Global and Transnational Issues

- According to reverse imagery searches online, in a global sense, what are the main issues being protested in political effigy through social imagery?
- What parts of the world are the locales of the most political effigy-based expression in social imagery? Why might these be so?
- How do various governments respond to political effigies, and why? (In some countries, public protests are precluded by law, and demonstrators put themselves at great risk of harm when they engage in such activities.)

Physical demonstrations, based in physical space, may be local issues. On mass media and social media, they may find resonance on the national, transnational, and global levels. The broad reach of social media, the WWW, and the Internet enable potentially global-scale interest in local issues. (Figure 2) People are at once local, national, and global citizens; in other sense, they may be members of transnational memberships (such as for professional organizations, non-governmental organizations, and others). This broad reach requires people to act responsibly as global citizens in terms of messaging (Panetta, 2015), particularly around issues where there are high emotions (such as around senses of injustice and contravention of global values) and calls for action (messages that can activate people's behaviors). Even though issues may be local, they may spark far outsized responses through mass communications and social media technologies. Mass empathies may inform message resonance as people engage with each other in disembodied and borderless ways. As such, physical effigies enable meaning making across cultures with their pseudo-embodied messaging, by depicting persons who stand-in for particular values and practices and policies. The influential role of the human imagination makes distant issues seem locally relevant. In a smaller world, interconnected by

trade, treaties, travel, intercommunications, what happens in one space may well extend to others.



Local, National, Transnational, and Global Resonances with Political Communications including Physical Effigies

This visual shows overlapping circles of how local political physical effigies in demonstrations can have national, transnational, and global resonance.

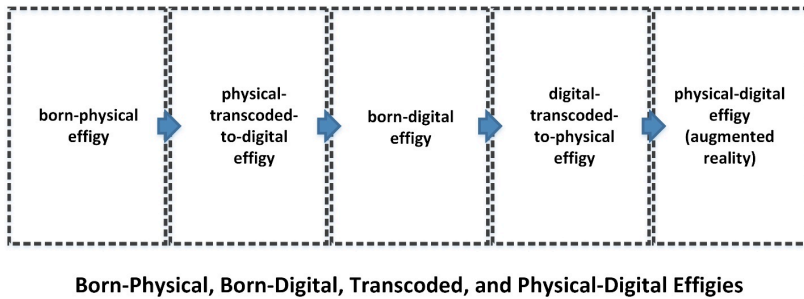
Figure 2: Local, National, Transnational, and Global Resonances with Political Communications including Physical Effigies

Effigies stand in as “proxies for real bodies” and may appear in “Internet memes, political cartoons, mainstream media, social media posts and material culture” (Schrift, 2016, p. 290). The materiality of protest effigies differ. From mass media coverage, they have been made of papier-mâché, rubber, plastic, paper-and-sticks, cloth, straw, wood, and other combinations of com-

mon materials. These depictions may be in three-dimensions or two-dimensions. Some may be human depictions painted in murals on walls. Others may be parts of art installations. Others may be integrated with street performances. Some are strung up with strings and can be made to move, such as nodding a head or waving or making certain bodily motions. Physical effigies appear in various incarnations, as persons, as animals, as inanimate objects, and others. (An example of an inanimate physical protest effigy has been a Trojan Horse, used to indicate a sense of threat to the population, through deception and hiding and malicious gifting.) The power of effigies, in part, is in their ability to reference some phenomenon in the real.

In digital space, effigies have been created from various digitalia: realia like photos, virtual reality avatars, social media accounts (of late historical figures), and others. In a user-generated social video series about international relations and politics, GZero World has a “Puppet Regime” humor segment that uses puppets of world leaders (physical effigies) to share social-political insights via social video (transformed to digital effigies).

This process of socio-political influence can often start with broadcast (one-to-many) strategic messaging and received messaging with individual and group sense-making and sense of personal relevance. This work involves the study of “physical-transcoded-to-digital effigy” category (Figure 3).



Effigies may come in various cyber-physical forms.

Figure 3: Born-Physical, Born-Digital, Transcoded, and Physical-Digital Effigies

This work is an early one, with a limited set of just over 1,000 social images (from Google Images), coded manually by the researcher. This nascent work does offer a novel approach to a topic with implications for both (local) micro and cross-border mass movements.

Review of the Literature

A basic definition of an “effigy” is “a representation of a specific person in the form of sculpture or some other three-dimensional medium” (“Effigy,” Nov. 14, 2019). Common “synonyms” for “effigy” include “statue, statuette, carving, sculpture, graven image, model, dummy, figure, figurine, guy, likeness, representation, image, bust, head,” according to the Oxford English dictionary online. In their usage as part of social protest, effigies have been an inherent part of political expression for hundreds of years from the colonial days (Peterson, 2015, p. 509) and through the present. Across the pond, “the use of an effigy personifying injustice in social protests...can be traced back to agrarian protests during nineteenth century England and Wales at least, when it was customary to use a ritual framework, ‘the ritual of

justice', involving the substitution device of an effigy and the release mechanisms of laughter, insults, and even the destruction of the effigy (Seal, 1988, as cited in Liao, 2010, p. 39).

As to those of different roles who have been documented as having been represented in effigy, they include committee chairs, corporate executives, a university president (Slonecker, 2006), on the lower profile ends of the spectrum, to national-level leaders (prime ministers, presidents, and others), global leaders, and others on the higher-profile ends. It does seem like represented personages have to attain a certain threshold of renown, to be targeted. In some historical demonstrations, effigies represented particular social groups or classes, like "bankers" (Liao, 2010, p. 40). Some effigial representations are of brand characters (McLeod, 1995), who are seen to represent the corporation. In other words, some effigies may be imagined characters. One visual showed a cartoon character, Bart Simpson, as a hanging and burning effigy.

For the Anonymous movement, the Guy Fawkes mask (effigy) is used not only to shield member faces but to suggest a brand identity of the "hero-avenger V" from *V for Vendetta* (both the book and the movie) (Ravetto-Biagioli, 2013, p. 186). In some cases, persons represented in effigy are a main focus of the particular demonstrations; in others, they are backgrounded and not even named directly. Persons may be depicted but in de-individualized ways "seen as opposing particularity" (Roosvall, 2014, p. 61).

In many senses, those who wield large amounts of power may garner the attention of detractors, so the reality of being depicted in effigy should not be derogatory in and of itself. A majority of political effigies seem to represent "the chief public enemy defined by the protesters" (Liao, 2010, p. 39), but this is not always the case. Some demonstrations have several effigies of focus. Some effigies are used in demonstrators in support of what the effigy represents (or is depicted as representing). One example in the image set was of a representation of the Pontiff,

an exemplar around whom demonstrators rallied in support. There were photos built around an effigy of St. Mary, also an object of veneration at that demonstration. Another demonstration depicted a person seen to have been abused by the security services (Radwan, 2014, p. 62) as a hero. Prior rulers whose legacies are negative are ridiculed (Radwan, 2014, p. 63). In another, supporters of a political leader included effigial representations of a “rape accuser” who was seen to stand against a political leader (Robins, 2014, p. 109). Such depictions are very much context sensitive and seen through the subjective prisms of the demonstrators. Others depicted have been people seen as martyrs to a cause (Radwan, 2014, p. 63). A visual resemblance of an individual, as in a photorealistic likeness, is related to personal identity (Pentzold, Sommer, Meier, & Fraas, 2016), and this extends to lower-fidelity depictions. Some of the “dummies” are portrayed with “grotesque aesthetics” (Göttke, 2015, p. 129), in part to evoke “performed images of violent death” (Göttke, 2015, p. 129).

Practically, such demonstrations may enable people may make social change by garnering the attention of those in power. One author describes historical practices:

The distinction between embedded and detached collective identities corresponds approximately to the difference between local contention and national social movement politics in early nineteenth-century Europe, when a major shift toward the national arena was transforming popular politics (Tarrow 1994; Traugott 1995). In such forms of chain-making interaction as shaming ceremonies (e.g., donkeying, Rough Music), grain seizures, and burning of effigies, people generally deployed collective identities corresponding closely to those that prevailed in routine social life: householder, carpenter, neighbor, and so on. We can designate these forms of interaction as *parochial* and *particularistic*, since they ordinarily occurred within localized webs of social relations,

incorporating practices and understandings peculiar to those localized webs. They also took a *patronized* form, relying on appeals to privileged intermediaries for intercession with more distant authorities. (Tilly, 1999, pp. 265 – 266)

How the demonstrators treat the effigy is part of the messaging. Some effigies are used to highlight social tensions and bring them to the awareness of the broader public. Others are to emphasize the disaffection in stronger terms. As part of dissent, demonstrators engage in “burning in effigy” and “hanging” in effigy based on “conventions of various traditional rituals and social practices (Göttke, 2015, p. 129). Toppling an effigy is another common practice, often applied to representations of “strongmen” leaders (Kraidy, Winter/Spring 2017, p. 1). Recently, an effigy of a U.S. president was stabbed during a demonstration. An effigy is not just used in representation but in a sense of destruction of the target individual and what he or she represents (in the same way as a “voodoo doll” defined as “an effigy into which pins are inserted” (Armitage, 2015), with the intention of causing “physical harm” on witches and breaking related spells (Hutton, 1999, as cited in “Voodoo doll,” Jan. 6, 2020). Sometimes, effigies are used in hate crimes (such as hanging effigies and nooses), with an inherent sense of threat (Rouse, 2012). In some cases, the destruction of the effigy is part of a ritual of “purification that mark the end of the old year and the beginning of the new and which exist all over Europe, in countries with a Hindu culture, and in many former European colonies” and which apply to the replacement of one political regime to another (Göttke, 2015, p. 132). Effigies used in protest may be engaged in “playful, symbolic strategies” alongside “more serious, discursive ones, and, of course, more violent ones” (Göttke, 2015, p. 142). The moods around effigy use may vary.

To understand the power of the proxy representation of the person, it helps to understand the human veneration of the dead. The dead are remembered with “a skeleton effigy or calaca” in

celebratory remembrances of the dead (Ulmer & Freeman, 2018, p. 98). Dead bodies themselves have symbolic potency “due to their sacred and cosmic associations” (Anderson, 2006, as cited in Schrift, 2016, p. 281). In death, the bodies of “political leaders” are seen to reflect “national identity, social symmetry and culturally embedded understandings of death, funerary ritual and the afterlife” (Schrift, 2016, p. 281); many lie in state for the paying of respect and are worshiped and commemorated. Others who are less popular have their gravesites desecrated and their memory impugned publicly and privately.

Political posters with images of respective politicians may be treated as effigies, with those who engage in “counterpropaganda interventions” in an “I deface you” movement marking on the respective posters and easels in lead-ups to elections (Corrêa & Salgado, 2016, p. 129). In Brazil in 2010, this “*Sujo sua cara*” movement was started as “a response to the annoyance caused by the material illegally displayed on the streets” (Corrêa & Salgado, 2016, p. 129), with participants posting images of defaced posters posted on a social image sharing site, with paint covering up identities, verbiage written over the posters, gender switching, the drawing of a dollar sign on a forehead and devil horns on the head, and others. On the original posters are layers of additional meanings as a counterpoint. The co-researchers point to the role of social media in amplifying the message(s):

It is important to note that the defacement of electoral material occurred on the streets, but the ‘I deface you’ phenomenon was strengthened and gained meaning as a form of protest by organizing and sharing the images and the repercussion on social media. A single defaced easel on the street holds less meaning than when it is photographed and included alongside several others on social media accounts that give names and meaning to this phenomenon that, at first glance, appears to be a simple joke. (Corrêa & Salgado, 2016, p 142)

Such actions may suggest “disbelief in representative democracy” through “contemporary discursive practices” (Corrêa & Salgado, 2016, p 143). The initial messaging of political engagement may be usurped and appropriated into one of dissent, *ad infinitum*.

An earlier work described the defacing of political campaign posters in Kabul, Afghanistan, in the 2009 presidential elections. This event involved facial “mutilation” and was seen as “the handiwork of Islamist-tribal symbolic code, Islamic iconoclasm, and sympathetic magic” resulting in the shaming and dishonoring of the candidates “through the violence of defacement” (Whalen, 2012, p. 541). In this context, the human face “has been synonymous with honor and purity” (Whalen, 2012, p. 544), and their harm (such as through acid attacks and nose-cutting) redounds back to the individual in many cultures (Whalen, 2012, p. 545). The images from this context show posters of facial slashings, people with eyes gouged, bloodied heads, and removed facial parts like noses. The visual depictions convey the senses of frustration and hostility. Such depictions may, in some minds, be thought to affect the real world beyond the messaging of discontent.

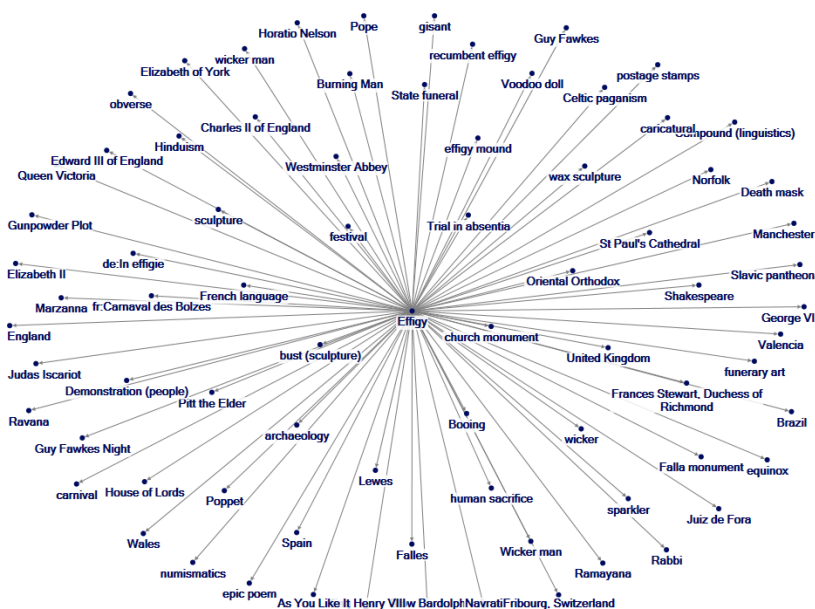
Transcultural psychological phenomena (termed “sympathetic magic”) “impels the projection of power onto inanimate objects such as photographs, campaign posters, statues, effigies and images of sacred, powerful or venerated people whose deeds have been perceived as profane” (Perlmutter, 2011, as cited in Whalen, 2012, p. 544). One researcher describes the “Law of Similarity” trope applied to effigies, in which “an effigy or likeness of a person is used to mediate actions and effects that the magician and practitioner wish to visit on the real person in the social and material world” such as through voodoo dolls from Haitian traditions (Roberts, 2014, p. 13).

The personhood of the protest effigy represents certain policies and historical periods, among other things. They may also evoke something of so-called “identity politics” which pit certain peo-

ple groups against others and minority groups against majority ones. One definition is that identity politics involves “struggles for justice and the right to maintain or cultivate group uniqueness by minoritarian groups in majoritarian contexts” and is “associated with postcolonial, post-Cold War and post-9/11 times” (Roosvall, 2014, p. 55). How groups around an effigy treat that effigy speak to their enacted sense of collective identity: they are showing their values by how they treat the effigy (whether in terms of the effigy as “other” or as “self”).

Some effigies are held in reverence by worshipers and are borne on shoulders. Some include effigies of religious figures; some involve religious iconography, like crosses and holy garb and books.

On social media, an “effigy” is related to both historical and present-day practice. In an article-article network of outlinks from the “effigy” article (<https://en.wikipedia.org/wiki/Effigy>) on the crowd-sourced encyclopedia site Wikipedia, there are ties to various materials and events and social practices. (Figure 4)



This network graph shows a 1-degree article-article network of "Effigy" on Wikipedia to outlinked articles.

Figure 4: “Effigy” Article-Article Network on Wikipedia (1 deg.)

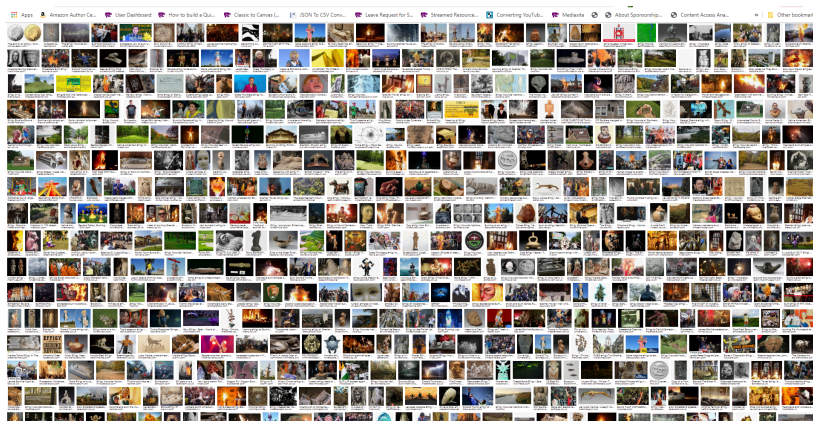
In a related tags network around the term “effigy” applied to social visuals on Flickr, three clusters of meaning may be identified:

Group 1: an anthropological, archaeological, and historical sense

Group 2: a modernist collective sense, such as around the Burning Man event

Group 3: practices within Great Britain (Figure 5)

removed as being non-political ones, such as historical artifacts (stone statues, stone reliefs, carvings, and others), effigy mounds, and advertisements for products (pesticides, musical events, musical albums, a digital game). The remaining set contained 1,011 images. (Figure 6) Of these, 33 items were born-digital protest effigy representations and the rest physical ones rendered in digital format. [On Second Life™, a virtual immersive world, some of the effigies are labeled, such as “soul effigy” and “prayer effigy,” and one a jeweled one, and these seem to harken back to magical objects, not socio-political ones.] One was an animated gif showing digital fire consuming a particular effigy.



This screenshot shows some of the “effigy” social imagery from Google Images...as mini-thumbnails.

Figure 6: Some of the Imagery in the “Effigy” Visual Effigy Image-set from Google Images

In the imageset, there are items that range from pins and dolls to large posters hung from buildings and bridges. The messaging is overly-simplified, with upvotes or downvotes on particular issues. Politicians are over-simplified into caricatures and often depicted in demeaning ways. Some leaders are shown with people wearing jail garb dancing around them, standing in for the company the leaders apparently keep. Even with rough features

defined, the faces are strangely recognizable, whether it is the wincing face of President Donald J. Trump with dramatic eyebrows and an expressive mouth...or Greta Thunberg with her signature braid...or a political figure as Judas Iscariot, embodiment of a traitor. Some effigies are human-sized stand-up cardboard figures, created from photos. Some public figures are not necessarily recognizable, if not for captions or signs... (A “Sarah Palin effigy burned on bonfire” is one example.)

Some effigies were pinatas, that were duly being smashed with a stick. Indeed, the images show effigies being beheaded, defaced, bashed, shot (a giant head with a bullet hole in its depicted forehead), and even praying for an assassin (based on holding a sign asking for that outcome). Some of the demonstrations involved prayer and the burning of incense. Some involved the burning of candles.

A set of questions were created to explore the imageset. These are set up in six general categories.

1. Real-Life Personages

- Which global leaders and other personages attract the most lightning rod sorts of attention? Why?
- What are the most common personal attacks in persons represented in protest effigies? How is their dignity attacked? Their personhood? How are political leaders punished for their stances and representation contrary to the desires of the dissenters?
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- What are some non-aggressive ways in which protest effigies are treated?

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- How are protest effigies a part of political dialogue?
- Based on the proliferation of social imagery on formal mass media and on informal social media, what sorts of power do contemporaneous political effigies evoke? How?
- Do contemporaneous modern-day effigies have ties to prior ones, used culturally and ritually? What are some senses of the magical uses of effigies to call up magical powers?

6. Global and Transnational Issues

- According to reverse imagery searches online, in a global sense, what are the main issues being protested in political effigy through social imagery?
- What parts of the world are the locales of the most political effigy-based expression in social imagery? Why might these be so?
- How do various governments respond to political effigies, and why? (In some countries, public protests are precluded by law, and demonstrators put themselves at great risk of harm when they engage in such activities.)

Global leaders. The global leader who appeared in a majority of the images were U.S. President Donald J. Trump, mostly in opposition to him and his cabinet's policies. Anti-Trump protests show him as militaristic and grubbing, holding weapons and bags of money, with four arms positioned as a swastika. (Online, this was referred to a "Trump-Hitler statue." A number of British leaders also featured in the visuals: Theresa May, John Bercow, Jeremy Corbin, and Boris Johnson. Queen Elizabeth II appeared in a few. Several related images showed a bicycle racing phenom selling his racing bicycle ("Armstrong Guy"), given the sense of his "villainy" for drug-use. This is an expression against his lack of fair play. One leader was compared with "Judas" and labeled as such as a "betrayers." Young environmental activist Greta Thunberg's visage appeared in some of the photos of this "effigy" set, often as a photo or in person. A cube with the faces of Hitler and other leaders was burned amongst a large crowd, with the message on the top of the cube reading, "NEVER AGAIN."

Global and transnational issues. A number of effigies related to "Brexit," the vote by Britain to leave the European Union. One politician was depicted draped in the country's flag with his buttocks showing. Another effigy showed a politician with the message of "FU to the EU." Competing politicians were depicted in a visual holding the heads of the competing politicians. In another,

a prime minister was depicted as having a Pinocchio nose (to indicate deception and lying) with “Brexit” written on it. The #metoo movement (an anti-sexual harassment movement primarily on behalf of women but extended also to general populations) was represented with an effigy of Hollywood mogul Harvey Weinstein holding an Oscar. One effigy showed anti-Semitism in the beating of an effigy representing Judas (as a Jewish individual) as part of an Easter celebration in Poland (“Polish church condemns beating of Jewish effigy in Poland,” Apr. 22, 2019).

About demonstrators. The respective demonstrators are seen to have stances on particular issues: anti-Trump, pro- or anti-Brexit, anti-doping in bicycle racing, and others.

Physical materials. The physical materials used in the images include the common materials like paper, wood, foil, and others. There was also the use of various balloon materials, plastics, rubber, and others.

In terms of depictions on social video, “effigy” brought up various music videos...some historical artifact ones...and then videos of protest effigies burning. These did not add much to the research in this framework.

Treatment of protest effigies. The various effigies were shown in photos being put together and raised up...but also being taken down, burned, stepped on, and otherwise attacked, abused, and destroyed.

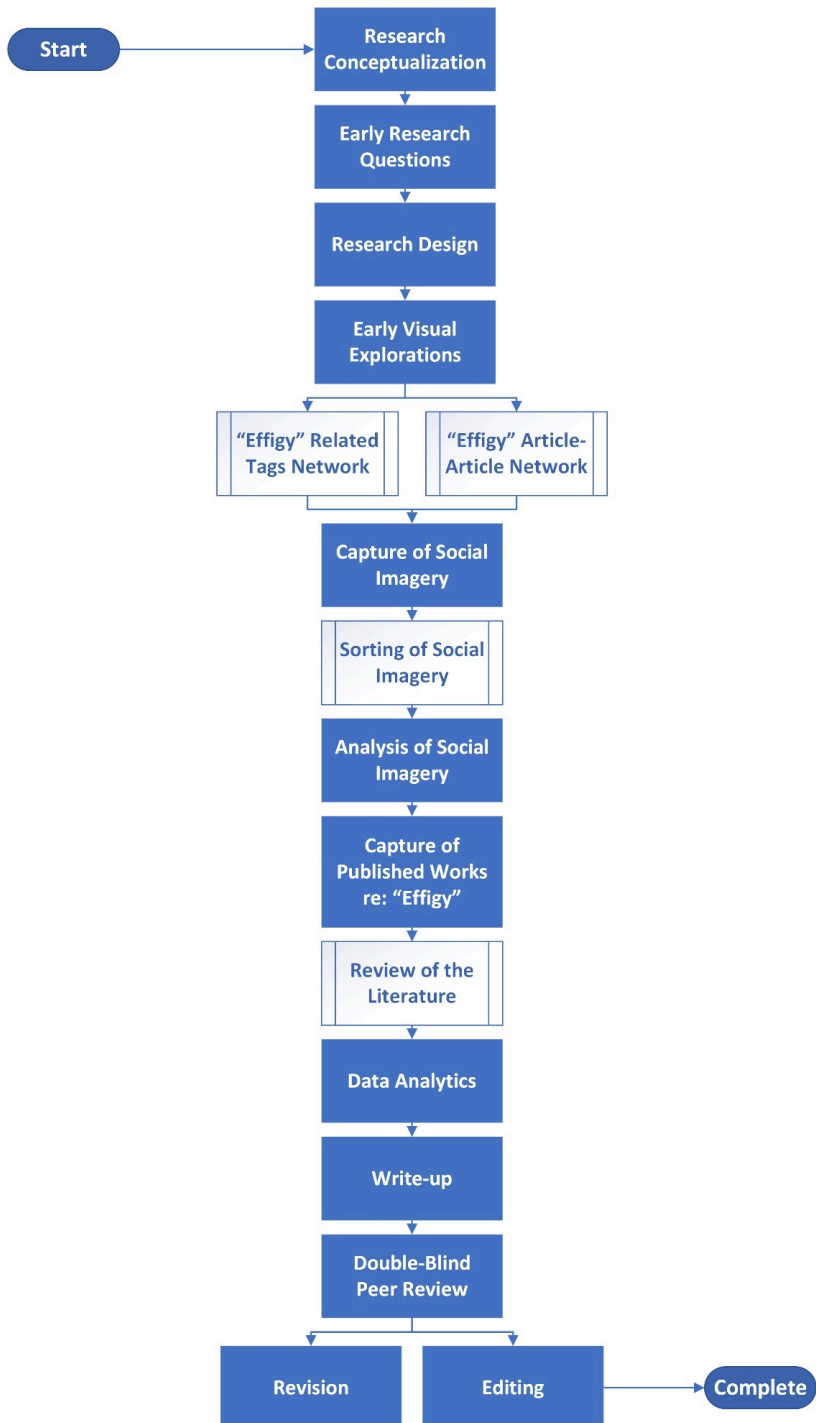
Political dialogue and protest effigies. In the visuals, the protest effigies are a center of attention. Those who would address the crowd are sometimes standing next to the representational effigies about their cause. As for whether the demonstrators were trying to evoke magic, the visuals did not evoke that vibe.

Global and transnational issues. Given the decontextualization of the images, various efforts were made to understand the con-

text of the usage of the respective protest effigies. The image name, reverse image searches, and Google searches were all used to better understand selected images. In the reverse image searches, invariably, the images linked back to both mass media coverage and social media postings. [The free web-facing TinEye was used, which compared the uploaded images against some 38.6 billion images. The URL for TinEye is <https://www.tin-eye.com/>.] Not all images are easily understandable from the visual alone. One image of children standing next to an effigy lying face down on a pavement was about the lack of vaccination of airline crews for a particular country and the sense of risk from that oversight. Even with TinEye searches, a number of visuals were not found in their databases and remained a mystery. Some of the images were found to be local events, without particular national, transnational, or global relevance.

This analysis suggested that many of the main issues of the time—U.S. President Donald J. Trump’s nationalism (and other policies), Brexit, and environmentalism—were central focuses of demonstrations with local, national, transnational, and global implications. (Some visuals could be found with a simple Google search by what was visually depicted, without the need for an actual reverse image search.)

In many ways, the target research questions were only partially answered. This could be based in part on the fact that the image-set did not include all possible images. To summarize, this research was conducted as follows: research conceptualization, early research questions, research design, early visual explorations, capture of social imagery, analysis of social imagery, captured published works re: effigy, data analytics, write-up, double-blind peer review, revision and editing (Figure 7).



This diagram shows the research and work workflow of this project.

Figure 7: Workflow of the “Visual Protest Effigies in Global and Transnational Politics” Research Project

Various types of street art and performance art have been harnessed to capture widespread attention to particular issues and political stances. The “guerrilla design” and “guerrilla art” approaches have been used to protest particular organizing systems, like capitalism (Bigat, 2012, p. 1028). Effigies that are harnessed for such social spectacles and socio-political performances tend to look rough and uneven.

Discussion

Representing issues in human effigy has been parts of human practice for many years. In the modern era, it is not particularly fair for targeted individuals to have their reputations tarnished in effigy. After all, in any number of controversial issues, there will be a range of opinions in a population, including extreme ones. Effigies depict something of how a group depicts an individual as representation of policy or practice; they depict something of how people view themselves in relation to that individual and represented issue (at both group and individual levels). Expressing through effigies is about the other, the policies, and the self, in a particular time and place.

A deeper “root origin” or “root cause” for the protests and effigies may include any or some combination of the following:

- Perhaps there is a conflict of understandings of the world and lived narratives.
- Perhaps there is a struggle over rights.
- Perhaps there is a struggle over resources.
- Perhaps there are differences in desired futures and

what different current policies or near-future policies may affect the future.

- Perhaps there are not clear understandings of complexities and tradeoffs around particular policy issues.
- Perhaps there are personal dislikes in how public figures are conveyed to the public.
- Perhaps there is a sense of personal offense to values and sense of self and senses of history in present-day actions.

In a lived sense, there are many reasons why people may choose to protest and to portray an issue in the form of another person or object or context. There is something “co-embodied” in person/persons-effigy/effigies relationships as expressed in protests, through shared spaces, through adversarial or aligned depicted relationships, in flames, in violence, in reverence. From a distance, it is possible to make erroneous inferences of public figures which go un-challenged; it is possible to cast aspersions on other people’s reputations even with insufficient evidence.

Finally, this work is descriptive, not prescriptive, in terms of visual effigies. Its focus has been on social imagery depicting various effigies used in public demonstrations for a variety of purposes.

Future Research Directions

Physical protest effigies, as *dramatis personae* in acted political dramas on the world stage, are never the only element in political messaging and activism. They are part of a larger campaign. They may appear in more than one march (like the infamous gas-filled “Trump baby” balloon). Effigies are used in various ways to express dissension against some policies and platforms and persons and support for others. While the messaging of the effigy is inherently vague [with “the suspension of fixed meaning” (Götke, 2015, p. 142)], the message is often complemented and fine-

tuned in manifestos, websites, social media messaging, flyers, and other communications. The semiotics of political expression include various signs and symbols: banners, icons, visuals, slogans, sound snippets, physical objects (with tactual features), and other elements. There may be a range of political action events: educational teach-ins, online signature collections, fund-raising events, voter drives, walking tours and street marches, speeches, performance art, mock trials, re-enactments, film showings, strikes, boycotts, hunger strikes, mass demonstrations to provoke police actions, and sometimes, actions that escalate to violence. Researchers may also want to explore how effigies are used to construct public awareness and discourse, engage in political change-making, and advance particular agendas and stump others. The methods of orchestration would be of public interest.

In some ways, expression through protest effigies is about a lack of direct power, requiring a need to go to indirect power (through proxy actions). And yet, there is something about the power of free speech (often tied to democratic citizen power) to express ideas that may be disagreeable to those in power. Such communicative actions seem to be both potentially cathartic (releasing tensions and dissipating potential for future actions) and reinforcing (rallying power and energy for future actions). From the psychological angle, there may be something of spite and *schadenfreude* in the mistreatment of human-based effigies, suggesting that people may derive pleasure from another's misfortune, even if it is in figurative representation. Here, too, a person is treated as shorthand for social disagreement, and the individual is treated as a single-dimension personality, without the capability of reconsideration of stances. Their depiction offers a way of "calling out" living public individuals and their supporters (and evoking legacies of those who have passed on).

How effective are these protest and advocacy effigies in attracting allies, maintaining supporter loyalty, affecting larger dis-

courses, and ultimately affecting social change? Effigy-based performances are “ineffective in delivering a straightforward message, and on its own, inept at effecting lasting political change” (Göttke, 2015, p. 143), so what do these actually accomplish for the polity and the political system? What are physical political effigy features that make for effective persuasion (in the particular social context and time)? Are there some universal observations that may be made about effigies used in social-political protests? Which are the voices that are amplified through effigy-based performances, and why? Are such protests about the release of social tensions at the concentration of power held by a few (based on how humans socially organize), or is it about the need for entertainment and meaning, or what combination of human interests and needs? (The global nature of the uses of effigies in public demonstrations suggests something of social learning—people learning from others by observation and emulation—and maybe something of inherency in people.)

Figure 3 pointed to born-physical, physical-transcoded-to-digital, born-digital, and digital-transcoded-to-physical effigy categories. There is room to study various types of effigies in various forms beyond what was studied in this work (physical-transcoded-to-digital effigies). In this work, this researcher came across born-digital effigies for various political expression (given the ease of “Photoshopping” images from online sources). [One study examined some manipulated images of Donald Trump from social media to understand born-digital effigies based on original photos but usurped for political statements and resistance. Some of the names that the author has applied to the images provide a sense of the “manipulations,” a term applied by the author (Kharel, n.d., p. 1): “Small Trump with Melania,” “Obama Carrying Trump,” “Putin with Tiny Trump,” “Tiny Trump Signing Executive Orders,” “Trump as a Bride in a Fake Time Cover and the Original Magazine Cover,” “Theresa May Holding Hands with Trump,” “Face Swap of Trump and Theresa May,” “Trump as Elizabeth II,” “Trump with Kate Middleton,”

"Queen and Kate Middleton (Original)," "Outline of Trump's Iconic Hairstyle," "Bald Trump," "Trump's Hair Wave and a Surfer," "Trump's Hair and Corn Silk," "Trump's Hair and Horse Tail," "Trump and Putin Camping," "Trump and Putin in Leather Jacket," "Putin and Trump in (sic) the Same Horse," "Putin and Trump Go Hunting," "Baby Trump Sculpture to Protest Greenpeace in Hamburg," "Baby Trump Vinyl Sculpture,"..."Trump's Tshirt and Mis-Quotes Button," "Trump's Pen, and others (Kharel, n.d., pp. 4-5). Many such "meta-manipulations" are about diminishing the person and what he is seen to represent. The author describes "meta-manipulations" as a "reference to what satirists call meta-humor, meta-joke, or meta-caricature" with a focus on the "manipulation of the already manipulated images" (Kharel, n.d., pp. 83 – 84) and the assumption of endlessly recursive manipulations possible.] [As a side note, with the divisiveness of people either pro-Trump or anti-Trump, many of the kitschy toys and shirts may be created not by any true believers one way or another but entrepreneurial individuals who see an opportunity to earn some money in a DIY age.] Then, too, there are a number of non-human political effigies that stand in for various practices and ideas. These would be of interest for further study.

Certainly, various case-based approaches may be taken to analyze the roles of effigies used in political expression. Who are the demonstrators? What political (and personal) messages are being communicated in the demonstrations? How is the effigy used? How is it depicted? What parts of the individual persona is picked up on in the simplified public messaging? How efficacious was the demonstration? These and other questions may be addressed, for example.

Language is seen as a "basic component of a political effigy" as the instantiation of the political self of the living politician (Zimny & Żukiewicz, 2010, pp. 311 – 312). The role of language in the creation of protest effigies would be promising as well.

On social media, there are various types of messaging in relation to protest effigies. People may be seen with selfies of themselves as they make faces and gestures, next to a protest effigy or in front of one. Some are taken in physical locations. Some are mock-ups using photo editing in layers. Others are created with chromakeying (green screens). Online is very much a local-to-global public square, and pursuing such research may also be engaging. The effigies serve expressive needs and instrumental ones. For the first, they are messages of protest and political change and moral high ground; for the latter, they are objects around which people may gather for collective interests and change promotion.

Conclusion

If the Internet, WWW, and social media have enabled the broad global public to be “woke” to social justice issues, understanding how these various issues are brought to light through various social intercommunications may enhance the work. In this space, physical effigies captured in social imagery may indicate something of the physical-cyber confluence and the extension of voices between the analog and the digital.

Whereas common citizens have a legal right to their own likenesses (in every way that they manifest—physical, visual, voice, and other) and privacy, public figures often have fewer privacy protections because their lives are seen as “newsworthy” and somewhat belonging to the public. There is a public interest over the lives and thinking and health and actions of various public figures, in a sense. This distinction means that mass media can cover newsworthy public figures in ways that are not seen as trespassing of a private individual. This also means that their likenesses may end up with starring roles in social demonstrations, or their likenesses may make cameos in social imagery. Mass folk narratives of the powerful involve stories of self-dealing, corruption, venality, and error, and in many cases, these

are not wholly baseless. Public figures have to make peace with the need to have a thick skin; they must be able to dissociate from others' external representations of themselves, even in the absence of any firsthand knowledge. They have to see effigies as characters' (villains and heroes) in others' plays of political theater and social commentary. These are pseudo-surrogates or substitutes for an embodiment of policy; they represent the passive recipients of crowd anger or frustration or lack of understanding or other factors. [Indeed, a light monitoring of general engagement with politicians can show a willingness to take quotes out of context, to misrepresent meanings, to misattribute, to cast aspersions on others, and to engage in character assassination. From the outside and from a distance, it can be hard to understand another person, much less mind-read. And yet, that is not uncommon practice for many. The "fundamental attribution error" involves people's tendency "to under-emphasize situational explanations for an individual's observed behavior while over-emphasizing dispositional and personality-based explanations for their behavior" ("Fundamental attribution error," Mar. 14, 2020). This human tendency, at population scale, can result in major distortions of leader intentions and personalities. Sometimes, these are expressed in effigies, which are then destroyed as part of the theatrical public discourse.]

In some (more extreme) cases, the crowds erroneously ascribe intentionality; they engage in straw man debates (debunking a supposed—but fallacious—argument or stance or action by the target individual). The reputations of public individuals have an impact on their public lives and their formal and informal roles, particularly in democracies. The concept of "mob rule" alludes to the fast, first-impressions, and almost unthinking approaches of some crowds set afire by rumors and impressions and self-righteousness. The public has important roles in self-governance in democracies, and by design, there are many channels through which they can communicate their senses of the world, including the physical public square and the physical streets, for demon-

strating and marching publicly. These offer ways to communicate ideas to political leaders, and they serve as a social tension relief valve (a cathartic socio-psychological function), in some cases, and inducements to further actions in others (a reinforcement socio-psychological function).

In this work, the author engaged the so-called “general readability of images” (Göttke, 2015, p. 131). The visual analysis of physical protest effigies represented in digital social imagery (photos in this case) shared on social imagery platforms show something of political massmind in terms of issues of concern. These visuals shed light on local issues with some traction at the national, transnational, and global levels. These also show that protest effigies have a place in the human iconography of protest.

In the era of Deepfakes (from “deep learning” and “fake”), the ability to create videos of individuals talking to the camera based on the use of artificial intelligence on existing video and audio files, how will digital protest effigies manifest? Will the politics of personal destruction continue, motivated by dissatisfaction and anger?

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Key Terms

Deepfakes: The use of another person's visual and auditory likeness in a video by using various artificial intelligence (like artificial neural networks)

Dramatis Personae: A character in a drama

Effigy: A physical representation of a person

Global Political Protests: Political expression for change around the world

Social Imagery: User-generated images shared on a social image sharing site

Transnational Political Protests: Political expression for change across national boundaries, internationally

Visual Protest Effigy: A visual depiction of a person or entity or object as part of political expression (as in the context of a demonstrations)

6

EXPLORING THE TRANSNATIONAL ALLURE OF "STREET DEMOCRACY" VIA TWITTER BASED ON A CONTEMPORANEOUS REAL-WORLD CASE

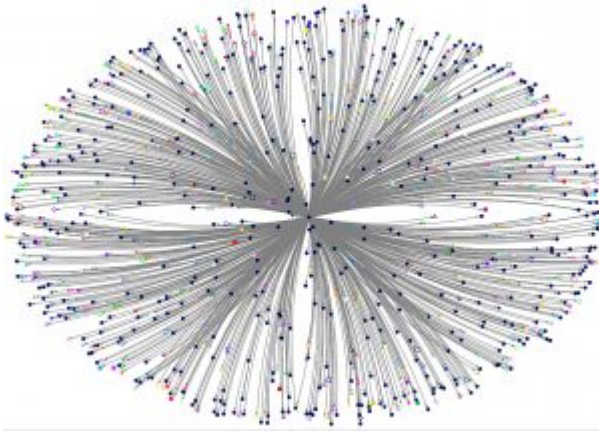
Shalin Hai-Jew

Abstract

In the popular massmind, “democracy” seems to mean different things to different people. For some, it is something worth fighting, and demonstrating and dying for. For others, they cannot be bothered to engage in the minimal civil duties of staying informed and voting. This chapter involves the study of 16 contemporaneous social media accounts that were surfaced in a search for “Hong Kong protests” on the Twitter microblogging site to understand expresses senses of “street democracy”. The resulting Tweets were analyzed for topical content, sentiment, and meaning, using a combination of human close reading and computational text analysis (in NVivo 12 Plus). What do the popular senses of “street democracy” around the pro-democracy Hong Kong protests on the Twitter microblogging site suggest about (1) its meanings to the demonstrators, and then what are some of the implications to (2) strategic and tactical international or external “democratic promotion” in the U.S. context abroad generally and towards Hong Kong specifically?

Key Words

Street Democracy, External Democratic Promotion, International Democratic Promotion, Hong Kong Protests 2019, Anti-Extradition Movement, Twitter Microblogging Platform



Introduction

From March 2019 through the present, initially tens of thousands but later hundreds of thousands of protesters amassed in Hong Kong to make various political demands of both their government and that of the simultaneously remote and close-in government of Beijing. This former British colony returned to China on July 1, 1997, under a “one country, two systems” concept, with a fair amount of relative autonomy for this capitalist enclave, partially to protect its various affordances as a center of global finance and trade. The mass demonstrations were sparked by a proposed extradition law for those accused of serious crimes in Hong Kong to be tried in mainland China. The “Fugitive Offenders and Mutual Legal Assistance in Criminal Matters Legislation (Amendment) Bill 2019” was thought by many to enable Beijing to quash political dissent in Hong Kong (2019 Hong Kong Extradition Bill, Oct. 23, 2019). The ostensible original case for this proposed legislation was that of 19-year-old Chan Tong-kai, accused of murdering his pregnant girlfriend Poon Hiu-wing in Taiwan and then fleeing to Hong Kong in February 2018 (Tan, Oct. 24, 2019; 2019 Hong Kong Extradition Bill, Oct. 23, 2019).

Initial demands were for the withdrawal of the proposed legislation. The bill was suspended June 15, 2019. Over time, five additional demands were made by this alleged “leaderless” movement (more so with anonymized leaders): “complete withdrawal of the extradition bill from the legislative process” (achieved October 23, 2019); retraction of the “riot” label on the demonstrations; “release and exoneration of arrested protesters”; “establishment of an independent commission of inquiry into police conduct and use of force during the protests”; and the “resignation of Carrie Lam and the implementation of universal suffrage for Legislative Council and Chief Executive elections” (2019 Hong Kong Protests, Oct. 24, 2019). Given the various levers of power and the political realities, each of the five points entail varying levels of practical difficulties. Whatever decisions are made will set some precedence and expectations for future actions. While police have used force, including causing a blinding of one demonstrator in one eye and shooting a protestor with live ammunition, there has been no major mass-death crackdown (as there was on June 3- 4, 1989 in the Tiananmen Square Massacre in Beijing, by the Chinese government’s military). While journalists may be writing an early or first draft of history, this work is focused on a much lesser element of the protests. Other accounts suggest a longer history of Hong Kong advocacy for democratic rights, going back from the early 1950s (Democratic development in Hong Kong, Oct. 23, 2019), when this “fragrant harbor” was still a British colony of linked islands and peninsulas. Some online reports suggest how to support Hong Kong citizens “in their defense of democratic values” (“Democratic crisis in Hong Kong: Recommendations for policymakers,” 2019). Hong Kong is seen to have experienced a decade of democratic declines and “deteriorating human rights conditions” through 2019 (“Democratic crisis in Hong Kong: Recommendations for policymakers,” 2019, p. 3). As yet, no final outcome has been determined except for a formal retraction of the original proposed legislation.

At the heart of the movement are calls for more democracy and

human rights. "Democracy" has some baseline meanings in the political science literature, including "a form of government in which all constituents are able to participate by standing for election to public office and electing others to represent their interests" and includes "the right to challenge and/or call to account an existing government for actions that violate public trust" (Shirazi, Ngwenyama, & Morawczynski, 2010, p. 22). In a democracy, citizens have access to accurate information, from their government and from a powerful free press, so citizens may be sufficiently informed for accurate decision-making. In another sense, democracy is "a framework that seeks to resolve conflicts in society via consensus on core principles that limit the power of government and empower citizens" (Ariely, April 2015, p. 629). A "root meaning" of democracy is that power is held by "ordinary people" (or "government by the people") (Alexander & Welzel, Apr. 2011, p. 271). Core elements of a basic democracy include (free and fair) "elections and political liberties" (Carothers, 2009, p. 5). Civil rights protect individuals against government oppression, and they ensure equal rights among people regardless of their gender (Ariely, April 2015, p. 633) and other factors. Democracy is seen as "a system of processing conflicts in which outcomes depend on what participants do, but no single force controls what occurs and its outcomes" (Democracy, Oct. 23, 2019). Here, power is not in the hands of individuals but more in process and in laws. In some cases, democracy is packaged also with the "free market". A crowd-sourced encyclopedia reads: "No consensus exists on how to define democracy, but legal equality, political freedom and rule of law have been identified as important characteristics." (Democracy, Oct. 23, 2019)

If democracy is aspirational, how it is actualized and operationalized matters to its citizenry. Within countries, there may be differing senses of how well the democratic government is functioning (Ariely, April 2015, pp. 632 – 633). In the popular massmind, there may be varying understandings of "street democracy" in a public and folk sense. The protests are widely

understood as anti-government ones—adversarial, occasionally violent, and a direct challenge to the legitimacy and limits of the governments of Hong Kong and the People's Republic of China. Widespread images of the demonstrations show the waving of various flags, including American ones. While a number of social media applications have been linked to the protests, the Twitter microblogging platform is an important part, with some participants using it for broadcasting on-ground information to news sources and others around the world and narrowcasting among smaller groups. The communications here are both strategic and tactical. They enable mediated situational awareness and a sense of immediacy.

The research questions involve multiple parts:

What do the popular senses of “street democracy” around the pro-democracy Hong Kong protests on the Twitter microblogging site suggest about (1) its meanings to the demonstrators, and then what are some of the implications to (2) strategic and tactical international or external “democratic promotion” in the U.S. context abroad generally and towards Hong Kong specifically?

The software used to extract the information was NVivo 12 Plus, and more specifically, the NCapture web app. NodeXL was also used along with Excel for some data captures and data visualizations. Online tools used include Wikipedia, Google Books Ngram Viewer, Flickr, and other sources.

Review of the Literature

Historically, democracy has been “a deeply contested concept” (Kurki, 2010, p. 362) and unpopular “with both political leaders and philosophers” but in the 20th century become “the world’s new universal religion” (Corcoran, 1983, p. 14, as cited in Kurki, 2010, p. 362). For many, democracy has “ideational dominance”

as a desired form of governance. It carries the promise of both individual and group-level actualization (enabled by a non-interventionist non-intrusive government): full human self-expression, full human voice, and individualistic self-determination. Democracy is a form of what Walter James Shepard calls a “verbal stereotype,” a concept that is unthinkingly positive:

It arouses at once a favorable reaction in the popular mind. It is surrounded with an aura of sanctity. It immediately suggests the glorious achievement of independence by the American patriots of 1776. It calls forth visions of heroes such as Jefferson and Lincoln. It evokes as its antithesis concepts of despotism, of dictatorship, of absolute monarchy. To be a democrat is to be on the side of angels...It has constituted a basic faith which has oriented our thought and action in every direction. It has been the religion by which we have lived and for which we have been willing to die. To question the sacred principle of democracy has been to lay a profane hand upon the Ark of the Covenant. (Shepard, July 1935, p. 94)

With the widespread adoption of information and communications technology (ICT), citizens have experienced “rising aspirations, discontent with government, mistrust of government, and political apathy” and so put pressure on governments to improve their services (Lee-Geiller & Lee, 2019, p. 208). Advancing democracy is about increasing efficiencies in the provision of government services, with open and informational transparency, service quality, and the encouragement of citizen engagement (“collaboration, deliberation, political efficacy”) (Lee-Geiller & Lee, 2019, p. 221). The presence of “mobile telephones, SMS, and the Internet” also directly affect political activity (Shirazi, Ngwenyama, & Morawczynski, 2010, p. 21).

“...various states and international organizations, the United States, the European Union, and the UN” have advocated for democracy’s spread around the world (Kurki, 2010, p. 362).

"External" and "international" democracy promotion refers to various endeavors to transition autocratic states to ones where the power is shared among the citizens. One researcher writes:

Democratization is a broad, irregular process of replacing authoritarian regimes with rule-bound competitive political systems. It is not a universal historical sequence. Many countries mix major elements of undemocratic and democratic practice. (Goldsmith, Fall 2008, p. 124)

"Democratization" necessarily depends "on the relations between domestic elites and the demos" (the common populace) (Beichelt, 2012, p. 4). External democracy promotion involves the support and promotion of democracy in other countries, involving support for a free press, support for voter rights, support for safe voting, fair voting (such as through international observers), selective election boycotts, promotion of the rule of law, promotion of civil rights, protection of various minorities, protection of populations against genocide, educational efforts, financial aid, technical aid, and other endeavors. "Strategic incumbents" who strive to retain power in non-democratic spaces may use various manipulations to forestall free and fair elections, such as engaging in a variety of strategic manipulations with intimidation, tampering with voter lists, releasing disinformation, deploying covert surveillance, and boycotting opposition parties (Beaulieu & Hyde, 2009, p. 401).

It is thought that some cultures are more amenable to democracy than others. Some aspects are historically and politically contingent: "Former British colonies were considerably more democratic than other countries immediately following independence, but subsequent democratic convergence has largely eliminated these differences in the post-Cold War period." (Lee & Paine, 2019, p. 487) It is generally thought that societies may be in various states of readiness for transitioning from autocracy to democracy or to deepen democracy, depending on the readiness

of the population, the social pluralism in society ["a large and diverse civil society" with cultural diversity (Bunce, Winter 2008, p. 25)], "stable state borders" (Bunce, Winter 2008, p. 25), the state of development (Feng & Zak, April 1999, p. 162) and the economy, and the state of the extant government (and its anti-democracy efforts), among others. Some have found that hearts and minds of a citizenry are less important than having working democratic institutions first in order to earn the confidence of the populace. Legitimacy attitudes towards democracy "are significantly shaped by the prior institutionalization of democracy" (Fails & Pierce, Mar. 2010, p. 174). Reaching into another society to promote a form of government is an exercise in power (Wolff, 2015), with the attendant moral and other implications. (A common accusation is that Western powers are engaging in "imperialism" and a misuse of "hegemonic power" in "interfering" in another sovereign nation's politics. This is a framing of one of the counter-narratives.) Others have argued for the importance of understanding "the preferences of the target publics" (Obama, 2006, pp. 315 – 317, as cited in Kurki, 2010, p. 363). The motives and end goals for democratic promotion are also relevant (Wolff & Wurm, 2011, p. 79).

Coercively insisting on democracy may be counter-productive and unaligned with democratic principles (Goldsmith, Fall 2008, p. 147). Also, nation-states are in flux, and "democratic backsliding" may also occur in some cases...and democratic institutionalization in others. Democracy, as all forms of government, is revocable. There are different brands of international democracy promotion, like an "EU" type or an "American" type, depending on leadership, policies, resourcing, bureaucratic elements, and other factors. As an incentive to democratic reforms to neighboring countries, the EU has offered "partnership and cooperation," something short of membership which has many strictures (Schimmelfennig & Scholtz, 2008, p. 187); EU leaders apply "political conditionality" to engagement (p. 190).

Modernization theory is interpreted by some to suggest that at a particular point in development, a country may convert to democracy. One authoring team writes, "With sufficient growth, nondemocratic governments almost always become democracies..." albeit with "significant variation across countries" (Feng & Zak, April 1999, p. 162). One model suggests that "the level of per capita income, education, the distribution of wealth, and the strength of preferences for political rights and civil liberties" are critical factors in this democratic transition (Feng & Zak, April 1999, p. 162). Democracy is thought to arise from "all sorts of conditions" (Munck, 2015, p. 97). Globalization itself, with the encouragement of transnational interactions, is also thought to promote democracy. Transnational relations between governmental and non-governmental actors and other exchanges (cultural, academic) are seen to promote democratization (Schimmelfennig & Scholtz, 2008, pp. 192 – 193).

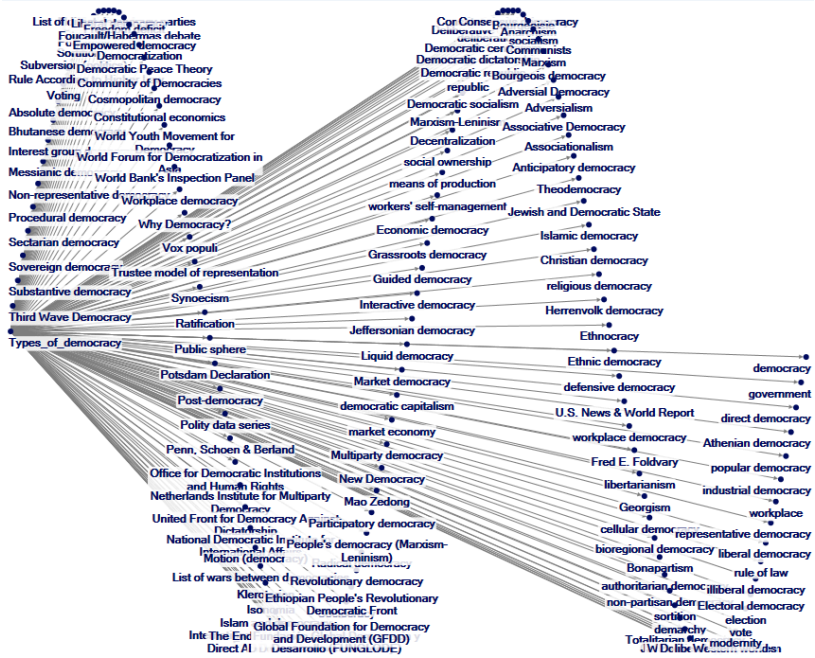
However the transition works, the European Union as a group of nations, the U.S., and Western powers have all engaged in democratic promotion to help processes along. Having fellow democratic societies may reduce the costs of transactions because of some level of built in trust (Lektzian & Souva, Feb. 2001) and international cooperation. The EU's uses of functional cooperation and integration with EU regulations is seen to create a "ring of friends" (Freyburg & Lavenex, 2018, p. 1) and expand the EU's sphere of influence. A named strategy of the EU has been to expand its influence for its own political stability.

An "illiberal democracy" (or a "partial democracy") may be a transitional state towards democracy or some other form of governance ("Illiberal democracy," Oct. 13, 2019); a "liberal democracy" (or a "Western democracy") is a more mature-state government with many of the bureaucratic elements that enable democratic civil freedoms for citizens and "universal suffrage" which allows all to vote ("Liberal democracy," Oct. 23, 2019). There is a "big tent" approach in its definition:

A liberal democracy may take various constitutional forms as it may be a constitutional monarchy (such as Australia, Belgium, Canada, Denmark, Japan, Netherlands, Norway, Spain and the United Kingdom) or a republic (such as France, Germany, India, Italy, Ireland and the United States). It may have a parliamentary system (such as Australia, Canada, Germany, India, Israel, Ireland, Italy and the United Kingdom), a presidential system (such as Indonesia and the United States) or a semi-presidential system (such as France and Romania). ("Liberal democracy," Oct. 23, 2019).

In the "hybrid zone" of partial democracies, between autocracy and "fully effective democracy," the "ineffective" democracies fail to enforce the "rule of law" (Alexander & Welzel, Apr. 2011, p. 271). Democracy is not an overnight achievement but thought to advance in a gradual manner, with differing degrees of human rights granted depending on the state of that democracy (Alexander & Welzel, Apr. 2011, p. 273). Others have observed mixed political systems, with "semi-democratic" political systems (Goldsmith, Fall 2008, p. 124).

There are various conceptualizations of types of democracy, based on "a pluralism of governing structures" and differing "values" and instantiations in "time, space, and language" (Types of democracy, Oct. 23, 2019). There are different stages of democracies. Several thousand adjectives have been applied to the term "democracy" (Types of democracy, Oct. 23, 2019). Some of the diversities of democracies may be seen in the article-article network around "Types_of_democracy" on Wikipedia (Figure 1). As a side note, one uncited source suggests that there is "Confucian democracy," and other works suggest "democracy with Chinese characteristics." Terms can be defined in various ways.



This graph shows an article-article network from the “Types_of_democracy” article in Wikipedia.

Figure 1: “Types_of_democracy” Article-Article Network of Out-links at One Degree on Wikipedia (horizontal sine wave)

Various components of a society may inform about the state of democracy in a particular polity. Freedom House, an organizational advocate for democracy, points to democratic norms, including “elections, term limits for executives, freedom of expression, rights of migrants, safety of expatriates, and (protection of peoples against) ethnic cleansing” (“Freedom in the World 2019: Democracy in Retreat,” 2019). The idea of the depth of democracy may be more complex than a “tick the boxes” approach based on predefined elements “in democracy promoters’ guidance documents” (Kurki, 2010, p. 380).

Journalism plays an important role in a democracy. In one direction, journalism enables a populace to be informed; in the other,

journalism enables people's voices to be heard "in the chambers of power" ("A new journalism for democracy...", Feb 1, 2005). One important role of journalists in a democracy is to explain the reasons for protest for deeper understandings among the larger populace and polity (Myers, Jan. 2019). One risk is to have insufficient diversity to inform the judgment of what should be covered as news (Myers, Jan. 2019). Independent journalism helps mitigate some of the risks of having to depend on "political insiders for content" and from "the drive to attract an audience" (Schudson, Spring 2013). If journalism focuses on the wrong issues ("sideshows"), such distractions may be negative for democratic rule (Myers, Jan. 2019). Journalistic stewardship should be "loosely defined, decentralized, multiform, and open to invention" (Schudson, Spring 2013). By definition, in a democracy (and elsewhere), there are inherent tensions between the press and elected officials.

Social media enable citizen journalists to report from their respective local spaces about any number of issues but without the professional overlay of editorial oversight, fact checking, and other resources. A new phenomenon of "democratic journalism" enables the voting up or voting down of stories on social news sharing sites and discussion boards ("Democratic journalism," Dec. 26, 2018), infusing a sense of populism into news consumption. The effectiveness of such votes depends in part on the wisdom of the crowd and their sophistication as news consumers.

In answer to the question of whether "international democracy promotion" works, one researcher offers a complex equivocation: it depends on "how we define democracy promotion and its objectives, and on which particular approaches, methods or tools...used to promote democracy" (Burnell, 2007, p. iv).

Practical benefits to democracy

For all the romanticized senses of democracy, there are empirical reasons for the advocacy of democracy as governance. Natural

resource-rich countries, “more vulnerable to rent-seeking behavior,” tends to better protect those resources against corruption when they are democracies (Neudorfer, 2018, p. 175). Democratic institutions, along with “cultural values of nonviolence and equality,” has been found to lead to lower homicide rates and violent crime (Piccone, Sept. 2017, p. 1). [“Strong autocracies” also tend to have lower homicide rates (Piccone, Sept. 2017, p. 1).] Democracies offer mechanisms for people to achieve “social compromise” around contentious issues (Zhen, 2006, p. 1).

In a democracy, citizens are expected to engage in their civic duties, and their contributions stand to benefit the polity, including:

- (a) the construction of citizenship, (b) the strengthening of practices of participation, (c) the strengthening of responsive and accountable states, and (d) the development of inclusive and cohesive societies. (Gaventa & Barrett, 2012, p. 2399)

On the down side, some of the freedoms of democratic societies enable some advancing of hate agendas under the guise of free speech (Weinrib, 1991).

Generally, liberal-democracy was seen as the winning dominant organizing governance approach post-Cold War, with the fall of the Berlin Wall (November 1991) and the dissolution of the former Soviet Union (December 1991). the “liberal-democracy promotion agenda” is seen as an extension of the George W. Bush era, post 9/11 (Hobson, Oct. – Dec. 2009, p. 384). Researchers have studied the “transatlantic divide over democracy promotion,” with EU members suspicious that the U.S. is using such endeavors as cover for U.S. military action. One researcher writes:

In his January 2005 inaugural speech, President George W. Bush placed democracy promotion at the

center of his second-term agenda. Yet, with no budget or strategy offered in the days or weeks that followed, Europeans grew increasingly cynical. Given the shifting rationales for the war in Iraq emanating from the White House, it would be understandable if European leaders and the broader European public remained highly suspicious of democracy promotion, interpreting it as a repackaged commitment to the unilateral use of force as well as justification for a war and occupation that were not going as smoothly as expected. (Kopstein, 2006, p. 85)

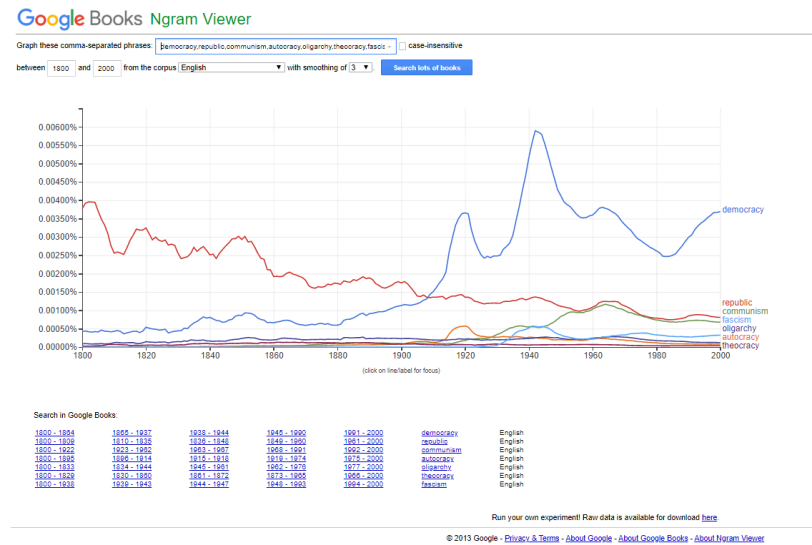
While there is agreement on democracy promotion, the methods for its advent are a focus (Kopstein, 2006, p. 86). In a complex world, efforts towards promoting democracy may involve blow-back and unintended effects and may be inefficacious. There may be paradoxical effects of democracy promotion that may end up strengthening authoritarian governance (Durac & Cavatorta, 2009). Researchers explore various policy interventions to better understand the effects. In terms of "norm entrepreneurship" and international democratic promotion as a form of foreign policy, various researchers have penned policy papers, policy brochures, and working papers about how to most effectively promote democracy abroad. Some approaches involve working through target countries' "transnationally-oriented elites" to bring about political change towards democracy. The in-between phases may be risky to international security (Goldsmith, Fall 2008, p. 120). Transitional phases from autocracy to democracy may involve periods of political instability and devolutions to violence.

Aid-dependent states are thought to be influenced from within more than without in terms of democracy transitions. Further, there may be unintended consequences by external development donors, with empirical observations that "the incorporation of donors' formal and informal institutions into the supported political system, and the dense interaction between donors and

local actors during democracy promotion, are likely to undermine democratization in aid-dependent states” (Leininger, Mar. 2010, p. 63). Nation-states experience leering about receiving Western aid because of the sense that they may come with strings attached (Carothers, Mar. – Apr. 2006). There are different flavors of democracy promotion based on the particular states and contexts (Jonavicius, March 2008). Some efforts of democracy promotion are achieved through the guise of international education (Saltman, 2006). One summary approach suggests the following methods: by “coercion, conditionality, persuasion, socialization” at the macro level based on case analysis (Beichelt, 2012, p. 1).

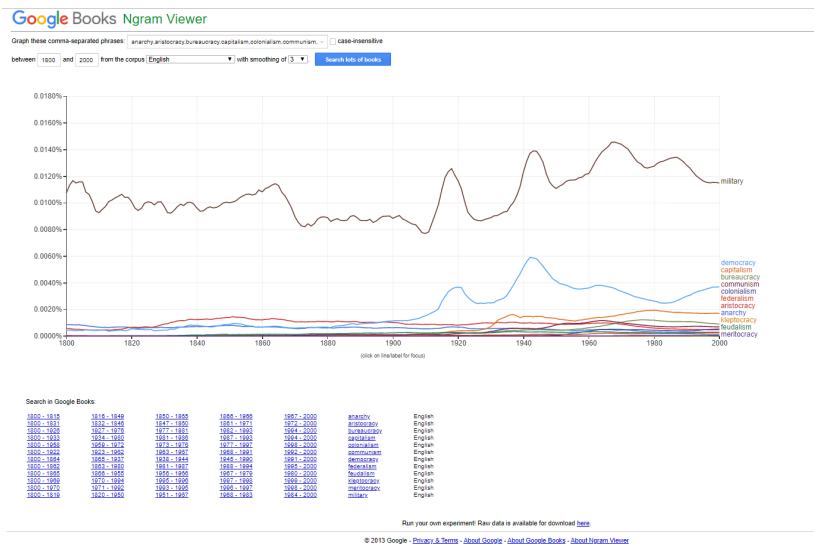
Exploring the Transnational Allure of “Street Democracy” via Twitter based on a Contemporaneous Real-world Case

Social media offer some insights on what “street democracy” may look like. On Google’s Search engine, the autocomplete for “democratic” involves the following topics (in descending order): “republic, leadership, deficit, society, peace theory, party, process, governance, transition, (and) leadership style.” In the Google Books Ngram Viewer, “democracy” is the most popular of the other common types of governance (Figures 2 and 3). In the first figure, it ranks highest among a search in a mass digital / digitized book corpora among “democracy, republic, communism, autocracy, oligarchy, theocracy, (and) fascism” and in the latter, among “anarchy, aristocracy, bureaucracy, capitalism, colonialism, communism, democracy, federalism, feudalism, kleptocracy, meritocracy, military, dictatorship, monarchy, oligarchy, plutocracy, republicanism, socialism, theocracy, totalitarianism, tribalism” (but behind “military” which is not uniquely identified to a governance type in this query).



Google Books Ngram Viewer's graph shows various popularity of terms related to governance over time in the English corpus of books.

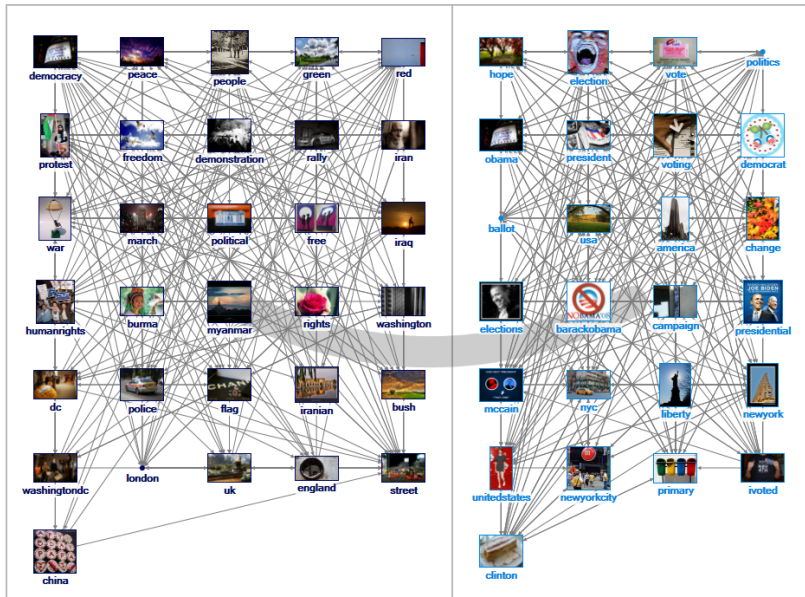
Figure 2: “democracy, republic, communism, fascism, oligarchy, autocracy, theocracy” Mentions over Time in Formal Published Books (Google Books Ngram Viewer)



This visual shows a range of types of governance mentioned over time in a mass book corpus in English.

Figure 3: “anarchy, aristocracy, bureaucracy, capitalism, colonialism, communism, democracy, federalism, feudalism, kleptocracy, meritocracy, military, dictatorship, monarchy, oligarchy, plutocracy, republicanism, socialism, theocracy, totalitarianism, tribalism” Mentions over Time in Formal Published Books (Google Books Ngram Viewer)

In a related tags network around social imagery, on Flickr, a “democracy” network at 1.5 degrees results in two groups of related tags. Group 1, the left block, shows references to target countries with long traditions of democracy and some with histories of democratic promotion. Group 2 involves an American focus. (Figure 4)



This network graph shows a related tags network related to the "democracy" tag for user-shared social imagery shared on Flickr.

Figure 4: "Democracy" Related Tags Network on Flickr (1.5 deg.)

Social accounts around "Hong Kong protests" on Twitter

In many ways, Hong Kong is an interesting ground zero for studying advances to democracy in an age of social media since it is an international city with its citizens abroad and many allies around the world. Twitter is a common space for its peoples given the commonality of English and Chinese as foremost languages, especially among the younger generations. While encrypted apps have been used in the demonstrations for coordination ("Mesh" and "Telegram," according to press reports), Twitter enables outreach to a worldwide audience. As such, it may be a useful platform to analyze the concept of democracy as a street or common public concept. The communications also provide a type of cover for action. For the demonstrators, the messag-

ing is that they are non-violent, peaceful, and righteous, in their requests. [For the Hong Kong police, it is that they are maintaining public order against rioters and ensuring the functioning of the city. For the Hong Kong government, it is that they are staying within the lines of law.] Will the demonstrations dwindle? Will a third-party mediate? Will Hong Kong government blink? Will Beijing step in? At the time of the writing, there is not yet a clear trajectory.

To conduct the research, 16 social accounts were identified in Twitter based on a search of "Hong Kong protests." Most of the accounts were live and focused on the issue of the 2019 protests. A few were from 2014 and reactivated for the 2019 protests. All of the microblogging data were captured on the same day, albeit in a rate-limited way, given the limits of the Twitter API (application programming interface). (Table 1 and Figure 5) Several seem focused around civil rights.

	Tweets	Following	Followers	Likes
#HKResist Fight for Hong Kong @Fight4HongKong https://twitter.com/ Fight4HongKong Hong Kong Joined June 2019	6,592	737	42,100+	2,326
antiELAB @anti_elab https://twitter.com/ anti_elab Hong Kong Joined June 2019	8,844	388	35,600+	653
Democracy for Hong Kong @Democracy4HK https://twitter.com/ DemocracyforHK United Kingdom Facebook.com/Democra- cyForHongKong Joined June 2019	888	538	6,202	388

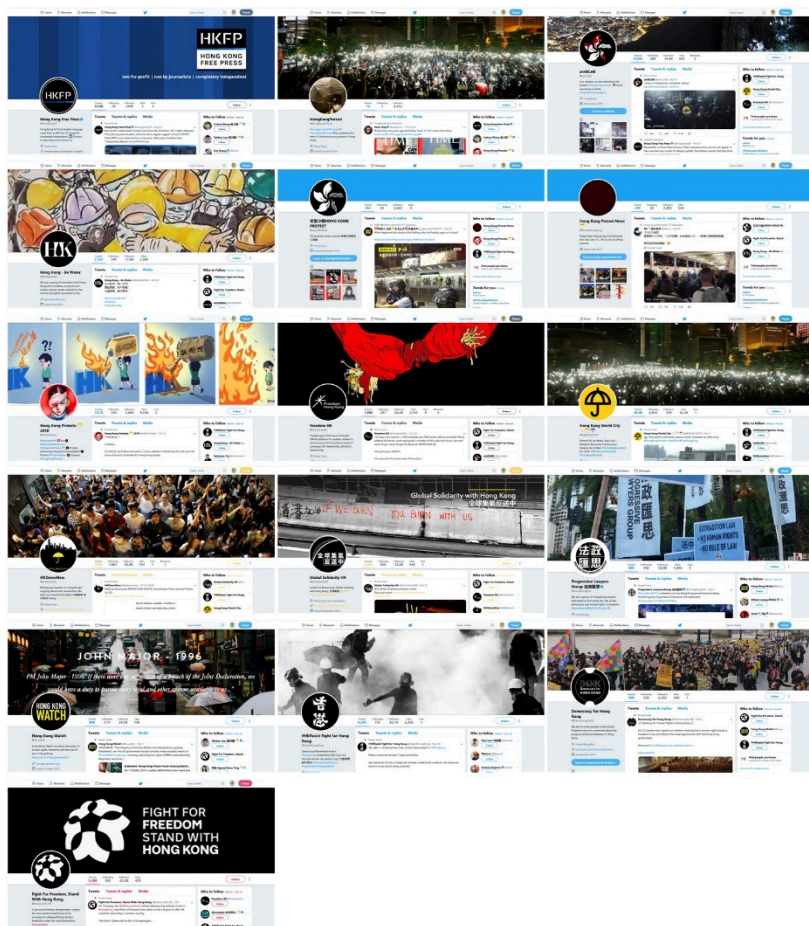
<p>Fight for Freedom, Stand for Hong Kong</p> <p>@Stand_with_HK</p> <p>https://twitter.com/Stand_with_HK</p> <p>Hong Kong</p> <p>Joined Nov. 2017</p>	1,284	182	63,200+	429
<p>Freedom Hong Kong</p> <p>@FreedomHKG</p> <p>https://twitter.com/FreedomHKG</p> <p>Hong Kong</p> <p>Joined June 2019</p>	1,890	297	68,600+	3,761
<p>Global Solidarity HK</p> <p>@GlobalSolidHK</p> <p>https://twitter.com/GlobalSolidHK</p> <p>Hong Kong and everywhere</p> <p>Joined Sept. 2014</p>	6,296	928	13,200+	446

<p>HK Demo Now</p> <p>@hk demonow</p> <p>https://twitter.com/hkdemonow</p> <p>Hong Kong</p> <p>facebook.com/HKDemoNow/timeline</p> <p>Joined Sept. 2014</p>	103,000+	1,961	16,400+	144
<p>HK Protestors Share Channel</p> <p>@wyy19668645</p> <p>https://twitter.com/wyy19668645</p> <p>Hong Kong</p> <p>Joined Dec. 2018</p>	167	25	2,622	9
<p>Hong Kong – Be Water</p> <p>(volunteers who curate media material for “current civil rights movement in HK”)</p> <p>@BeWaterHKG</p> <p>https://twitter.com/BeWaterHKG</p> <p>Joined July 2019</p>	3,152	184	17,600+	3,368

<p>Hong Kong Free Press</p> <p>@HongKongFP</p> <p>https://twitter.com/HongKongFP</p> <p>Hong Kong</p> <p>Joined Mar. 2015</p>	33,800+	29	231,000+	5
<p>Hong Kong Protest</p> <p>@HongKongProtest</p> <p>https://twitter.com/HongKongProtest</p> <p>Hong Kong</p> <p>Joined Oct. 2014</p>	16	7	8,452	N/A
<p>Hong Kong Protest News</p> <p>@ProtestHongKong</p> <p>https://twitter.com/ProtestHongKong</p> <p>Hong Kong</p> <p>Joined July 2019</p>	370	22	2,305	546
<p>Hong Kong Protests 2019</p> <p>@HKGProtests</p> <p>https://twitter.com/HKGProtests</p> <p>Feb. 2018</p>	10,700+	318	3,668	9,340

Hong Kong Watch @hk_watch https://twitter.com/hk_watch facebook.com/hongkongwatch1 Joined Oct. 2017	988	519	28,500+	136
Hong Kong World City @HKWORLDCITY https://twitter.com/HKWORLDCITY Hong Kong Joined Sept. 2014	36,400+	8,844	27,000+	12,400+
Progressive Lawyers Group @HongKongPLG https://twitter.com/HongKongPLG Hong Kong Joined May 2017	805	142	13,900+	1,846

Table 1: Selected Social Accounts from “Hong Kong Protests” Search



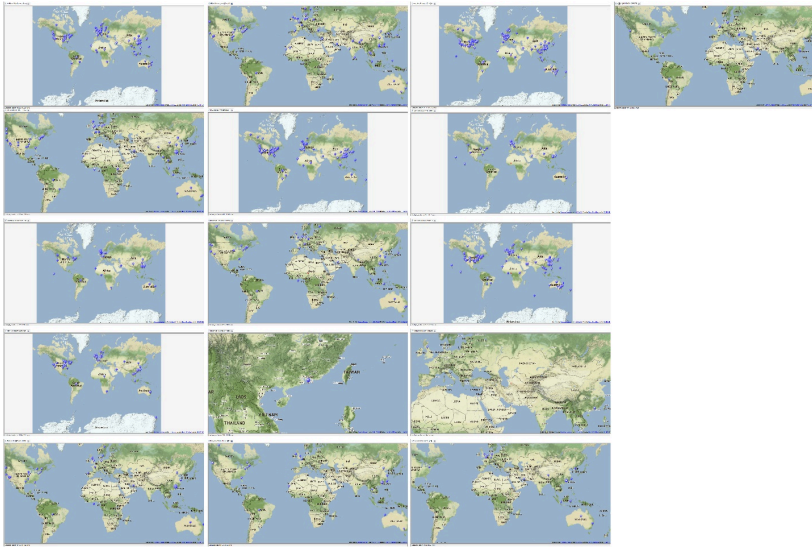
Landing Pages of Respective Twitter Accounts related to Hong Kong Democracy (Oct. 23, 2019)

This visual shows the landing pages of the various Twitter microblogging site accounts used in this study.

Figure 5: Landing Pages of Respective Twitter Accounts related to Hong Kong Democracy (Oct. 23, 2019)

The geographical maps of the various social networks surrounding the target social accounts show mostly global distributions of members except for two, which are zoomed into particular locales, which visually look to be Guangzhou in one and the East

Indian subcontinent in the other. (Figure 6) Given the mass and political power of the People's Republic of China, perhaps where Hong Kong goes, so goes other regions, which may explain the nervousness in response to Beijing's power and reach.



This visual shows the respective locational maps of the social networks of the respective Twitter accounts used in this study.

Figure 6: Locational Maps of Social Networks of Respective Twitter Accounts

A close-in reading of the microblogging messages shows a focus on various hashtag campaigns: #FightForFreedomStandWith-HongKong, #StandwithHK, #HongKongProtests, #DisbandHKPolice, #OccupyHongKong, #OccupyHK, #OpenFuture, #hkprotests, #FreeHongKong

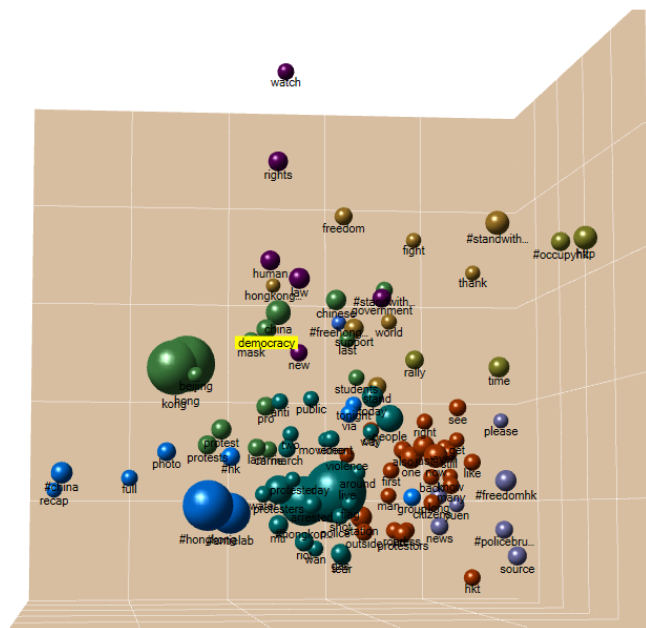
#antiELABhk (against the proposed extradition law), and #Free-

domHK. After the Hong Kong government made mask-wearing illegal, there were calls to fight that decision: #AntiMaskLaw. There are generic hashtag labels: #HK, #HongKong, #HongKongers, and #China. There are clear messages to fight “police abuses” and “escalating police brutality & retaliation.” There are messages to control against demonstrator actions which are undesirable, such as one calling out Chinese tourists who “destroyed Lennon Wall” and others decrying “property damage.” There are some accused of “a vicious attack” on demonstrators. One message clarifies that the demonstrations are not “a separatist movement.” Various URLs are shared pointing to articles and video hosted off of the microblogging platform.

In one message, another is encouraged to “speak freely.” There are also countervailing messages advising caution. One Tweet warns that the Internet could be shut off. (The subtext: Consider Plan B or C.) Another message cites a “fanatic” by name who “isn’t real...” (So there is a sense of there being persons who are sending out false messages in the social networks.)

Some communicators refer to promises enshrined in the time of handover of H.K. from the colonial power Britain back to China in 1997. “Beijing” is referred to in the context of “worrisome escalations” and “PLA tanks.” There is the threat of “disappearing dissidents.”

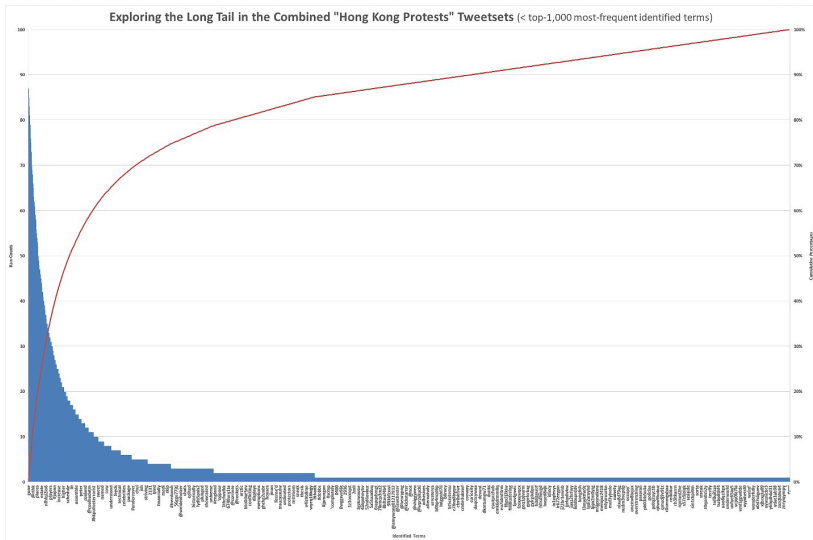
In terms of the autocoding of the main topics in the set, the main ideas include the following: police, https, protest, riot, riot police, chinese, gas, and law (with related sub-topics). (Figures 7 and 8)



This visual shows word frequencies of common terms in the combined Tweetstreams.

Figure 8: A 3D Cluster Chart based on Word Frequency from Tweetsets

Figure 9 shows the mapping the “long tail” in the Tweetsets showed some single-mentions of some topics.

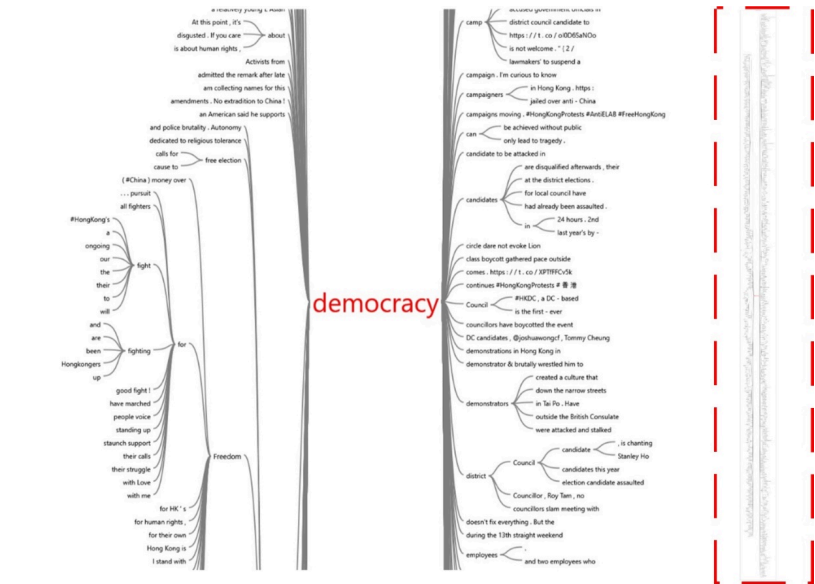


This visual shows topics that are discussed only once or twice in the Tweets...in a long tail in this Pareto chart.

Figure 9: Exploring the Long Tail in the Combined “Hong Kong Protests” Tweetsets (< top-1,000 most frequent identified terms)

An extraction of a “democracy” word tree, there are mentions of various tycoons either speaking up or not to support the demonstrators. One message highlights multiple international disagreements with Beijing, involving “Tibetans, Uyghurs and Falun Gong” (the third is a religious group with spinoff ideas around Buddhism). In the same Tweets as “democracy,” there are mentions of “civil liberties” and “American values.” There are arguments for “essential values.” The social accounts are used to list various persons arrested, those sent to various named hospitals, and others. There are inspiring quotes for famous people. In some, supporters are thanked. Some human rights lawyers are mentioned. Some crowd-funding opportunities are also mentioned. Some of the messaging reads to be racist references. Others respond that “intolerance is fugly” (“fuck ugly”), suggesting various pushback using social media terms. (Figure 10) In terms of the democracy word tree, some of the main #hashtag cam-

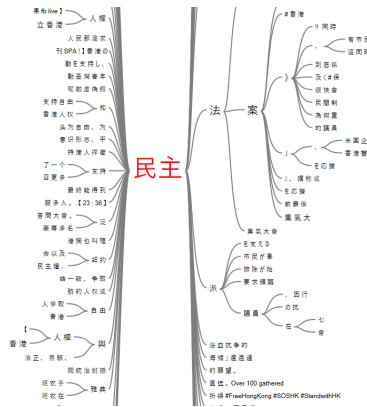
paings and topics may be seen. The “https” was added to the stop-words list.



A Zoomed-In View of the Democracy Word Tree from the Twitter Datasets (and a zoomed-out view to the right)

"Democracy" is highly referenced in the Tweetsets.

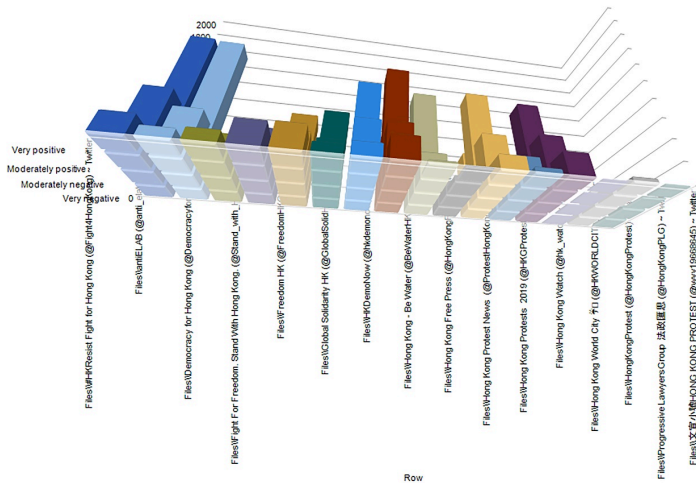
Figure 10: A Zoomed-in View of the “Democracy” Word Tree from the Twitter Datasets (and a zoomed-out view to the right)



This word tree shows democracy references in simplified Chinese.

Figure 12: The “民主” Word Tree from the Twitter Datasets

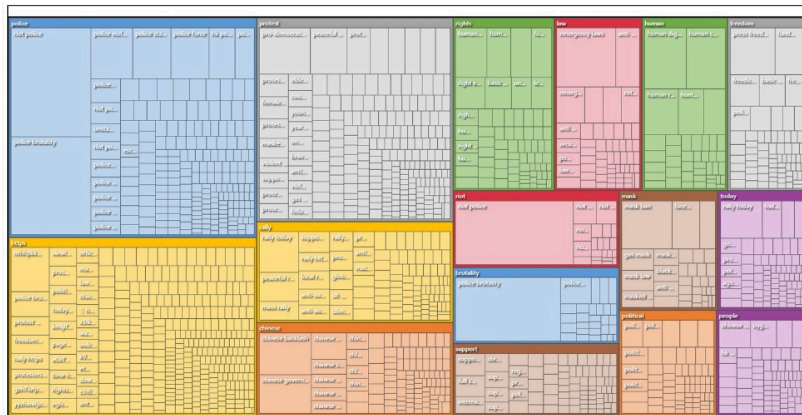
The various social accounts had different focuses in terms of sentiment, what is seen as positive and what negative. (Figure 13)



Machine-coded sentiment varies across the Tweetsets.

Figure 13: Variances of Sentiment across the Tweetsets

To summarize, the coded topics seen as positive vs. negative (sentiment treated as a binary) may be seen in Figure 14. One clear difference is that there is more complexity in the “very positive” and “moderately positive” text sets as compared to the “very negative” and “moderately negative” sets. Clearly, the points of friction and clashes with police is seen as very negative.



Autocoded Sentiment from Positive Sentiment Set



Autocoded Sentiment from Negative Sentiment Set

The topical focuses of the positive vs. negative sentiment sets vary.

Figure 14: Autocoded Top-level and Related Sub-topics of the Positive vs. Negative Sentiment Sets

In terms of the topics that involve high sentiment (vs. neutral text), those clearly involved clashes with law enforcement (Figure 15).

the “US” and “China” in their respective senses of “democracy” do show a difference. For the U.S., the focus seems to be more about mechanics and the developed levers of governance, academic research and study, personages and thinkers (such as for women’s rights), a lived sense of constitutional democracy, and even a reference to the historical Greeks. For “China,” the related search terms seem more remote and diffuse. (Table 2)

United States		China	
0.8318	on democracy	0.8495	political
0.8282	political	0.8391	popular
0.8223	ideals	0.8322	words
0.8193	demographic	0.8278	examples
0.8151	american politics	0.8277	purpose
0.8151	constitutional	0.8271	statement
0.8049	demography	0.824	what is a
0.7999	political map	0.8221	reading
0.7921	fall of rome	0.822	population of
0.792	of the us	0.8215	writing
0.7919	democratic countries	0.8214	students
0.7918	population distribution	0.8207	issues
0.7909	government branches	0.8205	speech
0.7903	comparing	0.8198	modern
0.7902	democracies	0.8197	quote
0.79	native americans	0.8197	questions
0.7896	political philosophy	0.819	definition
0.7888	roman empire	0.819	and the
0.7882	bill of rights	0.819	what is
0.7867	population map	0.8186	people
0.7867	understanding the	0.8186	social
0.7861	political parties	0.818	problems
0.7854	hinduism	0.8179	diagram
0.7845	manganese	0.8178	american
0.7812	economics	0.8177	drawing
0.7811	condorcet	0.8176	examples of
0.7799	natural law	0.8176	in the world

0.778	ethic	0.8176	children
0.7773	social classes	0.8168	states
0.7771	important issues	0.8166	example of
0.777	cultures	0.8163	how does
0.7763	us political	0.816	new york
0.7759	population density	0.8156	experience
0.7737	density map	0.8155	exercises
0.773	short story	0.8152	affect
0.7727	mary wollstonecraft	0.8151	about
0.7726	middle america	0.815	gender
0.7725	chemical properties	0.815	york
0.7716	wollstonecraft	0.8148	access to
0.7712	the new york	0.8147	ways
0.7712	fall of the roman empire	0.8143	kids
0.7702	article	0.8139	normal
0.7701	enlightenment	0.8139	population
0.769	bill of	0.8136	what is the
0.7687	rulers	0.8136	america
0.7686	the united	0.8133	calculator
0.7684	social studies	0.8132	activities
0.7682	major issues	0.8132	famous
0.768	aristotle	0.813	to write
0.7673	senates	0.8129	the world
0.7667	narratives	0.8129	work
0.7667	political systems	0.8128	where is
0.7667	american democracy	0.8127	did
0.7666	native	0.8125	school
0.7666	social issues	0.8125	problem

0.7662	lower class	0.8123	how to write
0.7658	policies	0.8123	theory
0.7657	psychology	0.8121	child
0.7656	schwann	0.812	what are
0.7656	essay writing	0.8119	summary
0.7656	physical properties	0.8118	curve
0.7653	logical	0.8117	education
0.7651	constitution	0.8116	art
0.765	confucianism	0.8116	how many
0.765	american revolution	0.8115	happen
0.7649	ecological	0.8114	family
0.7647	native american	0.8112	cause
0.7646	structure	0.8112	rights
0.7645	on politics	0.8111	meme
0.7644	judaism	0.8109	presentation
0.7636	social welfare	0.8108	practice
0.7635	greek democracy	0.8107	does
0.7635	beryllium	0.8107	personality
0.7632	diversity	0.8106	to ask
0.7627	the sioux	0.8103	perspective
0.7627	standard of living	0.8103	functions
0.7626	population density map	0.8101	how to make a
0.7624	summarization	0.8099	where
0.7623	education level	0.8099	math
0.7622	greek culture	0.8096	ideas
0.762	economic issues	0.8096	counting
0.7616	americium	0.8094	three
0.7614	europium	0.8093	cola

0.7614	population	0.8092	formula
0.7613	gross domestic	0.8092	revolution
0.761	auditory	0.8092	product
0.7608	rights to vote	0.8092	between
0.7607	age of enlightenment	0.8092	how do
0.7606	number of representatives	0.8092	brain
0.7604	vanadium	0.8092	aliexpress

Table 2: “Democracy” in the U.S. vs. China based on Search Term Correlations by Week (in Google Correlate)

China is a “consolidated authoritarian regime” (“Freedom in the World 2019,” 2019, p. 3). It is part of a group of nations (“Pacific Asian countries”) that is seen to “have a lower likelihood of democratic transitions, holding other factors constant” (Feng & Zak, April 1999, p. 163). China is advocating a “development first, democracy second” model (McFaul, 2004, p. 149).

China is seen to engage in “backlash against democracy aid” and labeled the U.S. “democratic offensive” as “self-serving, coercive, and immoral” (Carothers, Mar. – Apr. 2006, p. 58). As a country, it has engaged in active resistance against democratic diffusion. In its toolkit are “coercion,” “economic patronage,” “restricting exposure to democratic ideas,” and “developing alternative narratives about democracy to reduce local receptivity to democratic diffusion” (Vanderhill, 2017, p. 41). China’s press freedoms were ranks 176/179 countries by Reporters without Borders in 2016, due to censorship and other government controls (Vanderhill, 2017, p. 44). More recently: Freedom House has shared on its website that China, in 2018, forced over a million ethnic Uighurs and others into “‘reeducation’ centers”...“while President Xi Jinping’s position was secured indefinitely” (“Freedom in the World 2019: Democracy in Retreat,” 2019). Perhaps the infrastructure

for mass incarcerations, seeable from satellites, serve as a warning.

Discussion

From within, it may be harder to maintain an idealized version of democracy as contrasted to the real. For citizenry, democracies may seem fairly rough-and-tumble, with various personalities who attain positions of power, with their personality quirks and foibles and sometimes worse. Even though public officials are supposed to be answerable to the people, it may not always feel that way. Policy-making is fought over in public. "Politics" seem to be ever present. This is a form of government that has its strengths and weaknesses, as in every other type. Every generation stands to benefit from civics lessons and to move beyond "filter bubbles" and "echo chambers" to understand their respective places in the world, and where democracy stands in relation to other forms of governance. Civic engagement is associated with improved democratic outcomes and development outcomes (Gaventa & Barrett, 2012, p. 2407).

This work focuses on a limited set of interrelated questions. The two main research focuses are on the following:

What do the popular senses of "street democracy" around the pro-democracy Hong Kong protests on the Twitter microblogging site suggest about (1) its meanings to the demonstrators, and then what are some of the implications to (2) the strategic and tactical international or external "democratic promotion" in the U.S. context abroad generally and towards Hong Kong specifically?

In this work, the senses of "democracy" in the recent microblogging messages related to the pro-democracy protests in Hong Kong are several-fold. One is the sense that that democracy is mentioned as aspirational and critical to protect, for this gen-

eration and future ones. It is sometimes mentioned in the same breath as “human rights” and “civil rights” and “human freedoms.” Democracy in this street sense is about a protection of personal and mass human rights in a very experienced level and a rejection of the incursions of an authoritarian government seen to be attempting to assert its rights over a “semi-autonomous” polity. The demonstrators demonstrate a sense of their rights as individuals critiquing government over-reach, in terms of the anti-extradition policy proposed by H.K. Chief Executive Carrie Lam but apparently originating from Beijing. The proposed policy “would have let local authorities detain and extradite criminal fugitives who are wanted in territories with which Hong Kong does not currently have extradition agreements, including Taiwan and mainland China” (2019 Hong Kong Protests, Oct. 24, 2019). Beyond the letter of the proposal, many saw human rights being papered over and taken away from Hong Kong citizens (2019 Hong Kong Protests, Oct. 24, 2019). The messaging around “street democracy” on Twitter does not show high insight depth nor data high analytics, but more of an embodied sense of lived democracy based on inherent human rights: voices of the people, freedom of movement, freedom of association, freedom of speech, consent of the governed, and other aspects. If democracy is also about having the power of social protest and second-guessing government leaders and policies, those also senses of socio-political activism also were shown in the social imagery.

Another sense of street-expressed democracy is that Americans are mentioned in close proximity to “democracy,” showing an appreciation for the American model potentially and offering a shout-out to American friends and allies. As to soft power, the American brand of democracy currently is still one that is a reference point for others (even though democracy is seen to have declined in the U.S. under President Trump). Some hallmarks: the separation of powers among the executive, legislative, and judiciary, the checks and balancing of power. Hollywood actors, international authors, artists, and others play their respective

roles in this messaging. Work by non-profit entities may stand in the gap, including several that promote democracy by evaluating the state-of-the-world annually in terms of democratic practices (Freedom House), and others.

Computational sentiment analyses show that there is much positive optimism around the issues of human rights, the rule of law, freedom, political processes, and the Hong Kong people, even as there are frustrations around police actions and the label of “riot” to their actions.

Based on an open and public “street democracy,” what are the implications for the transnational advocacy of democracy abroad? What should it be at the water’s edge (at the borders of the U.S.)? As to international and external democratic promotion, advocacy is generally low-cost and non-committal. And yet, even then, official Washington seems to have declined to engage even in “cheap talk,” much less “costly signaling.”

Future Research Directions

This work involved the exploration of some 16 social accounts on the microblogging platform Twitter, to explore what “democracy” may mean in the context of mass civil disobedience and marches in Hong Kong. One way to expand this work is to capture an $N = \text{all}$ instead of just skimming partial datasets from the respective accounts. There are other sources that may be explored, such as social networking sites, web logs or blogs, social imagesets, mass search term associations, word searches in mass book corpora, crowd-sourced encyclopedias, and other types of social media. (This work did use some of these source types but only in passing, not as a main focus.)

Follow-on work may involve other “street” senses of types of government systems: general current types such as “republic, communism, fascism, oligarchy, autocracy, and theocracy” or

even more fine-pointed “anarchy, aristocracy, bureaucracy, capitalism, colonialism, communism, democracy, federalism, feudalism, kleptocracy, meritocracy, military, dictatorship, monarchy, oligarchy, plutocracy, republicanism, socialism, theocracy, totalitarianism, tribalism.” (The prior lists are those run in the Google Books Ngram Viewer” for a generalized sense of references to the various types in digital and digitized books.)

Other more difficult questions will be in the hands of other researchers:

- Were parts of the Hong Kong populace living in a social tinderbox of sublimated concerns and frustrations that made the citizenry so willing to react *en masse* with the “trigger” of the proposed legislation? What made the messaging so viral?
- What was the role of the Umbrella Movement in 2014 in laying the groundwork (and some of the social media infrastructure) for the 2019 demonstrations, particularly given the concerns about the lack of universal suffrage and the long arm of Beijing (2019 Hong Kong Protests, Oct. 24, 2019)?
- In terms of the multi-messaging, how effectively did the various stakeholders intercommunicate?
- What modern cyber capabilities were at play by the various stakeholder entities (various governments, law enforcement, journalists, demonstrators, and others)? After all, the June 9, 2019, rally “saw the first ever use of artificial intelligence in measuring protest numbers in the history of the HKSAR, which led to the identification of 517,478 people” (2019 Hong Kong Protests, Oct. 24, 2019). [“HKSAR” represents “Hong Kong Special Administrative Region”.]

Meanwhile, there is a sense of the future being written at least for the near-term. There is also the observation that each generation will have to advocate for its own interests when their time

arrives, with competing visions of what is desirable and appropriate.

Conclusion

November 2019 saw the takeover of a university campus, the trashing of the space, and the recapture of that space by the police. Still, weekend after weekend, the demonstrations had continued even as the sizes of the crowds have dwindled. Only one of the five demonstrator demands had been met. Multiple Western governments had passed legislation to support the pro-democracy demonstrators. Some commentators suggest that the People's Republic of China needs Hong Kong's trade and finance capabilities as an effective interface with the world and so has held back on military action against the demonstrators. Others suggest that various governments have constrained the PRC against reacting with overwhelming violence. Journalistic reports suggest that there are "underground railroads" enabling the movement of demonstrators, especially leaders, outside of Hong Kong for their safety, to Taiwan and other locations. Where the government has labeled the actions criminality and disruption (but short of rebellion), the demonstrators have described their actions as democratic power and voice, commitment, risk and sacrifice, purpose, righteousness, conviction, and solidarity and unity. Then, in December 2019 and January 2020, news of a novel coronavirus which could be spread between people through both close-in contact (in air and on surfaces) was released to the worldwide media. Later, news was released that people could be contagious for person-to-person transfer even before the showing of symptoms (of fever, congestion, and other symptoms). This 2019 coronavirus out of Wuhan, China, was thought to have global pandemic potential given the speed of spread and fatality rates (Berlinger, McKeehan, & John, Jan. 26, 2020). Without any immunity, the world's population shifted its mass attention and priorities to survival—with quarantines, travel restrictions, border closures, and city shutdowns. In the

region, major cities in China were quarantined by the government, and emergency health measures were put into place in Hong Kong, including the delayed start of schools until mid-February 2020. By the time of this publication, the pro-democracy demonstrations had gone on for nearly a year without abatement until being overtaken by mass health events. [Additional protests occurred in Hong Kong albeit against a government-run quarantine center that the government wanted to build out of an unoccupied apartment building. (Berlinger, McKeehan, & John, Jan. 26, 2020).]

Democracy, as a form of governance, is not solely about expressing oneself. It is about listening to others' diverse voices, forbearance, and the accommodation of others. It is about civic responsibility. It is about paying attention to social issues and policies and law-making (and law-following). Democracy in practice is raucous and sometimes inefficient and sometimes costly and sometimes full of strife. The health of democracy as a form of governance in the world depends on people's coordinated actions, from a variety of stakeholders. The United States, Canada, Europe, India, and parts of South America are identified as Free, in the "Freedom in the World 2019 Map" by Freedom House. (Freedom in the World 2019 Map, 2019) They stand as aspirational bastions for those in countries "Partly Free" and "Not Free". Freedom House suggests that the number of "Not Free" countries rose "nearly 26 percent" and that "the share of Free countries declined to 44 percent" ("Freedom in the World 2019," 2019, p. 3). This is in a time when the group of nations entities seem to be in retreat in a so-called G-Zero world. As "transnational citizens," the Hong Kong demonstrators have surpassed Stokes' sense that a "practical commitment to global democracy" is not required for such standing (Stokes, April 2004, p. 119) by advocating heatedly for such rights on their own behalf and to shift their own political culture. Their actions and messaging broaden and complexify the long-standing sense of human rights within a "civil and political rights framing" from inter-

national rights organizations in China through transnational activism (Fleay, Oct. 2012, p. 915). The work of “how to constitute transnational democracy and the practical problem of how to realise it” is challenging (Karlsson, 2008, p. 203), and the world itself as an “uneven geography of global civil society” (Smith & Wiest, Dec. 2005, p. 621) even as democracy is “the main legitimating principle of government” (Dryzek, 1999, p. 30).

Some suggest that there is a lack of mass mental space for the consideration of others' plights and needs, perhaps a nickeling and diming in international relations (with *realpolitik* at the forefront). Here, social media's limits may also be seen, with the cheap talk of upvotes and encouragement, but from often safe distances, with nothing else on the line beyond mere light attention. Here, “street democracy” reads like sky-writing, euphoria clashing with *realpolitik* and hard power, with distributed hopes dissipating in the ether. If democracy is the background music of nation-states, and if it applies restraints on the practices of state sovereignty, the on-ground demonstrators of Hong Kong were arguing for applying international global norms to their national context, and their particular lived realities. The long-term and continuing work of creating a democracy endures; it will likely continue long after the SARS-CoV-2 is less of a forefront of human concerns.

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Appendices

APPENDIX A: Autocoded Top-Level Topics and Related Subtopics from Combined Tweetstream Sets

Appendix A is comprised of a table of the top-level topics and related sub-topics from the combined Tweetstream sets. The subtopics provide more of a sense of lived-level communications

among those sharing microblogging messaging, in a variety of ways: one to one, one to many, many to one, and many to many. A distance reading approach using computational extraction and analysis is complemented by close-in human reading of particular messages. (Table 3)

chinese	
	chinese abuse
	chinese accounts
	chinese advances
	chinese ambassador
	chinese anthem
	chinese anthem https
	chinese app store
	chinese army
	chinese army barracks
	chinese army https
	chinese artist
	chinese audience
	chinese authorities
	chinese banks
	chinese basketball association
	chinese basketball fans
	chinese basketball team
	chinese blood
	chinese boats
	chinese bot firm
	chinese brief
	chinese business entities
	chinese businesses
	chinese capital
	chinese capital stores
	chinese censors
	chinese censorship

	chinese censorship practices
	chinese character
	chinese characteristics
	chinese citizens
	chinese city
	chinese classics
	chinese colony
	chinese communist flag
	chinese communist regime
	chinese community
	chinese companies
	chinese consulate
	chinese consul-general
	chinese corruption
	chinese counterparts
	chinese criticism
	chinese crowd
	chinese culture
	chinese culutre (sic)
	chinese custody
	chinese custom
	chinese dance show
	chinese dictator
	chinese diplomats
	chinese distributor
	chinese domination
	chinese election signs
	chinese embassy

	chinese embassy https
	chinese embassy statement
	chinese emblem
	chinese entities
	chinese entrepreneurs
	chinese envoy
	chinese ethnocentrism
	chinese expansion
	chinese expansion https
	chinese extradition bill
	chinese fans
	chinese firms
	chinese flag
	chinese flag ceremony
	chinese flag today
	chinese flag-raising ceremony
	chinese folks
	chinese friend use
	chinese friends
	chinese ghost festival
	chinese gov't
	chinese government
	chinese govt (sic)
	chinese gov't
	chinese gulags
	chinese guy
	chinese hackers
	chinese history

	chinese identity
	chinese influence
	chinese influence strategies
	chinese institutions
	chinese interference
	chinese interference expert
	chinese internet
	chinese intervention
	chinese intimidation
	chinese investment
	chinese issues
	chinese joke
	chinese journalist
	chinese journo
	chinese language
	chinese laws
	chinese leader
	chinese leadership
	chinese machine
	chinese man
	chinese manoeuvre
	chinese market
	chinese med
	chinese media
	chinese media report
	chinese men
	chinese military
	chinese money

	chinese name
	chinese name 美心
	chinese nationalism
	chinese nationalists
	chinese negotiators
	chinese netizens
	chinese occupation
	chinese occupation army soldiers
	chinese officials
	chinese ones
	chinese online retailers
	chinese ownership
	chinese partners
	chinese peasants
	chinese people
	chinese pettiness
	chinese player
	chinese police
	chinese police databases
	chinese politics
	chinese ppl
	chinese premier
	chinese pressure
	chinese projects
	chinese propaganda app
	chinese regime
	chinese regulator
	chinese relative

	chinese reporters
	chinese residents
	chinese restaurant
	chinese satirist
	chinese security bureaus
	chinese smartphone brand vivo
	chinese soil
	chinese soldiers
	chinese sovereignty
	chinese sponsor
	chinese spy chips
	chinese starts
	chinese state
	chinese state assets
	chinese state companies
	chinese state https
	chinese state media
	chinese state media https
	chinese statment (sic)
	chinese stops shopping
	chinese student group
	chinese students
	chinese style
	chinese style censorship
	chinese subtitles
	chinese surveillance tech
	chinese system
	chinese taxpayers

	chinese team
	chinese tech
	chinese tech workers
	chinese television shows
	chinese territory
	chinese threads
	chinese threats
	chinese ties
	chinese tourists
	chinese tradition
	chinese trolls
	chinese troops
	chinese tyranny
	chinese venture capital investment
	chinese version
	chinese vision
	chinese visit
	chinese visitors
	chinese warmth
	chinese websites
	chinese woman
	chinese words
	chinese wrongdoings
	chinese youth
	chinese) staff
	mainland china
	overseas chinese
gas	

	7 gas grenades
	91 gas cans
	fired teas gas (sic)
	full face gas mask
	gas bomb shell
	gas buffet
	gas canister
	gas cannisters
	gas grenades
	gas https
	gas indoors
	gas launchers
	gas mask
	gas mask-clad protesters
	gas mayhem
	gas pellets
	gas redux
	gas residue
	gas rounds
	gas shells
	gas wanchai
	gas warning
	greenhouse gas
	indiscriminate tear gas
	rear gas
	tear gas
	tear gas bullet
	tear gas canister

	tear gas canister lands
	tear gas cannisters
	tear gas cometh
	tear gas granade (sic)
	tear gas grenade
	tear gas grenade shell
	tear gas https
	tear gas indoors
	tear gas mars
	tear gas mitigation technique
	tear gas rounds
	tear gas rubber
	tear gas shots
	tear gas smog
	tear gas source
	tear gas volley
	tear gas yesterday
	unused tear gas canister
	wearing gas masks
https	
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	♂ ♀ https
	♣ https

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	0lrpsywr5n https
	0qwpvagaxd https
	0u2du1r2e1 https
	0yf3pxgcxp https
	0yues1ymqd https
	15 minutes https
	17th week https
	1997 handover https
	1flfrcxow1 https
	1pm https
	1r2tmkflkj https
	1sszmsbbt5 https
	1st thought https
	2016 unrest https
	2020 election https
	20pm https
	2csc8jbsnl https
	2innh2njyd https
	2kvdsdmuxx https
	2rnw7uenc2 https
	2tnlq1ohha https

	2yhf42ssf7 https
	2zqirsukni https
	3 end https
	3 points https
	33d4adeu9r https
	3bk7n2a84d https
	3bk7n2rivl https
	3brflcusx3 https
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	3u3vdekydx https
	3y7z11eoje https
	4am https
	4amkmp3l1d https
	4geqvewkz https
	4ilbbuu8t9 https
	4kbf3suwvq https
	55hmotyglb https
	5isgrpmjrp https
	5ryxo3jwx6 https
	5s2ajagqmf https
	6q2iljtjud https
	6so6nbdovu https
	6xch9efso4 https
	6znoowqgtg https
	70th anniversary https
	70th party https
	7gahkwgpu7 https
	7h4ppw1hv1 https

	7ny1pcp5i1 https
	89zg5p6uxx https
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	8o0ptdyrjd https
	8o3giupchq https
	8rqvavfbsd https
	90d4nzas9a https
	96hrs https
	9dkcmnidy3 https
	9fs4r1aujk https
	9hqe1ilyj2 https
	9xrsp5sfgr https
	a09vhclho4 https
	a0pfqezko8 https
	a1nryd3eiu https
	a4qq2scgh7 https
	a57r7raw58 https
	aapoghoqn1 https
	abidcg3t2p https
	accelerating authoritarianism https
	active https
	additional video https
	administration https
	admiralty https
	adxomxmoak https
	adzmjrbj8s https
	african swine fever epidemic https
	aganqu1pqj https

	aggressors https
	ai3t0dydcu https
	airport https
	ajdziclp4a https
	ajfdne5ni6 https
	alarm bell https
	aliases https
	ammai laaey https
	amujfhgyxt https
	android https
	anniversary https
	annl8umbwa https
	annual ritual https
	anr5ilcbxy https
	answers https
	anthem legislation https
	anti-extradition bill tomorrow https
	anti-government protesters home https
	anti-mask law https
	apology https
	app criticism https
	app https
	app store https
	appeal https
	apple https
	aqaz6udp87 https
	arrest https
	arrived https

	article https
	atm https
	attack https
	attacked train https
	attention https
	autonomy https
	b08h9ywoqy https
	b3mvhetbtv https
	b3xheesrp7 https
	bad https
	bad outcome https
	bagful https
	bail https
	ban https
	banning masks https
	barricades https
	basketball https
	bastard https
	batqlv8rg9 https
	bbt https
	bcajmtd1ca https
	bdveh2zusq https
	began https
	belonging https
	bewater https
	bezi2bxlns https
	bhqrc8hdmn https
	bhqted3snw https

	bhxnlubrmi https
	bill https
	bkubpipfia https
	blind https
	blocking roads https
	blood https
	blurb https
	border https
	bosb7en2nu https
	boss https
	brave https
	brief skirmish https
	brilliant https
	brilliant ! https
	british betrayal https
	broadcast https
	brutality https
	bsgofaxfwi https
	building https
	bukqlybuhw https
	byzpubphx9 https
	c3ddequ6ts https
	c3lk9jmruo https
	c3t6f6bepx https
	c3t6f6spo7 https
	c8otmldn7i https
	c8rtbicfnx https
	call https

	capital flight https
	caps https
	causeway bay https
	cbc https
	cclrygz2zt https
	cedqf0n34j https
	central market gallery https
	censorship https
	cep3jsrdv https
	cepruups63 https
	ceq29mla6f https
	cexaofkta8 https
	cfjbtjdjbpj https
	challenges https
	channel https
	chanting slogans https
	chaos https
	chase https
	chief https
	chilling effect https
	chinazi https
	chinese anthem https
	chinese army https
	chinese embassy https
	chinese expansion https
	chinese state https
	chinese state media https
	chinese-language statement https

	chslj1euf https
	citing protest unrest https
	city https
	cityplaza https
	city-wide unrest https
	civic engagement https
	clash https
	clean-up https
	closed stations https
	cnkzqwzkg1 https
	cold war https
	coming https
	coming weeks https
	communist rule https
	community https
	concern https
	conclusions https
	concourse https
	conference https
	congressional body https
	control https
	controversial co-location arrangement https
	controversial extradition bill https
	controversial mask ban https
	controversy https
	co-parking space https
	co-signing https
	counter-productive https

	court today https
	courtrooms https
	coverage https
	cpcb3dbv1j https
	cprxho3op8 https
	creative art thee https
	cun0h6fgyb https
	cun0h6xhpj https
	custody https
	cwmq3vacbp https
	cwn2fruint https
	cy4prjsh55 https
	cyqee3pnim https
	d0e0ujp3fj https
	d1364dgctx https
	daily steps quota https
	dangerous https
	dead https
	death https
	debut https
	decades https
	deep https
	defense-industrial ecosystem https
	defiance https
	demands https
	democracy https
	democracy movement https
	democracy statue https

	demonstration https
	demosistō https
	detained https
	detention https
	determined https
	dgj402vs1w https
	dioramas https
	discrimination https
	disorder https
	dispersing crowd https
	diuv6h2pek https
	dk9rfja0yp https
	dlp33ropm3 https
	dn35sjb1wx https
	doctored https
	dorms https
	double-dribble https
	download design https
	dqjilcpggx https
	dqydyt3ey https
	dzwz2jk4bo https
	e5ueihz0nx https
	e7au1nt7w5 https
	e99cbus3ye https
	early https
	ebcbykwtxs https
	economic sanctions https
	edtqoyeubt https

	edwvoj9dcr https
	ef7g6ungei https
	eggtobekit https
	eieo11ulvz https
	emergency law https
	emergency legislation https
	emigrating https
	emsb07kc61 https
	encouraging https
	epidemic https
	escalation https
	etc https
	ethnic minority population https
	eu5bvokd0c https
	event https
	event summary https
	experts https
	explained https
	expression https
	extradition bill https
	extradition https
	extradition law https
	eysqs2n7cs https
	f2qjteafx8 https
	face coverings https
	face mask ban https
	face masks https
	fact-checking https

	factionous pro-democracy camp https
	failed hongkongers https
	fans https
	faqtravelhk https
	favorite video https
	fb page https
	fb0q9ue2p8 https
	fdfspfqixj https
	feet https
	fellow professor https
	fine https
	fk7xokne84 https
	fko3nelv5l https
	flag https
	flwozdhdvdk https
	fnri5e5mfj https
	fo2olqdp2 https
	following statement https
	food https
	form https
	fqhb4oqpil https
	free sex allegation https
	free speech https
	freedoms https
	fresh protest https
	front line protesters https
	frontlines https
	full text https

	funeral squad https
	future curation https
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	fvarushrpx https
	fwx7qcmixv https
	g1avwwpcgj https
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	game https
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	gdmob8gies https
	gear https
	gender recognition law https
	gender-based violence https
	geopolitics https
	gfhusad6rt https
	gjnpi42pzv https
	gk72tctva1 https
	glhakiblscl https
	global recovery https
	globe https
	good https
	good point ? https
	government departments https

	government https
	gqeql9yncs https
	grave concern https
	ground https
	group photo https
	gtjr1erg41 https
	gzh7iufpw5 https
	hackers https
	half https
	hand https
	handover https
	happened https
	happy birthday https
	hard dude https
	hc4rjzhutf https
	heart https
	heckling https
	hell https
	helm https
	hero https
	hgqquhjl8l https
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	higz1glx6d https
	hihnnwfu0f https
	hk https
	hlj5ldrmda https
	hoifl4pujm https
	holding hands https

	home https
	home??? https
	hongkongpen? https
	honorary patron https
	housing https
	hqymqagh5g https
	htnyaokvx4 https
	human rights activist https
	human rights https
	huoclfdeu5 https
	hxcinmlb2v https
	i0aewt55su https
	i1gr2pqgo3 https
	iawdq3auxg https
	icgswvmc7v https
	iffmjfiyhk https
	ifynnjc5zz https
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	illegal assembly case https
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	illegal https
	impractical https
	impressive https
	incident https
	independence party https
	independent inquiry https
	indonesian press https
	industrial revolution https

	influence https
	inmedia https
	inmedia-hk https
	insane https
	international significance https
	irz6yypge4 https
	iscutcksql https
	ispighzsai https
	iss9ys1ssy https
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	iwfjkgac0b https
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	j3fjncjxde https
	j71o35q3ec https
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	journalists https
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	jvj5pqot72 https
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	k4k4qclqk4 https
	k4y9uaqrre https
	kentewing1 https
	keyboard https
	kgqa2stvlk https
	kjd5egbjlt https
	kjun6gkg5x https
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	kxmy0h3kk4 https
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	la6q2hnrfk https
	la8ujn8jup https
	labour rights https
	lajqfqm2 https
	laqqg21da https
	laqoz3ut08 https
	large https
	last night https
	late https
	law https
	lawmakers https
	lawyers https
	lchplrt3oq https
	leadership https
	leading politicians https
	league https
	leaving https
	legislative council https
	legislative menace https
	legislature https
	legit journalist https
	level https
	link https
	liquidity concern https
	live blog https
	live https
	live round https
	livestreamed interview https

	ljxolt1ue4 https
	lkraldntny https
	lnag30s43b https
	lo1eguftr5 https
	lobby https
	lobbying leader https
	local celebs names https
	local press https
	logo https
	look https
	lot https
	loudspeaker https
	loving hk-ers https
	low https
	lpvdh21zpb https
	lu7o9vfkda https
	luguydr789 https
	lusyvn9c9r https
	luvhcoibxy https
	m083ppafv6 https
	mad https
	main squeeze https
	mainland https
	malls https
	march https
	march today https
	masks https
	mb7ktwwtni https

	medical care cost https
	mega drama https
	member https
	meme-worthy https
	men https
	mfd3funkz0 https
	mgayxtymhj https
	mhcgma9pc4 https
	midnight https
	minister https
	mioxsoho7r https
	mix-up https
	mjynood36q https
	mnjkrusqyx https
	molotovs https
	moment https
	movement https
	mtnbud0ffu https
	mtr https
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	ndgrp3uhzq https
	ndqbgorhzs https
	nearby https
	needy https
	nfhfqikkcg https
	nhy1ehunuj https
	night https
	nkynk2zltt https
	nnqxtqhev w https
	noble life https
	nonexistent https
	non-working day https
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	nrbhtmsw4z https
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	o8fs6afc1c https
	ob276s3clx https
	obligation https
	ocean https

	officers https
	official https
	official] https
	oikl5dwkyk https
	ole2fwr62m https
	omftjytclf https
	online channel https
	online https
	online yesterday https
	on-site photo https
	on-site photograph https
	oolc2e3l11 https
	opening speeches https
	opwatuaoo5 https
	orwellian https
	others https
	outrageous https
	ovmtqmauyz https
	ovtcmxedyf https
	owzgcstyky https
	p3zlpgzkw3 https
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	park https
	party https
	passageways https
	patron https
	pd5oewtazp https

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	pending appeal https
	people https
	pepper spray https
	personal capacity https
	petition https
	pgaquemxpr7 https
	pkhw2c0gjs https
	pkk6vmw1ks https
	place https
	pn3vg3avdx https
	point-blank range https
	police abuse https
	police appeal text https
	police brutality https
	police custody https
	police https
	police state https
	police station https
	police violence https
	policeman https
	policy address today https
	policy https
	polite protesters https
	political nature https
	political unrest https
	politics https
	poll https

	possible future https
	possible tonight https
	post https
	power https
	ppivlkavo5 https
	ppl https
	pqoqthozzz https
	precedent-setting case https
	present https
	press https
	price https
	privacy https
	private capital https
	pro-beijing group https
	pro-beijing messages https
	pro-beijing opponents https
	pro-democracy message board https
	pro-democracy slogan https
	pro-democracy symbol https
	professionals https
	programme https
	pro-independence https
	projectile https
	propaganda https
	prosecution https
	prosecution power https
	prosperity https
	protest culture https

	protest https
	protest march https
	protest movement https
	protest today https
	protest video game app https
	provocation https
	public speech https
	purge https
	purpose https
	pxwlib5u5q https
	py1rspkjhd https
	qdyzwu0i50 https
	qetlkpp5xa https
	qfmxhodftt https
	qg5lcfu5yu https
	qhnopsuazz https
	qjvvfkii3h https
	qkadurpire https
	qoqeh7kcbb https
	qoqeh7sbcb https
	qortkkwxdn https
	queries legality https
	questionable act https
	questions https
	quick clarification post https
	quoted https
	qv30igxcuc https
	qwg1llgj1n https

	qycsxelutl https
	r79rcjetua https
	r9mqj9l3ld https
	rage https
	raincoat https
	rally https
	rational self-interest https
	rc0wzghful https
	real time https
	reality https
	reconciliation commission https
	recovery https
	referral link https
	regular dialogue https
	remarkable https
	reprisal https
	rescheduled https
	resisting https
	resolute lol https
	respectively https
	response https
	retarded government https
	revealed https
	reverse https
	rfnrs2xt8m https
	rgleqsyr11 https
	rgl9uhwv0w https
	rights protection https

	riot police https
	rioters https
	rnsgodumgo https
	road https
	room https
	row https
	rpzuush3re https
	rsp4xg6kiv https
	rule https
	rumours swirl https
	running https
	rural lawyer https
	rx4xjkphh https
	rxpp5rkfry https
	rxussjheac https
	s70cuulvs0 https
	sample database entry interface https
	sanctions https
	sanctions threat https
	scary https
	screenings https
	scx3hgkmvl https
	search https
	self-defense https
	senator https
	sentencing reviews https
	services industry https
	session https

	sexual assault https
	sexual violence https
	sgjgejb1oz https
	shameful https
	shapes https
	shed https
	shield https
	short https
	shot https
	shot teen https
	show trial https
	showing support https
	sight https
	sil01f2eqj https
	size https
	skbvgyigww https
	slowdown https
	smxbc5acwi https
	soon https
	sorry https
	speech https
	splov28p4y https
	sszaqepuez https
	stake https
	stance https
	standing watch https
	standstill https
	standwithhongkong https

	state media reports https
	station https
	stereotype https
	stick https
	stn https
	stormed https
	strangers https
	street stall https
	strong https
	student https
	student reporter https
	stuvh6bnms https
	suffrage https
	suggested https
	suitable https
	summer https
	support https
	suspicious https
	t4cnjgs395 https
	t4frmf4uub https
	t92ynruxbm https
	taikoo station https
	tear gas https
	tears https
	telegram channel https
	telegram https
	tense https
	terrorist organization https

	tfrvydzq46 https
	thigh https
	thousands https
	tiicqsmtpk https
	time https
	tkmyhqsjde https
	tmxocijtb https
	tocb1ly2ou https
	today https
	tonight https
	totalitarian agenda https
	totalitarianism https
	touch opportunist https
	town hall meeting https
	town hall session https
	tqjlcchlix https
	trade peace https
	trade war weapon https
	trading day https
	train network https
	transparent inquiry https
	trash station https
	trevornoah? https
	triad background https
	trudeau https
	true face https
	truth https
	t-shirt https

	turmoil https
	tweet https
	twznpsff2y https
	tyranny https
	tzwxdcrkws https
	u0f6rduulu https
	ugzemgnipq https
	umrhz1oto4 https
	unbelievable https
	undergoing checks https
	university campus https
	unlawful detention https
	unprecedented https
	unrest https
	uoighpphec https
	urrtri5uaj https
	using https
	uwaucnhztd https
	uwij3wax9q https
	uydeinn6t3 https
	v00iru4a22 https
	v1ukbpfk48 https
	vandalised https
	vandalised tonight https
	vehicle https
	vemb2h3qf4 https
	video https
	viewing https

	violence https
	violent https
	violent past https
	visa hitch https
	visit https
	vlhv0itpk5 https
	vnmlmkulj9 https
	vote https
	vunmfpvfet https
	vwyhmeqblp https
	w2ncycf147 https
	w6senf8hij https
	wan https
	warning https
	warrant https
	watchdog https
	watching https
	water cannon dye https
	water cannon https
	water-filled barriers https
	wbx0gglyro https
	wcg1nhqiob https
	wcsc9ecdjn https
	wc wd2jsh6g https
	weapons https
	wearing masks https
	website https
	week https

	weekend https
	welcome https
	wfai5goafm https
	wfyehnl8s https
	whampoa https
	whatsoever https
	whfuggl3z0 https
	wijd7inda0 https
	wild https
	wj2o4cdbng https
	wjpm1gp2pf https
	wk8kanmdfe https
	world history exam https
	wrcbq2hzkg https
	wrwthvi0f1 https
	wrzsmbe0a7 https
	wt1ismgb0i https
	wtnzhpd1pe https
	wxrso0tn7u https
	x0l5q2cuem https
	x3lkuj2tae https
	x8ttglesgl https
	x9zrxcuxsf https
	xc3jmdtgjw https
	xcwpc1ybxk https
	xcxiwvdi1c https
	xfb9ffum0u https
	xfcylutbah https

	xgs2rdpys5 https
	xinjiang https
	xinjiang province https
	xlmjn2rnhr https
	xnho2kd7pb https
	xnho2kuiob https
	xwslflisyo https
	xyqdtxbmt https
	y1bobgsss9 https
	y4oesymies https
	year-old student https
	yesterday https
	ykr6dsotqo https
	yvl2dpjpdf https
	yx2p6hpe6s https
	yx4hwx1lhn https
	yyzhxnltjo https
	z4u0i2ahkz https
	z9taakjwvj https
	zbbj0pfkri https
	zdpudnt91s https
	zero mark https
	zlslyfc0n1 https
	zvvdpoy3zd https
	zyfia5fwo6 https
	zz2luwudyc https
	係bug https
	社媒 https

law	
	abt anti-mask law
	animal law
	animal welfare law
	anthem law
	anti anti-mask law festivities
	anti banner law
	anti emergency law
	anti face mask law
	anti mask law
	anti-black tee law
	anti-boycott laws
	anti-emergency laws
	anti-extradition law clashes
	anti-extradition law march
	anti-extradition law protest
	anti-graft law
	antii-mask law
	anti-mask law
	anti-mask law 【蒙面惡
	anti-mask law https
	anti-mask law march
	anti-mask law proposal
	anti-mask law protesors (sic)
	anti-mask law tonight
	appropriate law enforcer
	archive law
	authoritarian laws

	basic law
	censorship laws
	chinese laws
	colonial era law
	colonial laws
	colonial-era emergency law
	colonial-era law
	commercial laws
	common law
	common law charges
	controversial extradition law bill
	controversial law
	criminal defamation laws
	cross-jurisdiction law enforcement
	current extradition law
	cybersecurity law update
	divine law
	draconian colonial law
	draconian laws
	draft extradition law
	draft face mask ban law
	draft law
	emergency anti-mask law
	emergency law
	emergency law https
	enacting emergency law
	enacting laws
	existing laws

	existing privacy laws
	extradition law
	extradition law amendments
	extradition law bill
	extradition law changes
	extradition law concerns
	extradition law debate
	extradition law https
	extradition law plan
	extradition law (sic)
	free info laws
	gender recognition law https
	hk law
	human rights law
	ill law enforcement officer
	intellectual property law
	international law organisations
	intl law obligations
	invoking emergency laws
	law books
	law breakers
	law enforcement pledge
	law enforcement staff
	law enforcement units
	law everyone
	law expert
	law firms
	law https

	law industry
	law makers
	law professor
	law questions
	law report
	law schools
	law society
	law students
	local law enforcement
	local laws
	looming extradition law bill
	mainland law
	martial law
	martial law sucks
	mask ban law
	mask law
	national anthem law
	national security law
	necessary law enforcement function
	oppressive laws
	outdated colonial era law
	outdated rioting laws
	powerful emergency law
	ridiculous anti-mask law
	security law
	solicitors law firm
	sparked extradition law crisis
	stupid mask law

	survived law school
	term law
	unjust law
	using emergency law
	using laws
	water safety law
	wrong anthem law
mask	
	2 ware masks
	anti face mask law
	anti mask
	anti mask law
	anti-face mask ban
	argued mask ban
	banning masks https
	black face masks
	black head mask
	black masks
	broad face mask ban
	carried masks
	controversial mask ban
	controversial mask ban https
	donned masks
	draft face mask ban law
	emergency mask ban
	emergency mask ban effectiveness
	emergency protest mask ban
	face mask ban

	face mask ban announcement
	face mask ban https
	face mask party
	face mask thing
	face masks
	face masks business
	face masks https
	facial mask
	fack mask
	filter masks
	full face gas mask
	full mask
	gas mask
	gray face mask
	hinting needs mask
	ill-thought-out mask ban
	impromptu mask
	jinning masks
	mask ban
	mask ban law
	mask day
	mask law
	mask lol
	masked demonstrators
	masked individuals
	masked man
	masked person
	masked police

	masked protester tonight
	masked protesters
	masked students
	masks https
	masks tomorrow
	masks tonight
	medical mask
	oxygen masks
	protective mask
	public masks
	removing mask
	similar face mask ban
	stormtrooper mask
	stupid mask law
	surgical mask
	unpopular mask ban
	upcoming face mask ban
	wearing face masks
	wearing gas masks
	wearing masks
	wearing masks https
	wearing masks today
police	
	♂ police
	♥ police
	05 police headquarters
	1737 police officer
	2 mill police leadership

	2 police officers
	2212 police officer
	2214 police officer
	2219 police state
	30 police vehicles
	3000 police officers
	accused police
	actual police state
	admiralty police
	against police brutality
	alleged police
	alleged police brutality
	alleged police misconduct
	allowing police
	animal police unit
	anti police brutality
	anti-riot police
	approaching police officers
	arbitrary police search
	arguing police
	armed police
	arrrgh police state
	asking police
	assaulting police
	assaulting police officers
	attacking police officers
	australian police
	australian police station

	authentic police officers
	auxiliary police officer
	bald police officer
	baton-wielding police
	beloved police
	berating police
	big police force
	black police
	border police
	brutal police crackdown
	brutal police officers
	caged police
	canadian police
	carrying police gear
	cases police
	ccp-driven policing
	chinese police
	chinese police databases
	circulating police chiefs
	condemning police brutality
	condemning police violence
	control police
	criticising police
	current police organization
	departing police
	departing police vehicle
	detective police constable
	dozen police vans

	driving police vehicles
	endangering police
	excessive police force
	existing police complaint mechanism
	expandable police baton
	facing police brutality
	fair policing
	false police
	female police officers
	following police
	following police violence today
	footbridge police
	footbridge police cordon
	frm polices
	fucking box hill police station
	full-gearred police
	functioning police force
	heavy police presence
	heavy riot police presence
	heckle police officers
	heckled police
	helping police
	highlighting police brutality
	hk police
	hk police custody
	hk police firing
	hk police force
	hk police officers

	hk police patrol
	hk police
	hk traffic police
	hongkong police
	huge police presence
	including police
	incoming police clearance
	independent police commission
	independent police enquiry
	independent police inquiry
	independent police investigation
	internal police inquiry
	interrupting police operation
	involving police
	large police presence
	last police van
	legitimate police officer
	live police round
	local police station
	male police officer
	masked police
	mean police
	mocking police
	moment police
	mongkok police station
	multi-pronged police movements
	nameless police officers
	nearby police residence building

	n't police brutality
	obstructing police
	obstructing police officers
	obtained police approval
	off-duty police
	off-duty police officer
	outrageous police response
	outside police
	overtime pay police officers
	plain-cloth police officer
	plainclothes police
	plainclothes police officers
	plain-clothes police officers
	police abuse https
	police abuses
	police academy
	police act
	police action
	police actions today
	police activity
	police advance
	police advice
	police announcement
	police apologise
	police appeal text https
	police approval
	police arrest
	police assault allegations

	police assistant commander
	police assistant district commander
	police badge
	police bail
	police ban
	police ban rally
	police barricades
	police baton
	police blue-dye water cannon yesterday
	police bomb disposal robot
	police brutality
	police brutality https
	police brutality today
	police calls
	police car
	police car accident
	police charge
	police checkpoints
	police chief
	police claims
	police clash
	police clearance
	police commander
	police conduct
	police conduct searches
	police conduct stop
	police connections
	police cordon

	police corruption
	police crackdown
	police crowds
	police custody
	police custody https
	police defence line
	police defense line
	police defensive line
	police deploy
	police deploy bomb disposal robot
	police deploy pepper spray
	police deploy water cannon
	police dispersal operation
	police dogs
	police doubts
	police duty
	police ends
	police escort
	police families
	police figures
	police fire
	police fire rubber bullets
	police fire water cannon
	police firing blue-dye
	police force
	police force inquiry
	police gear
	police group

	police group head
	police half
	police handgun
	police head
	police headquarters
	police helicopter
	police hqs
	police https
	police identification
	police identification numbers
	police incidents
	police incompetence
	police infighting
	police infiltrators
	police inquiries
	police inspector
	police intelligence division
	police intervention
	police investigation
	police investigation report
	police issue
	police killings
	police letter
	police license
	police lift ban
	police lines
	police manual
	police mgmt

	police militarisation
	police misconduct
	police misconduct corruption collusion
	police movements
	police murders
	police objection
	police officer shoots
	police operations
	police order
	police patrolling
	police pepper
	police permission
	police permit
	police pics
	police ports arms source
	police power
	police practices
	police presence
	police press conference
	police presser yesterday
	police pressers
	police probe
	police projectile
	police prosecution
	police protection order
	police radio
	police raid
	police raid fatalities

	police reform
	police registry
	police regulation
	police repression
	police request
	police resources
	police response
	police retreat
	police rubber bullet
	police security measures
	police shield
	police shooting
	police sightings
	police skirmish
	police source
	police spokesperson yolanda
	police stage
	police state
	police state https
	police state tactics
	police statement
	police station
	police station entrance
	police station https
	police station reading
	police station source
	police stop
	police storm

	police story
	police supporters
	police surveillance
	police sweep
	police swore
	police tactics
	police taunts
	police threat
	police today
	police top brass face barrage
	police uniform
	police use
	police vans
	police vehicles
	police violence
	police violence https
	police warning
	police warrant cards
	police watchdog vice-chair
	police water cannon
	police water cannon truck
	police water cannon truck fires
	police water cannon vehicles
	police water canons
	police whatsoever
	police yesterday
	policing role
	policing systems

	possible police operations
	powerful police weapons
	private police cars
	pro police professionals
	professional police force
	rang police
	raptor police member
	recent police brutality
	red-light-running police car
	resisted police
	retired police woman
	retreating police officers
	riot police
	riot police advances
	riot police chase
	riot police fire
	riot police frontlines
	riot police gears
	riot police https
	riot police officer
	riot police officer push
	riot police rush
	riot police search bus passengers
	riot police source
	riot police squad
	riot police stage
	riot police station
	riot police storm

	riot police target journalists
	riot police today
	routine police violation
	sanlitun police station
	satellite police stations
	saw police
	secret police
	secret police operations
	senior police
	senior police officer
	senior police official
	seven police vehicles
	several police cars
	several police officers
	several police vehicles
	showed police truck
	showing police
	showing police activities
	slashed police officer
	so-called police officers
	strong police presence
	sudden police operation
	suing police
	surrounding police cars
	surveillance police state
	suspected police
	systematic police violence
	tactical unit police

	team riot police
	terrorist police
	thought police
	thr police headquarters
	time police
	top policing
	torch police uses
	totalitarian police states
	tripping police officers
	twatted police
	uk police
	undercover police
	undercover police officers
	uniformed police patrols
	unofficial police frisks
	unprotected police dog
	unstable police
	victorian police
	victorian police station
	violent police
	wanchai police
	wanchai police station
	watched police
	western police station
	whilst police
	young police recruit
protest	
	· midnight protests

	17yo protest medic
	18 year-old protester
	2323 protesters retreat
	2nd mass protest movement
	active protestor
	aggressive counter protest
	airdropping protest statements
	airport protest
	airport sit-in protest
	announced protest sites
	anonymous protesters
	anti-china protests
	anti-democracy protestors
	anti-democratic protestor
	anti-extradition bill protesters
	anti-extradition law protest
	anti-extradition protest
	anti-government protesters home https
	anti-government protests
	anti-gov't protesters
	anti-police violence protest
	anti-totalitarian protest
	anti-totalitarianism protests
	anti-tyranny protests
	arresting protesters
	asian protesters
	assaulted protesters
	assisting protestors

	associate protesters
	assuming protests
	attacked protesters
	attending protests
	authorized protest
	away protesters
	bashing protesters
	beating protesters
	black bloc protesters
	black-clad protesters
	black-clothe protestors
	black-shirted protesters
	blue ribbon protest
	brave protesters
	brief protest
	called protesters cockroaches
	calling protesters
	caused protests
	chain protests
	chanting protest slogans
	chasing protesters
	citing protest unrest
	citing protest unrest https
	citywide protests
	clad protesters
	claiming protestors
	clear protesters
	closed protesters

	communist party protest
	condemning protestors
	countless protesters
	covering protests
	criminalising protesters
	criticised protesters
	crowdfunding protesters
	current protests
	day protest program tonight
	defaming protesters
	defy protest ban
	democracy protesters
	derogatory protest banner
	detained protesters
	discussed protest
	dispersed protesters
	distributing protest resources
	doxxing protesters
	dozen protesters
	driver thx protestors
	early protesters
	elderly protester
	emergency protest mask ban
	enduring protests
	ethnic minority protesters
	expected protests
	extradition bill protest exhibition
	extradition bill protests

	facing protesters
	fake protestors
	fellow protestors
	female protester
	ferry protesters
	filming protestors
	flash mob protests
	flash protest
	flash protest march
	floating protest
	following protests
	footbridge protesters
	frequent protest sites
	fresh protest
	fresh protest https
	front line protesters https
	frontline protesters
	future protesters
	gas mask-clad protesters
	german protester
	global anti-totalitarianism protests
	global climate protest
	grandpa protesters
	great protest
	haired protesters
	hairy protests
	harass protesters
	hard-line protesters

	helping protesters
	hindering protests
	hit-and-run protesters
	hitting protester
	hk prodemocracy protesters
	hk protests
	hoisted protesters
	holding protestor
	hongkong protesters
	hour protest
	huge protest banners
	huge protests
	human chain protest
	illegal protests
	inciting protesters
	including protesters
	increasing protest action
	injured protest leader
	injured protestors
	irresponsible protests
	island-side protest
	joining protests
	leaderless protests
	legal protest
	legendary protest nanas
	legitimate protest
	localised protests
	lunchtime flash protest

	lunchtime protest
	mainstream pro-democracy protest
	major protest
	major protest event
	male protester
	mall protest
	masked protester tonight
	masked protesters
	mass protest
	massive protests
	meanwhile protesters
	months-long anti-government protests
	much protesters
	multi-district protests
	multiple protesters
	national day protests
	non-violent protestors
	ongoing protest clashes
	ongoing protest movement
	ongoing protests
	order protesters
	overnight protests
	paper-burning protest
	peaceful protest
	peaceful protest footage
	peaceful sit-in protests
	planned protests
	polite protesters

	polite protesters https
	political protesters
	popular protest anthems
	popular protests
	ppl boycott protesters
	predominant protester
	pressed protester
	print protest material ?
	pro-beijing protesters
	pro-bj protests
	pro-china protestors
	pro-dem protesters
	pro-democracy protesters
	protest ads
	protest anthem
	protest applicant
	protest area
	protest arrestees
	protest art
	protest backers
	protest ban
	protest banner
	protest barricade
	protest camp
	protest clashes
	protest co-organiser
	protest coverage
	protest crackdown

	protest crisis
	protest culture https
	protest demands
	protest designs
	protest firings
	protest flyers
	protest gear
	protest gov't use
	protest group
	protest https
	protest leader
	protest makeover
	protest march
	protest march https
	protest mediator
	protest messages
	protest model
	protest moment
	protest movement
	protest movement https
	protest organiser
	protest organizer
	protest photos
	protest pics
	protest pictures
	protest pooch
	protest pop-up store
	protest props

	protest rally
	protest response
	protest restrictions
	protest row
	protest safety app
	protest schedule
	protest sign
	protest site
	protest slogans
	protest song
	protest target
	protest tensions
	protest threats
	protest today https
	protest turnout
	protest video game app https
	protest violence
	protest volunteer
	protest zone
	protester blockade
	protester molotovs
	protester shot
	protester strip
	protesters side
	protesters today
	protesters tonight
	protesting couples
	protesting crowds

	protesting people
	protesting residents
	protestor info
	protestor tomorrow
	protestor treatment
	protestors exit routes
	protestors lookalikes
	protestors vandalism
	protests ebb
	protests rage
	public protest
	pursuing protesters
	radical protesters
	rare protest
	real protesters
	recent protests
	regular protest
	remaining protesters
	restrained protesters
	retreating protesters
	rival protesters
	scheduled unauthorised protest
	screaming protest slogans
	self-determination protests
	selling protest gear
	several protesters
	shooting protesters
	silent protest

	silver-haired protesters
	similar protests
	singing protest anthem
	singing protest anthem glory
	sit-in protests
	slashed protesters
	small protest
	small protest underway
	smearing protestors
	so-called protestors
	spirit protestors
	sprayed protesters
	staff protest
	standing protesters
	station protesters
	street protests
	student protester
	supported protesters
	suppressing protestors
	taunting protesters
	teen protester
	teenage protestor
	trapped protesters
	unapproved protest
	unarmed protesters
	unarmed woman protester
	unauthorised protest
	unauthorised protest march

	unauthorized protest
	understanding protestors
	unknown protestor
	upcoming protest schedule
	upcoming protests
	urged protesters
	urging protesters
	usually protesters
	violent protesters
	violent protestors tonight
	violent protests yesterday
	virgin protest organiser
	w protestors
	warning protesters
	warning protesters bystanders
	well-known anti-police protest chant
	wheelchair-bound protesters
	wildcat protests
	women protesters
	year-old protester
	year-old protester shot
	yellow vests protests
	young pro-democracy protester
	young protester
riot	
	96 rioting case
	anti riot cops
	blame rioters

	communist riot
	cunning rioters
	encouraging rioters
	evil rioters
	full riot gear
	hardly rioting types
	heavy riot police presence
	leftist riots
	outdated rioting laws
	real rioters
	ridiculous riot charges
	riot cop flash light
	riot cops
	riot ex-police
	riot fighers (sic)
	riot gear
	riot gear helmets
	riot officers
	riot officers increases
	riot police
	riot police advances
	riot police chase
	riot police fire
	riot police frontlines
	riot police gears
	riot police https
	riot police officer
	riot police officer push

	riot police rush
	riot police search bus passengers
	riot police source
	riot police squad
	riot police stage
	riot police station
	riot police storm
	riot police target journalists
	riot police today
	riot spray today
	rioters https
	rioting charges
	rioting conviction
	rioting offences
	rioting today
	round riot shields
	saying rioters
	team riot police
	violent rioters
	riot police
	heavy riot police presence
	riot police
	riot police advances
	riot police chase
	riot police fire
	riot police frontlines
	riot police gears
	riot police https

	riot police officer
	riot police officer push
	riot police rush
	riot police search bus passengers
	riot police source
	riot police squad
	riot police stage
	riot police station
	riot police storm
	riot police target journalists
	riot police today
	team riot police

Table 3: Autocoded Top-Level Topics and Related Subtopics from Combined Tweetstream Sets

Besides various typographical errors (all left in place for fidelity and accuracy), another point of interest emerges. For example, there are references to cyber-based combat, like doxing. This is one of the first large mass demonstrations in the cyber age, in which all sides have heightened capabilities for using hacking, geo-locational data, computational analysis of text and imagery and video, facial recognition technologies, artificial intelligence applications (data analysis, predictive analytics), and others.

APPENDIX B: AUTOCODED TOPICS BY SEPARATE SOCIAL

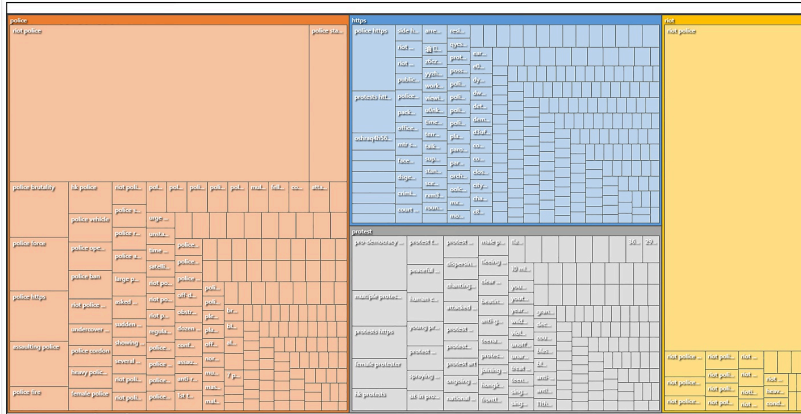
ACCOUNT TWEETSTREAM SETS

A combined analysis of a text set provides a meta-level analysis. The respective social media accounts, when analyzed individually, show more localized interests. Each of the Tweetsets here were processed at the cell level of granularity (not sentence or paragraph levels) using NVivo 12 Plus. (**Appendix B**)

To review, the respective accounts are as follows in alphabetical order by the listed name on the landing page (not the @account name). The auto-extracted themes follow, in this order:

- #HKResist Fight for Hong Kong @Fight4HongKong;
- antiELAB @anti_elab;
- Democracy for Hong Kong @Democracy4HK;
- Fight for Freedom, Stand for Hong Kong @Stand_with_HK;
- Freedom Hong Kong @FreedomHKG;
- Global Solidarity HK @GlobalSolidHK;
- HK Demo Now @hkdemo now;
- HK Protestors Share Channel @wyy19668645;
- Hong Kong – Be Water @BeWaterHKG;
- Hong Kong Free Press @HongKongFP;
- Hong Kong Protest @HongKongProtest;
- Hong Kong Protest News @ProtestHongKong;
- Hong Kong Protests 2019 @HKGProtests;
- Hong Kong Watch @hk_watch;
- Hong Kong World City @HKWORLD CITY;
- Progressive Lawyers Group @HongKongPLG

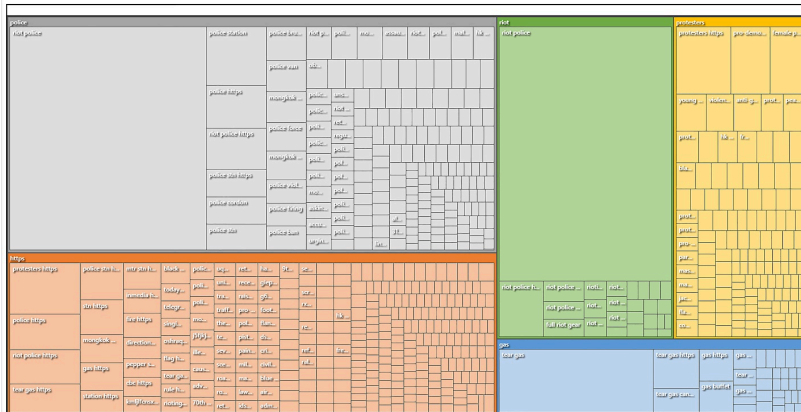
@Fight4HongKong reads as an advocacy account, with a focus on achieving protest messaging, while trying to bypass the “police” and “riot police.” (Figure 16)



Autocoded Topics in the @Fight4HongKong Microblogging Account on Twitter

Figure 16: Autocoded Topics in the @Fight4HongKong Microblogging Account on Twitter

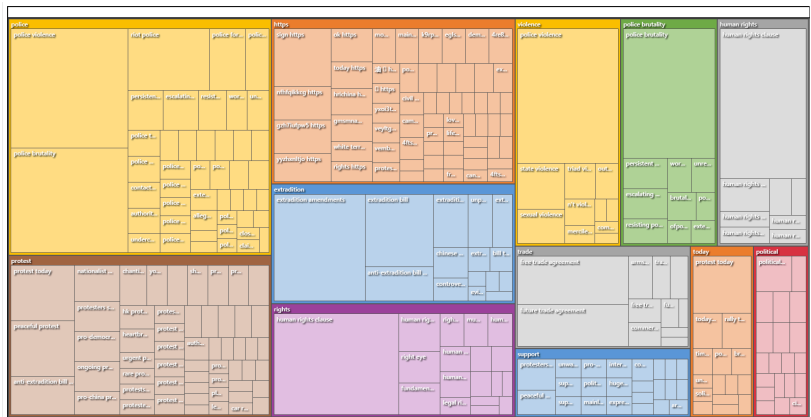
@anti_elab includes mentions of “gas” and tear gas, which have been a central law enforcement tool. The “gas” can also refer to the gasoline projectiles thrown by some demonstrators. (Figure 17)



Autocoded Topics in the @anti_elab Microblogging Account on Twitter

Figure 17: Autocoded Topics in the @anti_elab Microblogging Account on Twitter

@DemocracyforHK shows a diversity of concepts, including “human rights” and protests against “police brutality” and “violence” explicitly (Figure 18). The treemap diagram shows more sophistication and complexity of messaging.

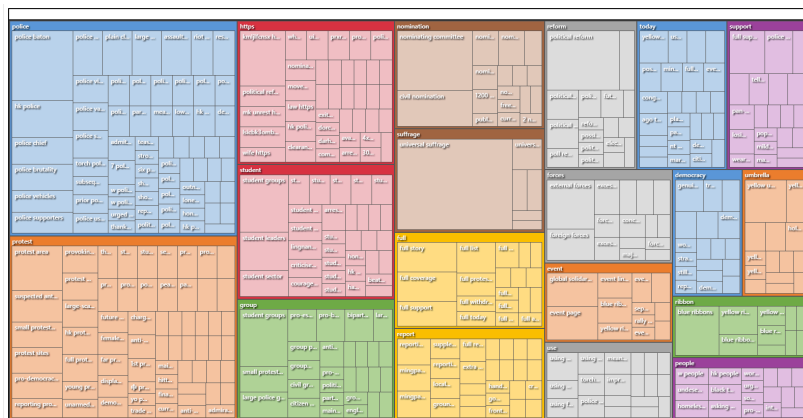


Autocoded Topics in the @DemocracyforHK Microblogging Account on Twitter

Figure 18: Autocoded Topics in the @DemocracyforHK Microblogging Account on Twitter

@Stand_with_HK engages issues in sophisticated way as well, including ideas of “universal values” and “human dignity,” to make their case to the public for the benefits of democracy (Figure 19). Its social group argues against the “emergency laws” and “anti-masking ban”.

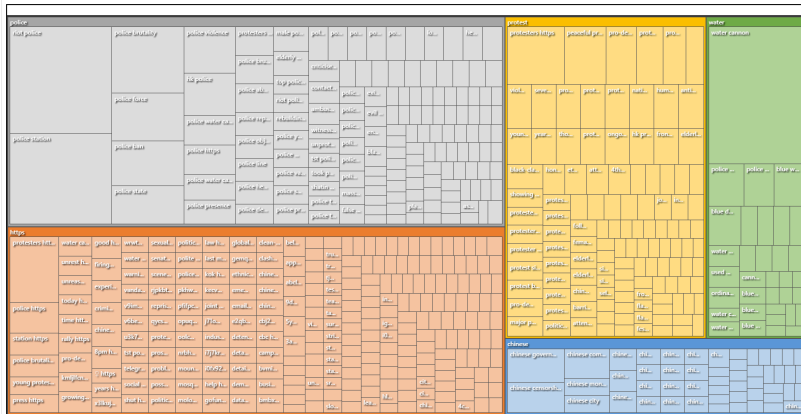
@GlobalSolidHK explicitly refers to “democracy” and the 2014 “umbrella” movement asking for universal suffrage. (Figure 21)



Autocoded Topics in the @GlobalSolidHK Microblogging Account on Twitter

Figure 21: Autocoded Topics in the @GlobalSolidHK Microblogging Account on Twitter

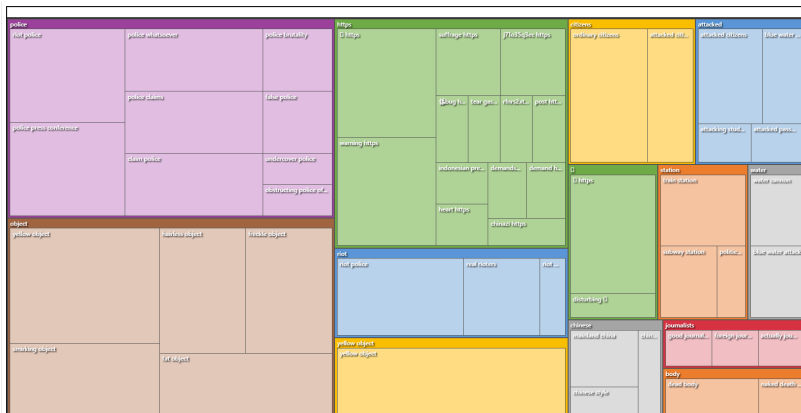
@hkddemonow supports the space for protest against “police” and the uses of “water cannon” (Figure 22).



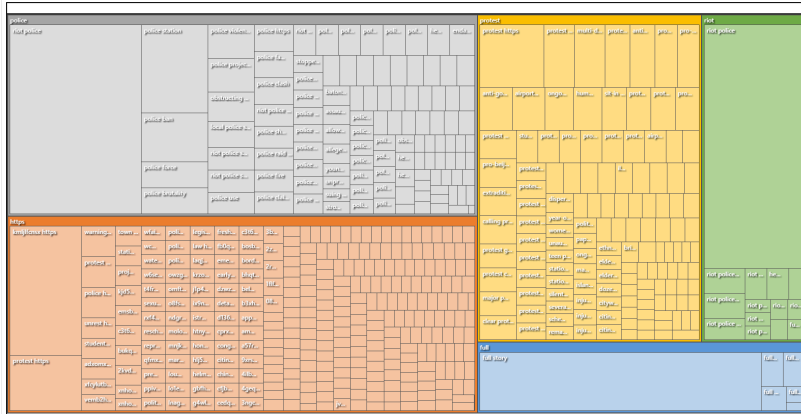
Autocoded Topics in the @hkddemonow Microblogging Account on Twitter

Figure 22: Autocoded Topics in the @hkddemonow Microblogging Account on Twitter

@wyy19668645 is advertised as the protestor's share channel, possibly to help inform and coordinate the protest efforts. The police are mentioned foremost, along with various "object" types. Journalists are also mentioned. (Figure 23)



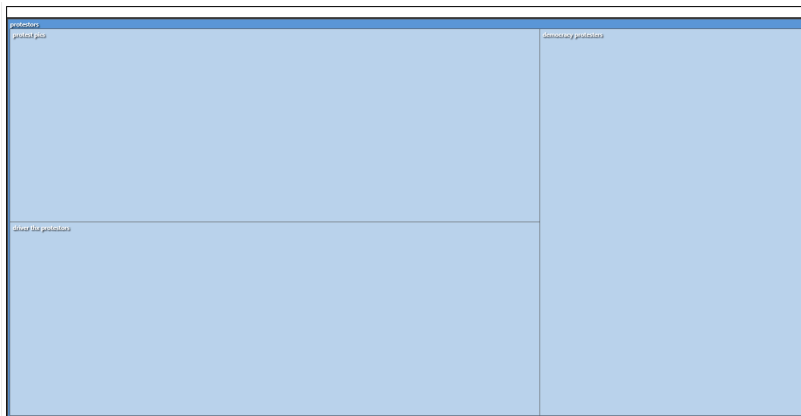
Autocoded Topics in the @wyy19668645 Microblogging Account on Twitter



Autocoded Topics in the @HongKongFP Microblogging Account on Twitter

Figure 25: Autocoded Topics in the @HongKongFP Microblogging Account on Twitter

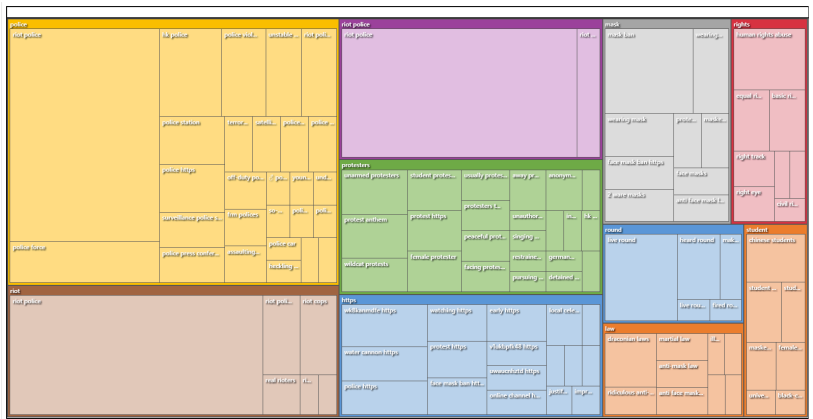
@HongKongProtest has few messages focused around “protestors.” This account only has one topic, with three related subtopics. (Figure 26)



Autocoded Topics in the @HongKongProtest Microblogging Account on Twitter

Figure 26: Autocoded Topics in the @HongKongProtest Microblogging Account on Twitter

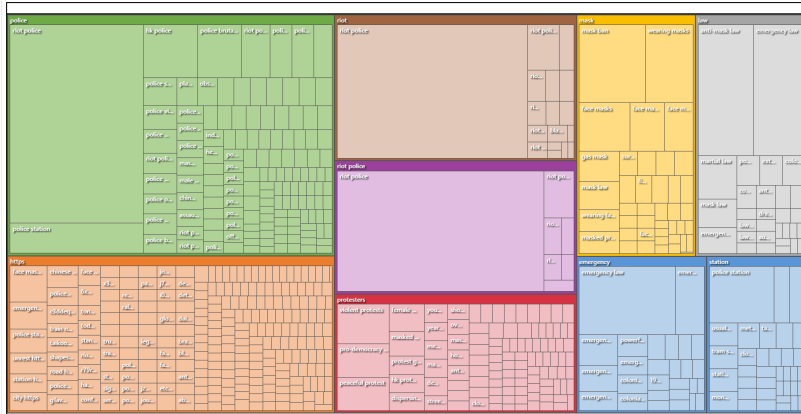
@ProtestHongKong has topics and subtopics that focus on the action on the streets between protestors and police. The clashes attain world attention, and they validate the respective roles of the protestors and the police, in each of their meta-narratives. The protestors are advocating for democracy and human rights, and the police are maintaining a semblance of order. (Figure 27)



Autocoded Topics in the @ProtestHongKong Microblogging Account on Twitter

Figure 27: Autocoded Topics in the @ProtestHongKong Microblogging Account on Twitter

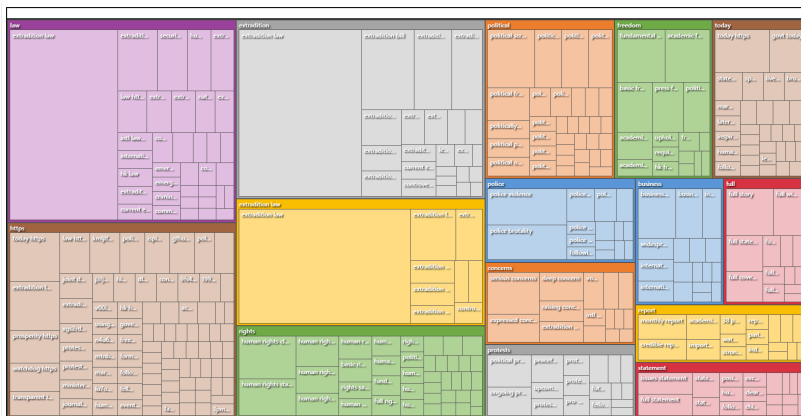
@HKGProtests capture a complexity of interacting topics. (Figure 28)



Autocoded Topics in the @HKGProtests Microblogging Account on Twitter

Figure 28: Autocoded Topics in the @HKGProtests Microblogging Account on Twitter

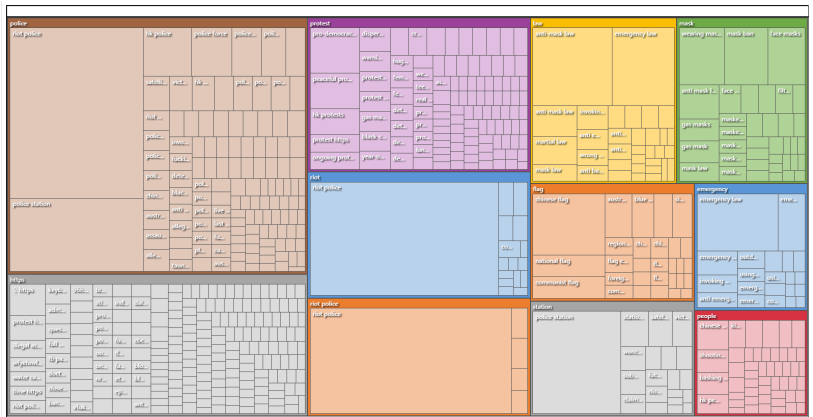
@hk_watch maintains a focus on the extradition law as multiple top-level topics with related sub-topics. This social network also contains mentions of larger concerns, like the business community. This engages a range of complex interrelated topics. (Figure 29)



Autocoded Topics in the @hk_watch Microblogging Account on Twitter

Figure 29: Autocoded Topics in the @hk_watch Microblogging Account on Twitter

The @HKWORLDCITY Tweetstream focuses on “police” and “protest,” with a sense of “emergency” (Figure 30). There are references to the subway “station.”



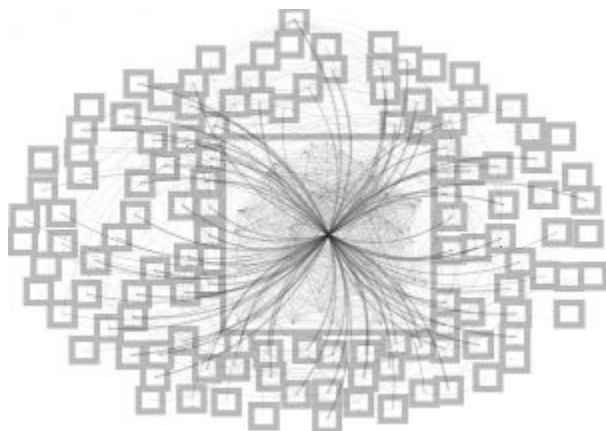
Autocoded Topics in the @HKWORLDCITY Microblogging Account on Twitter

Figure 30: Autocoded Topics in the @HKWORLDCITY Microblogging Account on Twitter

@HongKongPLG, as a progressive lawyers group, shows their support of more liberal society, with a main focus on “extradition,” “law,” “bill,” “legal” in the context of “protest” and “street.” (Figure 31)

PART V

PART 5: PREDATORY HUMAN INTERRELATING



7

THE REMOTE WOO: EXPLORING FAUX TRANSNATIONAL INTERPERSONAL ROMANCE IN SOCIAL IMAGERY

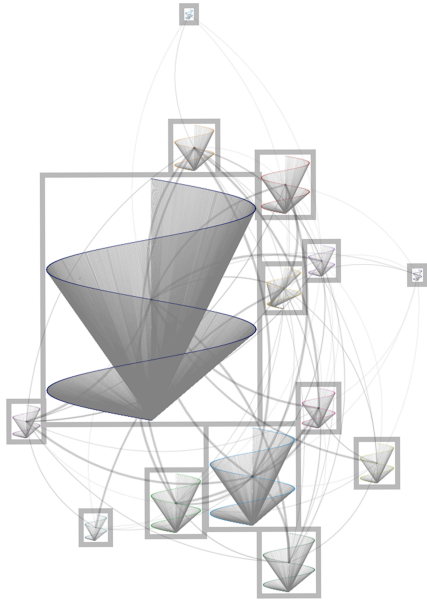
Shalin Hai-Jew

Abstract

One aspect of globalization combined with information and communications technology (ICT) and social media is the advent of online data and resulting long-distance romances. The relationships that have come to the fore, though, are about transnational (and more local) romance scams perpetrated online that result in loss of funds, loss of time, loss of personal dignity, loss of personal reputation, and other harms. This work explores social imagery to better understand some of the messaging behind the “remote woo” and romance online and romance fraud and what insights these may provide on this issue, in this exploratory study.

Key Words

Remote Woo, Strategic Transnational Communications, Faux Interpersonal Romance, Cyber Romance, Romance Fraud



Introduction

"I want your ugly, I want your disease

I want your everything as long as it's free

I want your love

Love, love, love, I want your love, hey

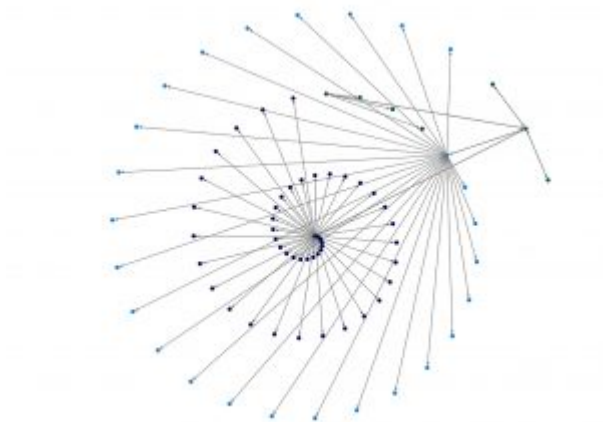
I want your drama, the touch of your hand (hey)

I want your leather-studded kiss in the sand

I want your love

Love, love, love, I want your love"

— Lady Gaga in "Bad Romance" (2009)



“It’s strange what desire will make foolish people do.

I’d never dreamed that I’d meet somebody like you.”

— Chris Isaak in “Wicked Game” (1989)



Human courtship has existed since the beginning of time and in various forms of wooing (trying to attain the love and favor of another). When two (or more) can find a match, align, and come to some agreement, they can create relationships that exist for

many years, and more rarely, even a lifetime. The advent of cyber has enriched this space with more variety, according to Aaron Ben-Ze'ev (2015):

Cyberspace offers an alternative romantic (and sexual) environment that provides people with easy access to many tempting options. It is a kind of huge, dynamic, electronic bedroom loaded with imaginative interactions. This novel environment has a significant impact upon offline romantic activities. This impact is expressed in increased opportunities, greater self-disclosure, decreased vulnerability, greater satisfaction, lesser commitment, increase in violations of boundaries, and reduced exclusivity. Cyberspace provides technical tools that facilitate the opportunity to conduct several romantic (and sexual) relationships at the same time. Although cyberlove and cybersex are likely to become more popular, they will not replace offline relationships, but rather complement them. (p. 813)

In advertising and on social media, there are meta-messages of #soulmates, #theone, and #relationshipgoals. Advertisements for wedding rings talk about #forever and #eternity. Interpersonal relationships and love are to be celebrated. Dating sites of various types emerged with many of the same tropes.

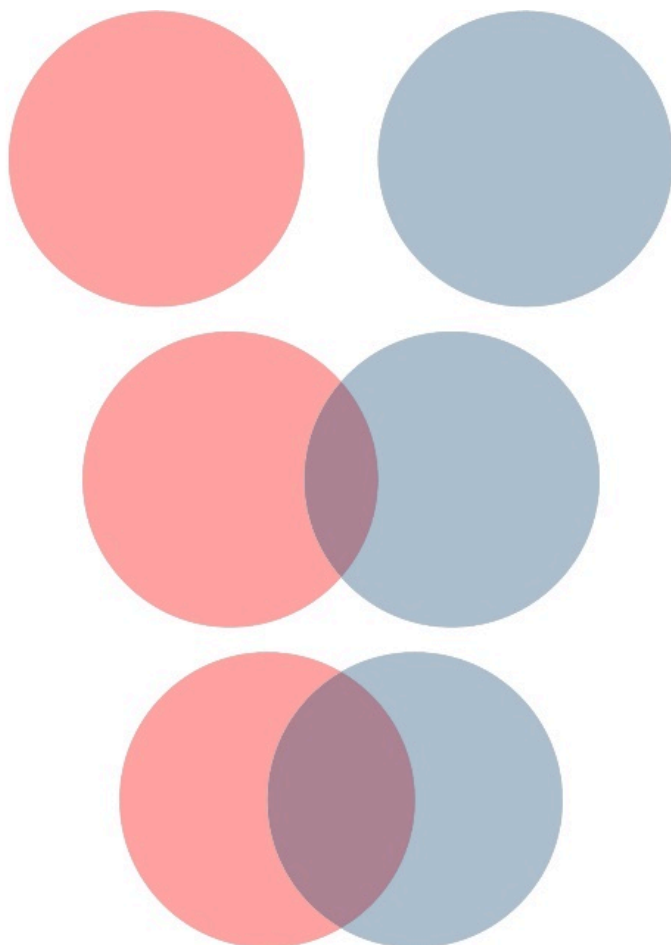
Some of the early online ventures for “interpersonal connections” was thought (naively?) to shift focuses from physical attractiveness to more substantive aspects of a person (Cooper & Sportolari, 1997, pp. 7 – 9). Online dating has reached a “tipping point” and has wide acceptance globally (Cabrera-Frias, 2013, p. G:1). As a global industry, “e-love networks have proliferated since the mid-1990s and are expected to generate \$1.9 billion by 2012” (Rege, July – Dec. 2009, p. 494), with 1,400 such sites by the late 2000s (Scott, 2009, as cited in Rege, July – Dec. 2009, p. 495) and hundreds of millions of dollars spent annually for dating services. As “business-to-consumer” electronic-business models,

dating applications approaches proved highly lucrative (Singh & Jackson, 2015, p. 482). Various mobile online dating apps have peoples swiping left (no) and swiping right (yes) and agreeing to meet-ups and sexual assignations (and having an impact on the spread of sexually transmitted infections or “STIs”), according to the U.S. Centers for Disease Control and Prevention (Saleh, July 27, 2019). Research into these sites found many singletons looking for love as well as many marrieds (and dedicated dating sites for those married looking for “side action”). Online dating is “normative” in Western society (Whitty & Buchanan, 2012, p. 3), and it has popularized in many places around the world (although the expectations for the technologies seem to differ based on cultural contexts). One work describes a conservative society in which youth online dating and romance is typified by “approval of their parents for relationships, marriage and having children” and “not idealised by sexual activities” (Rambaree, 2008, p. 34). Building relationships online requires regular contact over a continuous period of time, during which each learns about the other and they “negotiate a common relationship definition” (Döring, 2002, p. 3). A study of those who’ve experienced “romantic net relationships” suggests that these experiences are not “an exotic fringe phenomenon nor an epidemic mass phenomenon” but part of the everyday (Döring, 2002, p. 5). For some, the experiences sound euphoric and personally meaningful; for others, it was just an experience that did not result in desired ends. In the Global South, Facebook serves as “the one-stop-shop for social activity among the poor” and so is the socio-technical nexus for the pursuit of “sex, romance, and love” (Arora & Scheiber, 2017, p. 408), so such activities are not only occurring on dedicated sites. [“Netsex” (or “cybersex” or sex via online means) was found to have become a thing on an academic mailing list among members of an online group, with effects on offline life (Marshall, 2003, p. 229).]

More commonly, people are pursuing a less serious endeavor; they are socializing and pursuing pleasure; they are engaging

in a seduction game, to draw or attract another to compromise themselves—in order to brag on social media. Many are pursuing “romance” [“a feeling of excitement and mystery associated with love” and “a quality of feeling of mystery, excitement, and remoteness from everyday life” (“romance,” 2019)], affection, feelings of self-worth, sex, or long-term relationships, or some combination of interests. If romance is popularly linked to rose-colored glasses, there may be something in that it may affect judgment and provide a positive filter or bias. In terms of risks, online dating risks include “the prospect of deceit, the possibility of encountering dangerous and suspect people online, as well as risks of a sexual, emotional, and / or physical nature” (Couch, Liamputtong, & Pitts, 2012, as cited in Luu, Land, & Chin, 2017, p. 2430).

Disconnected people look for a romantic connection, whether it is partial and temporary or longer term. (Figure 1) Misreading the state of the relationship entails risk, where a romantic come-on can turn into a con-on (confidence trick).



Disconnection to Connection (or Not)

This visual shows red and blue circles separate in an initial phase and overlapping in subsequent ones.

Figure 1: Disconnection to Connection (or Not)

Among the would-be daters, some types of suitors both abroad and domestic are after not love but money and other resources

(like a “green card” or ability to migrate to another country as a foreign spouse), in a type of “social engineering” attack (in a cyber security sense), which is a modern-day version of an old-school confidence trick (or “con”), known as “dating fraud,” “relationship fraud,” and “sweetheart swindles” (Cross, Dragiewicz, & Richards, 2018, p. 1304). Romance scams are considered a subcategory of “imposter scams” (by the US Federal Trade Commission), with individuals pretending to be “government, business or tech support services” to trick people out of money (some \$328 million in 2017, sent out through wire transfers and gift cards) (Doubek, Feb. 13, 2019, p. 3). In 2018, Americans lost \$1.5 billion to fraud (Exley, Dec. 5, 2019). In other conceptualizations, romance scams are part of an “advance fee fraud” and “mass-marketing fraud” (the message of love and anticipated connection used to induce monetary giving) (Whitty, 2018, p. 105). Responding to faked identities, people have been lured to “click on malicious links, make fraudulent payments, or download malicious attachments” (Williams, Beardmore, & Joinson, 2017, p. 412). The “mark” (or “dupe”) believes he or she is in a genuine relationship because of efforts by the “offender” to create and maintain a sense of “trust and rapport” (Cross, Dragiewicz, & Richards, 2018, p. 1304). The romance scam originated many years prior as “paper mail fraud” and as an online threat in 2008, with losses ranging from £50 -£240,000 per victim, according to the UK Serious Organised Crime Agency (Whitty & Buchanan, 2012, p. 2).

The “virtuality” of online, for a period of time, became a space for an expression of the pseudo-real. People could commit to so-called “cohabitation online” where people could create a sense of virtual domesticity (Lee & Chang, n.d., p. 1) and even create virtual marriages online. These practices do not seem like a practice with any seriousness currently. Fantasy cyber-affairs can have real effects on social “trust, self-esteem, and integrity in a relationship” (Maheu, 1999, p. 1). Married couples setting boundaries among themselves so as not to break bonds and trust with

online activities, given the risks of “online infidelities” (Helsper & Whitty, 2010). The practices of sexual texting (sexting) and taking sexualized selfies (self-taken photos) are other in-world practices that overlap with cyber (Lee, 2018, p. 233). Various types of cyber-sex exists in the “twilight zone between virtual reality and virtual fantasy” (Dryer & Lijtmaer, Feb. 2007, p. 1). Online was seen as a space for the exploration of “virtual sexual fantasies” (Barnes, 1996, p. 34). More modern technologies bring together the virtual-physical sexual with virtually controlled sex toys and sex dolls (Ho, 2003, p. 2), adding different dimensions to “cybersex”. In general, there is more intimacy in face-to-face than computer-mediated or virtual romantic relationships (Scott, Mottarella, & Lavooy, 2006).

The “cyber-physical confluence” applies to romance, in both the virtual and the real. [Not everything that happens online stays online, and likewise in the physical real.] Certainly, there are externalities and spillovers from the real to cyber and back. People engage in “romance tourism” (and “sex tourism”), with various destination countries (often poor ones serving richer ones) offering recreational endeavors. International courtship via cyber (such as through “pen-pal agencies,” “mail-order bride sites,” “match-making” services (Agrawal, 2015) may include those seeking marriage. There are various “dot.cons” for those who are trying to procure not only brides but children for adoptions (Letherby & Marchbank, 2012).

Romance scams cost those in the U.S. some \$143 million in 2018, according to the U.S. Federal Trade Commission, and with a median amount lost at \$2,600 (Doubek, Feb. 13, 2019; Fletcher, Feb. 12, 2019). A single mother in Texas who got caught up in such a romance scam lost just under half a million dollars (Martin, Nov. 18, 2019), even though she was warned about this “relationship” by her bank and others. The illusory relationship was too alluring, and even though she was aware of how much she was spending, she kept thinking that she could earn back what

she'd lost in something similar to a gambler's compulsion (in her own explanation). Many who have been scammed are reluctant to admit that they were wrong and will continue in an erroneous belief even when that is contravened by facts (Barker, as cited in Bartlett, Nov. 24, 2019, p. 18). In 2016, the Australian Consumer and Competition Commission reported that there was \$83,563,599 in scam losses that year with "dating and romance and investment scams (that) made up the bulk of the losses" (Lee, 2018, p. 226). In 2011, the costs of fraud in the United Kingdom was "over £38 billion a year" and some "6.5 per cent of the UK adult population" fall victim to scams annually (Whitty & Buchanan, 2012, p. 2). The nature of the crime suggests that victims may feel shame and therefore fail to report the fraud (Whitty & Buchanan, 2012, p. 8). Various estimates suggest that as few as 10 – 15% of such cases are reported (CBC News, 2017; Brenhoff, 2017, as cited in Cross, Dragiewicz, & Richards, 2018, p. 1303). Thousands of victims are affected by romance fraud globally (Cross, Dragiewicz, & Richards, 2018, p. 1303). A study by the American Association of Retired Persons (AARP suggests that four percent of U.S. adults were "victims of an online relationship scam" (Doubek, Feb. 13, 2019, p. 2).

Whatever the mental framing and pre-conceptions around particular social and cultural practices, like dating and the pursuit of romance, these practices do not occur in isolation from other phenomena in the world: individual and group health, finances, commercial endeavors and industries, work, lifestyle, and others. All choices have "opportunity costs" (doing one thing precludes doing some other things) but also potentials for actual relationships, even as they are a fast diminishing good in many cases. Demographic factors also come into play in different populations, with the relative availability of romantic partners changing based on a variety of factors.

Review of the Literature

Cyberspace is a common nexus for deceptions because of “the similarity between reality and digitally generated forms of communication (text, video, etc.)” (Thomas, 2008, p. 4). Humans have cognitive biases, which make them prone “to accept rewards, romance, charity, or other feelings of sensitivity and emotion” and to confuse “what is false is real, and vice versa” (Thomas, 2008, p. 4). A common deception includes “pretexting” (“the act of creating and using an invented scenario”...to “persuade a target to release information or perform an action” (Thomas, 2008, p. 4). When people are in a heightened emotional state, such as romance, they are more motivated to fall for various cyber scams (Thomas, 2008, p. 6). Messages that leave a person in a “hot state” can affect that person’s decision-making (as compared to decision making in a “cold state”). People may also enter the dating space with culturally-taught mental “scripts” of dating, with attendant manners and civilities, and tendencies towards trying to impress the other and “put the best foot forward,” and they may erroneously assume that those scripts are in play with others. Those who keep cultural frames top-of-mind may miss cues that others are acting in out-of-role behaviors and to other ends. They may read others’ profile-based assertions of careers and professions and assume that those might suggest particular traits of intelligence or class or moneys or personality features: “She is an engineer, so she probably...” “He is a construction worker, so he probably...” They may suspend (protective) disbeliefs and give others the benefit of the doubt. They may take a lifetime of learning about people and assume that the social rules of attraction may not apply or that they may be the exception and not the rule (even if that assumption is not statistically valid).

They may focus on hopes and not costs. Instead of paying attention to their own expenditures, they may focus on a future that will never come and fail to notice the one-directional giving of resources and the “red flags” (warnings) of faux “relationship.”

Human mental shortcuts may also render cool judgment moot: for example, a person's physical "hotness" (attractiveness) may be conflated with physical health, mental well-being, and regular employment. In some cases, what is being transactionally traded is human "attention" (and social performance and personal theatre) for "funds" (Schifferle, Feb. 12, 2019), and in the colloquial, "warm fuzzies" and schmaltz for "cold hard cash." The duped can believe in his/her fundamental attractiveness and can brag about the relationship, and the con can walk off with funds. In some cases, actual human attention is not even in play; automated agents like chatbots are sometimes employed to do the wooing (Thomas, 2008, p. 6). [With the advance in AI, chatbots have become even more believable and able to converse around a variety of issues in improvisational ways. "Flirt" modules are not difficult to include in a natural language processing (NLP)-enabled 'bot.]

Early research found that those who form new relationships online vs. those who didn't did not differ in fundamental ways on measures of social skills or experienced loneliness (Bonebrake, 2002, p. 555). The Online Relationship Initiation Scale (ORIS), a validated instrument, suggests that particular variables may be found in those who initiate online relationships. This study found that "men were more likely than women to initiate online relationships" and that such initiation "was not strongly associated with perceived social support, but was positively related to financial distress, and willingness to engage in infidelity or unprotected sex" (Harris & Aboujaoude, 2016, p. 487). Such online relationship initiation "was negatively associated with age and satisfaction with life" (Harris & Aboujaoude, 2016, p. 487). The co-researchers suggest that those "struggling offline may find online technologies of some benefit to their personal lives" (Harris & Aboujaoude, 2016, p. 491).

People use online dating websites in different ways and for different gratifications depending in part on their "biological and

personality traits.” One cross-sectional survey study found some patterns:

Specifically, women and homosexuals were found to be more neurotic, women were more agreeable, and homosexuals were more open to experiences. Homosexual users sought a wider range of gratifications (relationship, sex partner, distraction, and convenient companion) from online dating sites than their heterosexual counterparts. Women were less likely to use ODSs (online dating sites) to find sexual partners, but more likely to use ODSs to be social. Those who were neurotic use dating sites to build an identity, as a convenient companion, and as a distraction. People who are open to experiences were found to use dating sites to be social. Disagreeable people use dating sites because of peer pressure and as a status symbol, and conscientious people were found to use dating sites to find a relationship. (Clemens, Atkin, & Krishnan, 2015, p. 120)

Individuals “with high self-esteem were less motivated to use cyber dating to hook up” (Bryant & Sheldon, 2017, p. 1) or to meet to form a relationship or to engage in a sexual rendezvous (known colloquially as a “booty call”). “Older users and women were more likely” to use dating sites for “relationship reasons” (Bryant & Sheldon, 2017, p. 1). When the technologies were fairly new, many who used such sites may have been viewed in a somewhat derogatory way. However, the uses of such sites have become more common and more socially accepted over time, in the West.

The promise of marriage or a path towards marriage is an inducement in some cases. Researchers write: “In the case of a widow, divorcee, single lady or estranged wife, perceived to be rich or credit-worthy, a proposal of intention to marry will prevail” (Ojilere, Nnabue, & Oraegbunam, 2018, p. 6). In other social media postings, the promise of “marriage and romance” served

as an inducement for women to join the fighters of the Islamic State (Liang, 2015, p. 3). [In this case, young women traveled to war zones only to be quickly widowed and married multiple times because of a repeat of the cycle.] In the sexual tourism space, researchers have observed the dangling of marriage to set up sexual assignments for when particular men visited a particular locale (Enteen, 2005), in brazen and cringe-worthy postings.

Interestingly, for others, escaping a relationship or a marriage in the real world...with fantasy...is an appeal to go online. Online anonymity has its own appeal:

Another element inherent in anonymity that heavily contributes to its allure is fantasy: one can project onto the screen one's wildest imaginings. The conversation is limited only by the very limits of one's imagination. The lack of identifying information, of visual input (in some cases), of a real body next to one's own leads individuals to co-create an imaginative fantasy ambiance whose magnetism can be very strong. These are unlimited possibilities to fill in the blanks that computer-mediated communication creates by its very disembodied, virtual, machine-powered nature. The persona of the virtual partner usually evokes a very powerful response; however, this response may have more to do with the individual's own projecting mind than with the virtual partner's real personality or physical characteristics. In this respect, potent idealizations add up to produce an irresistible aura that captivates, engulfs, and soothes the chat room participant. (Mileham, 2007, p. 17)

People go online to form "romantic" relationships for any number of reasons, some seen as more wholesome than others.

Romance scammer profiles

Researchers have identified different types of "scam-cultures"

informing romance scammers (Rege, July – Dec. 2009, p. 495). Pursuing moneys from the unwitting abroad are seen as part of sport, in a “hunter-and-antelope relationship,” and are celebrated in hip-hop music in the Nigerian context (Lazarus, 2018, p. 63). Here, the so-called “Yahoo boys” are lauded for their cyber-fraud abilities.

In general, most were “patient in grooming their victims” with some “six to eight month”(s) of invested time and “enduring, rational, planned, and coordinated” actions (Rege, July – Dec. 2009, p. 504). They treated this endeavor like a full-time job and with different units taking on specific tasks. Some hired “psychologists who assisted in further psychologically trapping victims” (CBC, 2008, as cited in Rege, July – Dec. 2009, p. 504). Another study found that the “earliest stages of the relationship were intentionally performed to build rapport and develop friendship and solidarity between strangers,” including the employment of “politeness strategies” (Brown & Levinson, 1987, as cited in Shaari, Kamaluddin, Paizi, & Mohd, 2019, p. 108). One researcher, in a multimodal study, described a basic “anatomy” of the scam, in five stages: “In the first stage the criminal creates an attractive profile to draw in the victim, in Stage 2 the criminal grooms the victim, priming them to send money, in Stage 3 the criminal begins to request funds from the victim (there a (sic) four potential trajectories at this stage), in Stage 5 (sic), which only a few went through, the victim is sexually abused via cyber-sex, and finally Stage 5 is the revelation. (Whitty, 2015). A seven-stage summary of this amended model includes the following:

- (1) The victim being motivated to find an ideal partner,
- (2) the victim being presented with the ideal profile,
- (3) the grooming process,
- (4) the sting (crisis),
- (5) continuation of the scam,
- (6) sexual abuse and
- (7) revictimization (Whitty, 2013b, as cited in Cross, Dragiewicz, & Richards, 2018, p. 1306).

Another and more recent model involves three stages and a number of sub-steps (in a Malaysian context):

Stage 1: Setting up contact and establish(ing) relationship

Stage 2: Gaining trust (claim common ground) and developing personal relationship

- Step 1: Claim common Ground—Scammer shows similarities between him and target victim.
- Step 2: Scammer notices and attend(s) to victim's interests and wants.
- Step 3: Scammer shows concern of victim's needs and wants.
- Step 4: Scammer exaggerates interest/sympathy/approval/ towards victim.
- Step 5: Scammer strengthens his interest towards the victim (or at least makes victim feels as it is).
- Step 6: Scammer makes interesting offers.
- Step 7: Scammer shows the act of togetherness by including victim into his future plan.
- Step 8: Scammer urges for reasons or gives reasons for his action.
- Step 9: Scammer indicates that he wants victim to commit herself to do something (for) him.
- Step 10: Scammer offers interesting gifts.
- Step 11: Both scammer and victim show sympathy, understanding, cooperation towards each other.
- Step 12: Scammer assumes a different character (authority figure, lawyers, and police) to present a new excuse for the money.

Stage 3: Maintaining scam, the bait and execution.

- Step 13: Orders and request: Scammer indicates that he wants victim to do or avoid from doing something.
- Step 14: Suggestions and / or advice: Scammer convinces victim to do what he says.

- Step 15: Sending reminders: Scammer reminds or indicates that victim should remember to do something.
- Step 16: Threats, warnings, dares: Scammer indicates that he will take certain actions if victims refuse to do something. (Shaari, Kamaluddin, Paizi, & Mohd, 2019, p. 110)

Other studies suggest that certain psychological features, such as the Dark Tetrad, may identify those who might engage anti-socially on dating sites. An astute work suggests a tie between “romance fraud” and “domestic violence,” with psychological and financial abuses in both contexts (Cross, Dragiewicz, & Richards, 2018, p. 1304). Of special note, the researchers used the categories of psychological mistreatment identified by Tolman and his colleagues (1999), including: “economic abuse, creation of fear, isolation, monopolization, degradation, rigid sex role expectations/trivial requests, psychological destabilization, emotional or interpersonal withdrawal, (and) contingent expressions of love” (pp. 326 – 328, as cited in Cross, Dragiewicz, & Richards, 2018, p. 1308) to code insights by romantic fraud victims. Of these, they coded to every category except for “rigid sex role expectations / trivial requests” (Cross, Dragiewicz, & Richards, 2018, p. 1317).

Another research team, in studying people’s expressed romantic imaginations and “personal love stories,” suggests that the appeal to “strong emotions” at least partially explains the success of the Online Romance Scam (Kopp, Layton, Sillitoe, & Gondal, July – Dec. 2015, p. 205). The appeals to emotion create a false sense of a relationship, which can then be exploited for financial gains. Many of the faux profiles follow a basic formula: “The first part contained a personal description, and the second part describes what the character likes, and what their hobbies are. The third part covers the reason why the character is looking online for a partner, whilst the fourth part describes the character of the per-

son they are looking for. We found that while the four parts can come in different order, most profiles start with a self-description, followed by hobbies, motivation and finally by the character they are looking for” (Kopp, Layton, Sillitoe, & Gondal, July – Dec. 2015, pp. 209 – 210). The describes are written to appeal to their target demographic. The male profiles emphasize their wealth and also their interest in traditionally female activities in some ways, as part of a ploy to appear as “a perfect male partner who might share exactly the same female-related interests or hobbies” (Kopp, Layton, Sillitoe, & Gondal, July – Dec. 2015, p. 210). The victim is being drawn into a narrative of an “ideal love story” through the various fictions (Kopp, Layton, Sillitoe, & Gondal, July – Dec. 2015, p. 213), in which there are shared interests (p. 214) [In some ways, those who post their own profiles on dating sites are expressing something of their own fantasy selves—their most attractive instantiations—their most idealized personas. The responses they can elicit can serve as affirmations.]

Romance scam victim profiles

There is not the same risk of victimization for everyone. People have varying susceptibility to “online influence” (Williams, Beardmore, & Joinson, 2017). One psychological analysis of a client who pursued “techno-intimacy” online, the researchers suggested that he was striving to meet needs for the actualization of his idealized self based on an ego-split and other childhood traumas (per Freudian analysis) (Dryer & Lijtmaer, Feb. 2007, pp. 52 – 53). Some go online to deal with ego deficiencies by idealizing potential lovers (Bollas, 1987) and may find “therapeutic benefit” in cyberspace (Whitty & Carr, 2003, pp. 886 – 887).

The application of protection methods for those engaged in online dating depends in part on knowing the profile of prior victims and a victimology profile. Those in the 55 – 64 age category “were over-represented in terms of financial loss, accounting for close to 40% of total money lost to fraud, in contrast

to representing only 20% of reports made (Scamwatch, 2016, as cited in Luu, Land, & Chin, 2017, p. 2431). A 2015 report from the Internet Crime Complaint Center (a project of “the FBI and the National White Collar Crime Center”) “found 29% of people targeted in romance scams were women 50 or older, who accounted for more than 51% of all financial losses in romance scams” (Grant, 2015, as cited in Cornelius, Dec. 2016, p. 31). Both men and women are “targeted roughly equally, though women lost more money and were more emotionally affected than men by the scam” (Whitty & Buchanan, 2012b, as cited in Luu, Land, & Chin, 2017, p. 2432). Vulnerabilities include those females in prior “abusive relationships” and males with “mental health issues” like “social anxiety disorder and depression” (Whitty & Buchanan, 2012b), risk-taking and belief in “fate and destiny” (Dudley & Shadel, 2015), high ratings in “romantic beliefs” and a “high motivation to fall in love” (Whitty & Buchanan, 2012b), and being “sensitive and less emotionally intelligent” (Tatera, 2016, as cited in Luu, Land, & Chin, 2017, p. 2432). Many of the victims came from a range of professional backgrounds, with many highly educated and earning middle-to-high incomes (Luu, Land, & Chin, 2017, p. 2432). One intervention suggested by a research team suggests an intervention to show individuals their vulnerabilities and to empower them to use protective measures (Luu, Land, & Chin, 2017, pp. 2438 – 2439).

Another study found victims of “cyber-dependent crime” tended to be based on “individual and household factors, as well as online and prevention behavior” for those engaged in routine activities online (Bergmann, Dreißigacker, von Skarczinski, & Wollinger, 2018, p. 84).

Those who attain a state of flow (and pleasure) when engaging online are more susceptible to cyber-game addiction (Chou & Ting, 2003), and this dynamic may also play into engagements with dating websites and applications.

One research team proposes a mix of factors that culminate in a

“holistic individual susceptibility” to workplace phishing involving features such as the following sub-elements as part of four variables: “high propensity to trust, low self-control, low self-awareness, high risk-taking, high self-deception, expertise, high need for affiliation” for one variable; “need for finance, goal conflict, desperation, negative mood, loneliness, cognitive overload, fatigue” for a second variable; “low power, hierarchical organization values, individualistic cultural values, relational cultural values” for a third variable, and “reciprocity, scarcity, commitment/consistency, conformity, authority, liking, loss” for a fourth variable. (Williams, Beardmore, & Joinson, 2017, p. 418) The various interaction effects among the variables and their sub-elements may come together to create vulnerability.

In the Malaysian cyber romance victimization profile, researchers found the following:

This study found that those between the ages of 25 and 45 years were likely to be the victims of cyber romance scams in Malaysia. The majority of the victims are educated and having a Diploma. In addition, this research shows that married people are more likely to be the victims of cyber romance scams. Study shows that non-income individuals are also vulnerable to being the victims because the study shows that 17 percent of respondents who are the victims are from this group. As expected, those who work and have monthly income between RM2001 (ringgit) and above are more likely to be targeted and become a victim of cyber romance scams. The study also shows that those who lack computer skills and (have) less levels of cyber-fraud awareness are more likely to be victims of cyber romance scams. (Saad, Abdullah, & Murah, 2018, p. 479)

Women tending to go online more than men for “relational maintenance” (Houser, Fleuriet, & Estrada, Jan. – Mar. 2012) and socialization. Beyond the scam risks, there are also risks

of “cyber-stalking,” including “on-line verbal abuse (flaming), threatening e-mails, obscene e-mails, junk mails (spamming), electronic virus, improper messages on message boards” and other reported harassments” (Jerin & Dolinsky, 2001, p. 18).

Another profile of a romance scam victim is of “middle-aged, well-educated women” who tend to be “more impulsive (scoring high on urgency and sensation seeking), less kind, more trustworthy, and have an addictive disposition” (Whitty, 2018, p. 105).

Regardless of the romance scam victim profiles (which represent a cross-section of the gullible in a population), all who engage in the space are vulnerable to one degree or another. There are risks inherent in the social practices, the virtual spaces, the ease of deception, the moneys and peoples to be had.

Teen females were found to engaging in “many forms of risky behaviours while online” including “sharing personal information, posting personal, sometimes sexual photos on the internet, conducting searches to find individuals to talk about sex and arranging meetings with individuals they met online” with a majority “not scared by the experience” of being contacted by online predators (Kite & Gable, 2013, p. 243). One earlier study identified four profiles of adolescent risky behaviors online: “adapted adolescents,” “inquisitive online, and two high-risk ones: “risk-taking aggressive” and “sexually inquisitive online” (DeMarco, et al., 2017, p. 104). There are research and law enforcement endeavors to protect youth against cyber-sexual solicitations (Wurtele, 2017) and the risks of sexual exploitation for European youth (DeMarco, et al., 2017). Adolescents in romantic relationships experience concerning rates of face-to-face aggression, and the partner attachments are also affected by “partner-directed cyber aggression” due to “anxious partner attachment” and “insecure parental attachment” (Wright, 2015, p. 37). Youth cyber aggression arises out of “networks of friendship, dating, and aggression” based on dynamics of “competition,

revenge, or attempts to fend off romantic rivals” (Felmlee & Faris, Sept. 2016, p. 243).

Cross-border appeal

Romance tourism is practiced by both men and women. One work, in the Jamaica context, describes how “many Euro-American women travelers” go to the islands to “pursue romantic affairs with local men”—who showcase their “gender repertoire” of “idealizations of local culture and masculinity” (Pruitt & LaFont, 1995, p. 422), as the exotic other. The “gender scripts” for romance include “ardent declarations of love, praises of beauty, and the like, which are a common part of a Jamaican man’s repertoire” (Pruitt & LaFont, 1995, p. 427).

One researcher studied Senegalese women who went online to find marriageable foreign men who could “be more generous than local men” (Venables, 2008, “Senegalese women...,” p. 113), with a special focus on their nationality and location. For others, online dating is part of a “migration strategy” (Venables, 2008, “Chapter 6: It’s all about making contacts...” p. 162).

Work place considerations for cyber romances

The advent of cyber for engaging human relationships has also meant that work places need to consider “the alchemy of sex, lust, love, and technology” (Mainiero & Jones, 2013, p. 198) and need to put the right policies and practices in place to address the challenges of workplace romances. With breakups, some will upload “revenge porn” online to shame and harass former partners (Arora & Scheiber, 2017). There can be spillover of intimate partner violence into cyber (Taylor & Xia, 2018). Victims of romance scams may end up risking company secrets. Those who

Are vulnerable to “emotional pressures” may be “manipulated by an outsider to extract or falsify internal information” (Rich, et al.,

For humanity, the various elements of “romance, love, coupledom, romantic partnership, live-in partner, marriage, altruism, romance fantasy” have long been with people, as may be seen in the mass digitized book text set in the Google Books Ngram Viewer (Figure 2). These concepts have hardened and been reified into concepts that have appeared in books for generations.

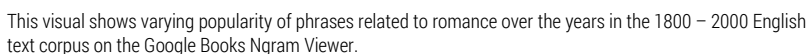
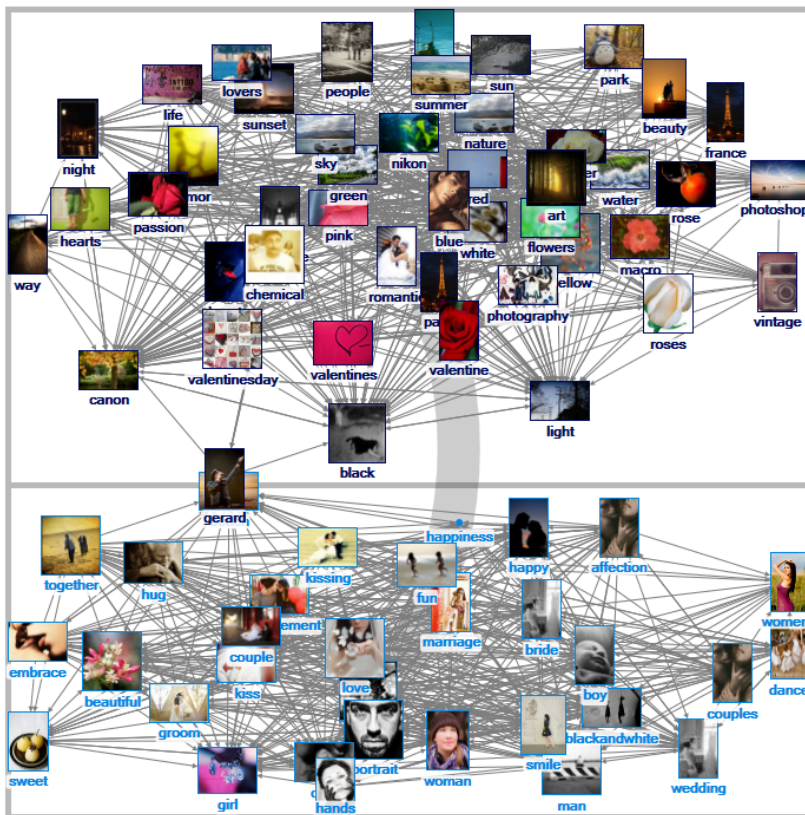


Figure 2: “romance, love, coupledness, romantic partnership, live-in partner, marriage, altruism, romance fantasy” on the Google Books Ngram Viewer

On social imagery, “romance” has been tagged as the expression of human passion, culminating in marriage and lovers. (Figure 3) The tags evoke some of Northrup Frye’s senses of romance (1957) as one of four mythic orientations (along with “comedy, tragedy, and irony”). Here, romance is seen as “adventure or quest,” “seeking peace, beauty, or something special,” and “retrospection to idealized past or nostalgia.”



Various tags are related to “romance” on the Flickr social image sharing site: valentinesday, lovers, light, and roses, in one group.

Figure 3: “Romance” Related Tags Network on Flickr (1.5 deg)

Time-correlated searches for “romance” on Google Correlate found many references to songs, films, and games, but nothing notable otherwise.

For the respective social imagery analyses, three sets of social imagery were collected:

- 89 images around “romance” were captured from the Flickr social imagery sharing site
- 1,515 images around “romance” were captured from Google Images
- 1,131 images around “romance fraud” were captured from Google Images

On Flickr, the tags are by various hues and then with b/w, “shallow depth of field,” “minimalist,” and “patterns” for visual filtering. On Google Images, the related tags included the following: “relationship, hug, rain, movie, good morning, marriage, wallpaper, art, aesthetics, wedding, bad, heart, serial, drawing, shayari, english, new, quote, vampire, sad, hotel, holi, book, abhi pragra, valentine day, baby, neck, happy, back, (and) woman.” (Tags are represented in the lower case, so they are shown that way here.) There were no tags for the “romance fraud” imageset.

The respective “romance” images show people laughing, hugging, and kissing, many in highly stylized images (like slim silhouetted couples). Many express a language of commercialized romance: red roses, pink hearts, chocolate, jewelry, candles, stuffed teddy bears (and one stuffed panda bear), and others. There are depictions of cosmetics and lingerie. There are pictures of romantic sites: the tropics, beach scenes, and others. There are famous travel destinations: Paris, Venice, Honolulu, and others. There are images of artworks and sculptures. An older couple holds hands for the camera. Some images offer humor: some poetry, and then “Nice t-ts!” There are images of book covers related to the topic. The images show needlework. There are bouquets. There are images of weddings and marriages. There are bottles

of alcohol. There are images of dancing, music. There are images of same-sex couples laughing together. Many of the images show an overlay of light-heartedness, such as a photo of two children kissing with their eyes closed. Some messages publicize how to bring romance back to relationships. There are several side-by-side images, showing a young couple to the left and the same couple to the right in old age. A photo shows a man kissing a woman's pregnant belly. There are romance book covers, with the stylized couples in steamy poses and males with open shirts (showing off "six packs" and muscular abs). One blurred image shows a woman in lingerie from the back. While the people depicted in the imageset are from varied ethnic and racial backgrounds, the main language depicted is English. Some Hollywood couples are also featured. The animated gifs show a couple kissing, dancers performing, and a couple nuzzling. The focus is on positive sentiment and moods: flirty, fun, and maybe a little exciting. [The Graphics Interchange Format or "GIF" have become "a key communication tool in contemporary digital cultures" and are recognizable for their "snippet"-ized aspects and continuous looping (Miltner & Highfield, 2017, p. 1).] The florid messaging is about loving acceptance. There are messages of personal actualization. The images are expressively "loaded" ones with various implications to people's lived lives. If one views them cynically, the messages are manipulative and saccharine; if one views them sentimentally, the messages celebrate love, which surpasses all, which overcomes hardships, which covers over the mundane.

By contrast to the buoyancy of the prior social imageset, the "romance fraud" imagery involves visuals of abstract broken hearts, handcuffed individuals, warning posters, FBI task force arrests during a press conference, hotline numbers, and crime report covers. One eye-catching message showed a stringy heart held by a clothespin on a branch with the question: "Will you be loved up? Or stitched up?" An information graphic warns again "Valentine's Day fever." A photo shows heart-shaped can-

dies side-by-side: “love you” and “send me money.” The words are negative in terms of sentiment: prison sentence, bankruptcy, danger signals, romance fraudsters, and others. There are contact numbers for police in various jurisdictions. One image shows a fishhook running through a credit card. Another shows a mouse-trap with a red heart as bait. One photo shows a pair of male hands on a keyboard, with a shiny gold wedding ring on *that finger*. Some images show members of the U.S. military, who have had their identities stolen to scam others. Some posters warn against sharing too much information online (TMI), sharing financial details with strangers, and requests to move away from dating sites (which are apparently more attuned to scams than off-site social media accounts). There are warnings against being used for visas. These images show a communicating against the ideals of romance, the idea of idealized couple-dom. They are counterfactuals, alternate narratives, the downside to the earlier upside, the risk vs. the rewards. The narratives here are about actual value vs. face value for scams.

The social images show the presence of commerce, government, and less from the general public. If one were to categorize the sourcing of the images, most seemed to be from the Global North than the Global South, in terms of identifying image features. The messages were mostly about commercial “sell” and the reification of perfect love (shiny red hearts).

The messaging is designed for fomenting aspirational hunger and discontent, a hankering for something that is rare and difficult to achieve. If you are already in a relationship, there is better out there. Is yours true love or something not quite? If you are not in a relationship, two is better than one. If you are starting a relationship, think of the possibilities! The suggestion is that if people keep trying (and spending), they will eventually find true love, when in fact, true love is something co-built and co-created and co-maintained. Everything is at risk at every moment. True love is not for the faint-of-heart, and it is not for the dream-

ers who cannot engage the reality of another human being. A sense of American marriages is that many of these tend to be “transactional,” with consideration for how well the spouse may provide in terms of financing, and those experiencing unemployment being much less competitive on the marriage market (Chen, Aug. 20, 2017)

Behind the commercial layer are meta-narratives from literature and poetry and song; dance; opera, plays; movies; paintings, and other desiderata of cultures. (Some sources are even constructed biographies of actual people.) These meta-narratives are stories of grand passions, great loves, in which the locus of control is outside of the swept-away individual. The various depicted characters live in a sense of heightened drama. When relationships fail, the heartbreaks are irrecoverable, one-of-a-kind, and lamentable in the long term. When love exists, the self-sacrifice is extreme and emphatic. With such soundtracks and storylines running in people’s heads, they go out into the world with their imaginations forefronted and their good sense somewhere else.

Discussion

Humans experience various needs and appetites. They need to connect to others to meet various needs. People meet their perceived needs in various ways. Sometimes, they pin their hopes to illusions. Humans are vulnerable to fantasies and outsized hopes. They are vulnerable to messaging in all modalities, whether in-person or online, whether text or audio or visual or some combination. They can be misled by messages from within (self-deception) and without (other-deception). People are poor at discerning false notes. They are pretty poor at anticipating the future, except by using averages and data patterns and extrapolating roughly from there. And yet, relationships begin with hope. That is a core fundamental because connecting is effortful and often costly in time and sometimes, funds. That hope can eclipse good sense or critical thinking or rationality. Relation-

ships continue with negotiation and compromises because that is what is required for relationships to maintain, with work and life demands, other relationships, and so on. People shift in their thinking from “I” to “we,” and many times, shift back to the “I.”

In this work, social imagery around “romance” **and** “romance fraud” (as seeding terms for the downloading of social imagery) showed a focus on commercial descriptions of romance, with bright red hearts, red roses, sweet candies, lace, and a contrastive failure of real life to live up to those ideals. (This is 64% of the images in the Flickr “romance” set were commercial vs. non-commercial, 99.6% of the Google Images “romance” set, and 92% of the Google Images “romance fraud” set commercial.) [**Side Note:** “Commercial” images are those with clear products in view, recognizable personages in poses, and a professional sheen—in terms of composition, lighting, color jumping, context, and other features. Many of these images are from films, music, soap operas, and others. During the visual coding, it was important to pay close attention since professional photo shoots try to look somewhat realistic, and many photos by amateurs strive to look professional. There were shared visual tropes, such couples kissing against a sunset background on a beach, and others. After the manual coding, the images started to look saccharin and artificial, quite unrealistic and almost silly. “Romance” is about civilities and palate-able indirections, so that people can address personal issues in polite company. Euphemisms, symbolisms, and make-believe narratives can better mask people’s lifestyles and choices that may be highly personal. There seems to be a conscious avoidance of lewdness or offensive imagery, although some skirt and even cross the line.] Law enforcement experts suggest that people should be protective of their online identities and be highly wary when asked to share funds with a stranger who has stories to tell—of surprise costs, of problems crossing borders, and others. [For all the risks of online dating, some con people are caught by the concerted efforts of people

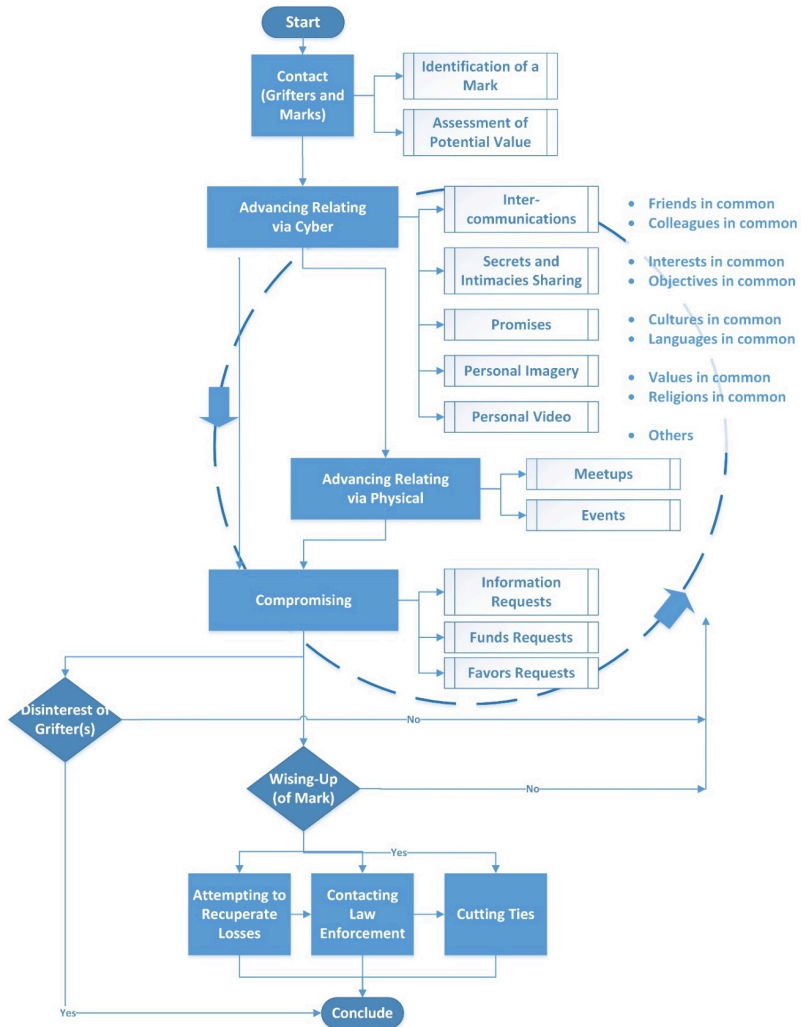
who collaborate online and share information online and work with law enforcement. (Monroe, Mar. 16, 2018)]

A “remote woo” sequence

A typical sequence of the “remote woo” con may be seen in Figure 4. At the start, it really does not matter how potential “cons” and “marks” meet because there are many ways such connections can occur. The instigator may be either the “cons” or the “marks”. [Research does suggest that “in almost all situations, the scammer will initiate contact with their target victim” (Tracy, 2008, as cited in Luu, Land, & Chin, 2017, p. 2431). Prior reconnaissance enables a sense of organic and unforced relationship (when in the real, there are very natural awkwardnesses, in many cases). A different study suggests that social media may be another initial point of contact and not dating websites (Kopp, Layton, Sillitoe, & Gondal, July – Dec. 2015, p. 207).] For many, the distances between respective locations (or countries_ may be a boon or a weakness to the relationship. After all, some people prefer something low-maintenance than something much more present. One researcher suggested that the interactions to build trust may take “six to eight months” for the bonding (Rege, 2009, as cited in Whitty & Buchanan, 2012, pp. 2-3). Given that amount of time, it would seem wholly possible to create a backstopped online identity and to misdirect a target mark to various information (look here, not there). Some romance scammers use existing relationships (affinities) to access individuals, who may have lowered guard because of the pre-existing senses of trust (Cross, Dragiewicz, & Richards, 2018, p. 1305). For many, the friending of strangers is not a common way of meeting others to date; what is more typical is reaching out to an extended social network (Arora & Scheiber, 2017).

By definition, the core interests of the “cons” and the “marks” are different, and at some point, the differences lead to a divergence—when the “cons” have better opportunities elsewhere,

when the “marks” wise up and stop being “milked” for resources (moneys, information, and other compromises). The end may involve law enforcement or some other paths, like “ghosting” (one or the other withdrawing from all communications from the other and disappearing).



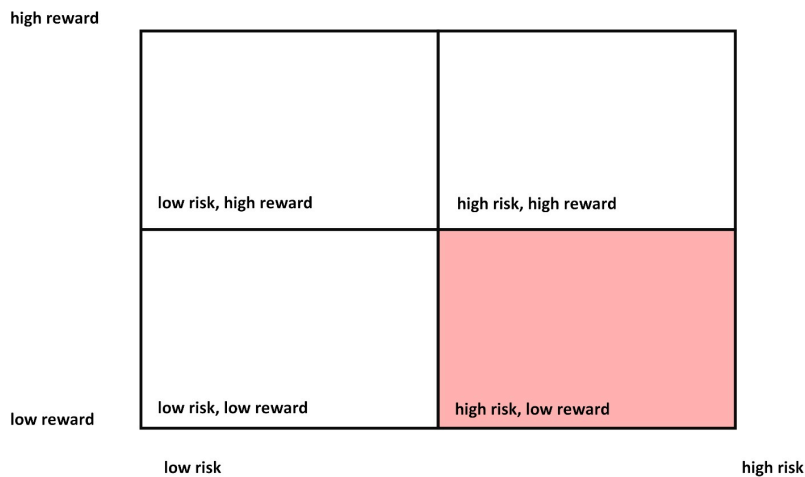
Typical Dynamics in a Remote Woo Con

This diagram shows some typical dynamics in a remote woo con...with the mark exploited until there is nothing left to acquire.

Figure 4: Typical Dynamics in a Remote Woo Con

Per the Review of the Literature, researchers have noted that

those who are victimized by romance scammers online tend to be unaware of the actual risks. One intervention may be to share the information about the levels of risk, so that those who go online in pursuit of love can avoid the “high risk, low reward” quadrant, at minimum (Figure 5). Informational asymmetries can be highly de-stabilizing and risky because they enable vulnerabilities in human interactions and relationships to be exploited, even severely.



Pursuing Love via Cyber Means

This diagram uses a 2x2 table to explore risk-reward tradeoffs in pursuing love through cyber means. Remote woo is about “high risk, low reward” in all cases.

Figure 5: Pursuing Love via Cyber Means

The work of “catfishers” (those who create fake profiles to target specific victims to make them more vulnerable) can be quite sophisticated and impactful (“catfishing,” Nov. 28, 2019). Many know how to set so-called “honey traps,” with “irresistible bait” in digital format. The stratagem are not unlimited, and the tactics

are fairly known. Other research suggests that gangs of romance scammers share information and tools; they share tips on what verbiage and methods work. There is research on how romance is seen through particular cultural lenses, to better understand expectations and how to communicate towards those expectations to advantage-take. It turns out that many people can be lured by an attractive story. Confidence tricks “exploit typical human characteristics such as greed, dishonesty, vanity, opportunism, lust, compassion, credulity, irresponsibility, desperation, and naivety” (“Confidence trick,” Feb. 24, 2020).

Experientially, the stages of the confidence trick may be understood in Table 1.

Stages of the Con	Remote Woo
Foundation Work	Creations of online profiles, setups of confederate accounts, planning for the “social engineering” deceptions, identification of targets
Approach	The “mark” is approached
Build-up	“The victim is given an opportunity to profit from participating in a scheme. The victim’s greed is encouraged, such that their rational judgment of the situation might be impaired.” (“Confidence trick,” Feb. 24, 2020) In this case, the romantic interest is roused, to raise both interest and lower rational judgment.
Payoff or Convincer	The mark is given attention, flattery, and promises (true love everlasting, a spouse, a life of wealth and adventure, an affair). Perhaps presents exchange hands.
Hurrah	There may be “a sudden manufactured crisis or change of events (which) forces the victim to act or make a decision immediately.” (“Confidence trick,” Feb. 24, 2020)
The In-and-In	This last step may be a false confirmation bolstering the claims of the remote wooer...by a confederate of the wooer...to reaffirm the false assertions of the false suitor.

Table 1: Stages of the Remote Woo Con [based on Smith’s “Six Definite Steps or Stages of Growth” in a Confidence Game in 1923, as cited in “Confidence trick,” Feb. 24, 2020]

The growing numbers of people who are compromised suggests that there will always be a percentage of a population that will be vulnerable and gullible to such romantic illusions. Said more

harshly: “The booming online dating industry with its ever increasing membership continues to offer scammers with a ready pool of suckers that are ideal for exploitation” (Rege, July – Dec. 2009, p. 508). If the stock market is about “fear and greed” and veering between the two, the online dating scene is about “fear and lust”. The victim’s desires are harnessed in order to create individual and personal vulnerability, albeit on a mass scale. Perhaps the need for love and romance is inelastic for many and creates a constant thrumming need which enables misuse.

People orientate to the world differently, with different expectations of both realspace and cyberspace and their fellow humans. From their different subjectivities, they express differently in the world. They rationalize their own and others’ actions differently. Early research into deception detection from others’ demeanor suggest that even law enforcement often did not perform better than chance (O’Sullivan & Ekman, 2004, p. 269). In an online space, with just a few indicators (all easily faked), it can be more difficult to tell. Social conventions, cultural habits, politeness, and social norms make it difficult to ask others for evidentiary proofs. And even “evidence” can be faked, and if people want to believe hard enough, they will often convince themselves even in the face of overwhelming evidence to the contrary, given people’s confirmation bias (Kahneman, 2011). People’s vulnerabilities are hard to mitigate, based on the prevalence of cognitive biases, self-deception, vanity, emotional desires, and even fantasy needs. Still, potentially, some of the more egregious harms may be somewhat mitigated and headed off in some cases.

The research suggests advancements in computational methods, psychological methods, and others to identify scammers. The ability to conduct reverse image searches may help identify swiped images and actual identities of “heart throbs” whose images are stolen for grifting. Research in this space suggests that faux cyber-romances are **not** 100% identifiable, and some will slip through. Companies that offer dating services do not

have any interest in refereeing people's respective relationships or personal behaviors. However, they do have an interest in ensuring that their respective platforms are not used for systematic and continuous misrepresentations and frauds. From the outside, with limited communications, it would be difficult for social platforms to level charges of malfeasance without solid evidence, or they will be creating legal liabilities for themselves.

Some researchers refer to "false self-representation" as a form of "micro-fraud" that is pervasive and common (Arora & Scheiber, 2017, p. 418), on social media and in the real. Basic common sense might suggest that people approach online spaces with basic cautions. They may remember pithy advice: If it's too good to be true, it probably is. Indeed, if those in such relationships cannot discern what they are engaged with, how much harder would it be for someone from the outside (unless they have additional information about the scammer's prior actions and inter-relationships).

Law enforcement, banks, and others are doing what they can to disrupt the criminal groups and individuals engaged in romance scams. There are advances to coalescing scattered online information to understand the pieces as a "SuperIdentity" to validate or invalidate digital personhood (Black, et al., 2012, p. 1). [This is not to say that people can recoup their financial losses from romance scams through litigation, given the challenges of lawsuits across borders and between countries.]

Even if people are "real" and "good-intentioned," relationships are difficult, and many do not last beyond a few months, much less a year. Not all achieved relationships are necessarily idyllic nor static. A study of Facebook relationships showed that few made it past three years. [The researcher writes: "With every month that passes, more and more shaky relationships end, leaving an ever-larger proportion of solid relationships around" (State, Feb. 12, 2014, p. 1).] The study shows that the longer a couple has already been together, the longer that relationship is

likely to last. However, the linegraph shows fast-dropping lines that cumulatively dwindle by half in 48 months or thereabouts. There were also seasonal trends in when breakups occurred, with yearly peaks “during summer months” (May to July) and “a small dip in breakups during February...perhaps a result of Valentine’s Day!” (State, Feb. 12, 2014, p. 1). On average in the U.S., with the promise of “forever” until death parts one or the other or both, approximately half of all marital unions end in divorce. Those marriages that end in divorce last about eight years (or 8.2 years to be more exact). (Fraudulent online romances on average last about 8 months.) The prior is suggestive of probabilities of romances making in time. This assumes clean motives and goodwill and efforts towards connecting, in a world with changing interests and maturing in and out of different connections and relationships. If relationships are to be anticipated and “gamed out” in the “shadow of the future,” the probabilities look stark. A different calculation may provide an actuarial sense of risk in engaging in each. A person can decide what he or she is trading away to be in a relationship and the odds of that relationship turning out to be something healthy and long-term and potentially permanent.

So how can people differentiate a fraud-based romance versus just a bad romance? How can they exercise a healthy dubiousness without shutting themselves down from healthy possibilities?

Romance fraud can be differentiated from a ‘bad’ relationship by its *modus operandi*, with the offender explicitly seeking to form a relationship with a person for the sole purpose of deceiving and manipulating them into sending money. (Cross, Dragiewicz, & Richards, 2018, p. 1304)

Given the long odds, those who would pursue romantic fairytales and stories of being actualized by love (finding a prince, finding a princess) are at a disadvantage, liable to compromise their personal finances, physical health, psychological well-being, and

social reputation, by blithely engaging others on face value, by confusing promises for reality, and mixing “cheap talk” for “costly signaling.” Still, if the odds seem worth it, people do better to engage cyber-skepticism as the “mind’s firewall” (Thomas, 2008, p. 8). Trust is never a once-and-done but something that has to be tested and reinforced continuously. It would seem that those who engage in swift trust, without some due diligence, without some testing of others’ claims, would put themselves at risk. [Some popular impressions suggest that fast intensifications of online relationships may lead to “compulsive overindulgence in, this speeded up, heightened, eroticized pseudointimacy” even as researchers suggest that that may be a negative stereotype only (Cooper & Sportolari, 1997, p. 13).] Those who set redlines for their own well-being and safety but are unable to enforce those lines are also at risk. People who care too much about social approval and enable strangers to speak into their lives are also putting excessive power in others’ hands. People who tend to spill a lot of personal information on social media offer a much larger “attack surface” for others’ to exploit. Internal monologues and other shares can be excessive and can be deeply revelatory (even unintentionally so). It seems wise to apply common sense to decision-making and apply analytical thinking to all aspects of a life, especially in moments of emotional vulnerability (after a breakup, on the rebound). It seems wise not to be clouded by dreams and ambitions. People should not be apologetic about being self-advocating and self-protecting because people have to be responsible for themselves. They should not compromise themselves based on vulnerabilities from personal feelings of insecurity, loneliness, or the turmoil from undergoing life changes.

When people invest hopes in another, some respond by being their best selves (in a virtuous cycle), and others respond by advantage-taking (in a vicious cycle). Sometimes, it may take decades before the malicious or destructive behaviors manifest in full. Categorizing victims as “innocents” does not seem appro-

priate, given the wide availability of warnings about such frauds and all sorts of evidence about core human nature. It seems more accurate to assume that everyone out there who is a volitional adult has to be responsible for their own well-being and not assume that they will have an effortless “happily ever after.” Those who would set standards very low will end up having to engage unnecessary risks. Finally, if idealized “true love” is lauded so often, it is because it is also rare. Their mentions create a misguided sense of reality, based on “survival bias.” (People do not tend to laud breakups, so the stories that “survive” in the public mind are those of mythicized love as possible.) The dazzle and the promise of such a future may inspire some people to rely on the thinnest of claims about others’ personality, others’ character, others’ trustworthiness, and this can result in all sorts of vulnerabilities and abuses. Practically, dyadic romantic matches require hard work, plenty of communications, mutual respect, risk-taking, trust-building, and compromise, and they do not just appear on digital horizons as common fact patterns. There is no point at which a couple has finally “arrived” for good, and then it’s wine and roses. Plenty of long-term couples and spouses are found to have difficult relationships. If time were a measure, a majority of serious relationships also fail—whether formally on paper and / or in the real, in terms of breakdowns of relationships and negative emotions and apathy. At a minimum, though, simple scams (and other get-rich-quick schemes based on alluring storytelling and emotional manipulations) such as the ones online should be able to be spotted and addressed. Social imagery may provide visibility into some massmind concepts of romance and love and heartbreak but shows little about the complexities of the voracious human heart and devious mind.

Future Research Directions

Beyond social media and dating apps, there are immersive virtual worlds that are venues for romance. Researchers point to the sexualization of digital avatars (Behm-Morawitz & Schipper,

2016), sex work on Second Life (Lynch, 2010), and the ability to build a 3D sense of a person through avatars and enabling the “immersive parasocial” (Hai-Jew, Sept. 2009), the pursuit of one-way “relationships” with a public figure, with the socio-technological ability to directly address human-embodied avatars with a sense of online presence. How romance scams manifest in immersive virtual worlds and online games would be of interest.

Follow-on research may involve other systematized ways to understand the “remote woo”—from different cultural contexts and criminal groups and criminal individuals. More research may capture how the respective teams function, how they conduct research and reconnaissance, who they target and how, how they make decisions, and so on.

Perhaps imagery from private holdings may be analyzed for their messaging, to better understand the online ploys and what is efficacious.

Finally, it would be helpful to explore more powerful defenses against romance scams, at the individual, group, platform, and societal levels, as well as transnational and global ones. To these ends, at every level, it would help if people (and machines) could be employed to either substantiate or falsify senses of each other, even though the haze of wanting to believe in the rarity and the dream of “love at first sight” and of “love” in the social imaginary and individual attractiveness and self-value. In the absence of avenues of recourse, oftentimes, given the limits of the reaches of legal systems and policing abroad, perhaps there can be pre-online-dating counseling, to address some of the gullibility of both “noobs” (newbies) and the more experienced. It would also help to mitigate senses of pressure and competition—that might discourage individuals from being skeptical. Also, in terms of social engineering, sometimes, people are manipulated when they follow cultural scripts such as in relating to apparent high-status individuals or authoritative ones; people need to train against such scripts and think more critically. It may help to

have clearer senses of statistical probabilities, given the outsized impressions of romantic connections made through advertising, marketing, and “survival bias” in terms of news coverage (what is described as successes vs. the many failures that do not attain media attention). Celebrities gush and share about what makes and the weddings, but focus less on the breakups and divorces. In this competitive landscape, the gullible or the naïve or even the ordinary person who gets “sold” = “compromised,” in the hands of skillful con artists.

As former confidence man and later FBI Frank Abagnale observes, the uses of social technology is a force multiplier, and the ability for de-humanized interactions enables confidence individuals to take an individual for every cent. He suggests that there are two red flags or warnings in every scam: an “urgent need for money” and “asking for personal information” (Exley, Dec. 5, 2019). The pressure for speedy action shortens the time for a person to respond with reasoned thinking, and the personal information is harvested for mis-use. (A colleague of mine who was propositioned on the street and asked for personal information responded, “What’s it to you?” That sense of street smarts—would you accept an intimate proposition from a stranger?—would hold people in better stead than assuming that people are as they self-portray online. Those acculturated to online dating and swiping left with strangers may be amenable to stranger propositions on the street, though, and rely on others’ civilization, others’ non-violence, and prophylactics to try to stay “safe”. They put their own wellbeing into the hands of others based on a good faith understanding.)

A core premise of this chapter is that people (at heart) do not want to be “bamboozled by a fake” (Pyne, 2019, p. 9), particularly if it is costly to the wallet and to self-identity / ego. However, if this premise is wrong, then faux romances may be a form of adult play, with incursions into the imaginary. Those who engage in that may appreciate “knock-off affection,” outsized digital dis-

plays of attraction and faux loyalty, and fantastical stories of love that stretch credulity. Perhaps some people enjoy playing at reality with so-called “genuine fakes,” known fakes. Perhaps the allure of “idolatry” (Pyne, 2019, p. 36) has an appeal to some consumers of fakes. Faux romance can like projecting oneself into a glowy movie or another fantasy space. The surfeit of hope is important for some in their constructed senses of the world. Here, perhaps an individual wants to believe in their own great beauty and charm and wit; they want to believe in the accolades of the enchanted lovers from abroad. This penchant for the red and pink hazes of illusions means that flattering words are swapped for finances and goods, and the fraudsters crowd-fund by deceptions to the tune of hundreds of millions a year globally. Some research may explore the social-psychological aspects of such self-deceptions.

This work used a basic binary: a “real” romance vs. a “faux” one. If there are objects in the world “that defy a neat, superficial categorization—it’s full of in-between objects that are real and not-real at the same time” (Pyne, 2019 p. 10), perhaps this in-between concept may be helpful in terms of a real-try sort of romance. Perhaps a “real” romance may be too challenging that some fakery or some escapism or some fantasy is beneficial and even necessary to try for love. After all, people may have a taste for the artificial, the staged, the white lies, and the performative. If people cannot defend themselves with some rigor against manipulations, then the cost is on them and to those close to them.

Conclusion

Finally, new romance scams are emerging all the time, as variations on an old and trite scam. In recent times, with the global novel coronavirus pandemic, there have been outreaches to people via their personal accounts and phones by people who want to connect, who want to chat, who want to be social. Romance scammers are reaching out to those in social isolation and self-

quarantining because so many are used to socializing in workplaces and with friends in local hotspots. The new quiet makes some anxious and uncomfortable, and the remote woo merchants are trying to find a way in, to exploit. They have romance to peddle, and there are always buyers.

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Key Terms

Catfishing: The creation of fake personal profile online to be particularly attractive to a target individual

Cyber Dating: Using Internet apps and information and communications technology (ICT) to create a social or romantic connection

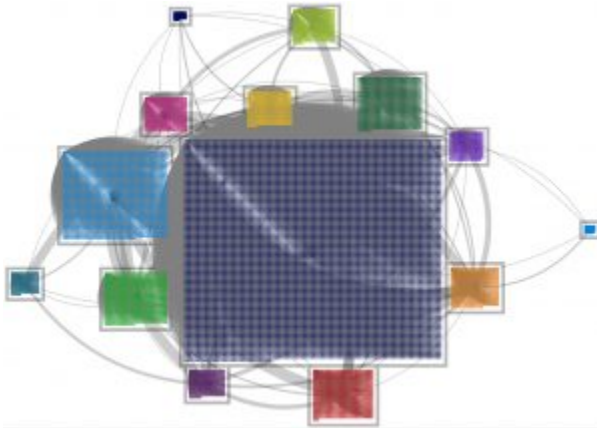
Remote Woo: The uses of information and communications technology (ICT) to try to win over a person from a physical distance

Romance: A sense of mystery and novelty from daily life

Transnational Interpersonal Romance: A distance “love” relationship

EPILOGUE: BEYOND THE SOCIAL MOMENT

Shalin Hai-Jew



An easy go-to in this cataclysmic moment is to think of a pre- and post-, and before and after. All the chapters besides Chapter 1 are pre-, and the first chapter on SARS-CoV-2 is somewhat “post” in an emergent way. The future has always been non-linear, and it is much more volatile in the grip of a black swan event and its aftermath. The only real throughline is time, and between Time 1 (pre) and Time 2 (post), a lot will change beyond the jolting of humanity from relative security to survival mode, from relative comfort to privation, from social togetherness to separation, and from hidden risks to exposed ones.

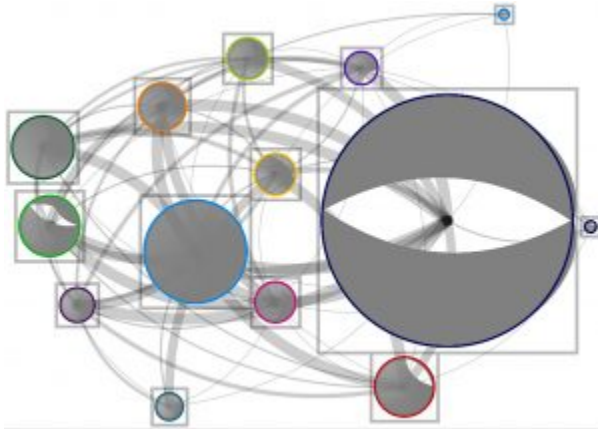
Where do these respective topics go?

1. What of the mutating novel coronavirus as it instanti-

- ates in human populations around the world? (“Emergent COVID-19 and SARS-CoV-2 in Social Imagery and Social Video: Initial Three Months of Viral Dispersion”)
2. What of plastics usage and management? (“Transnational Meta-Narratives and Personal Stories of Plastics Usage and Management via Social Media”)
 3. What of human privacy in a time of mass health- and geo- surveillance? (“Global Citizens against Socio-Technological Incursions on Privacy, Human Rights, and Personal and Social Freedoms: Temporary Pixels and Ephemeral Voices”)
 4. What of whistleblowing without an engaged and judging public? Without an investigative media? (“Blowing Whistles on Transnational Social Media: From Micro-to-Mass Scales, Privately and Publicly”)
 5. What of political speech when mass public gatherings are unsafe and ground zero for contagion hotspots and dispersion? (“In Flames, In Violence, In Reverence: Physical Protest Effigies in Global and Transnational Politics from a Social Imageset”)
 6. What of human rights and street democracy, when governmental power is at an apex to face down a virus with pandemic potential (at the same time that it has been faced with one of the largest possible challenges of the time)? (“Exploring the Transnational Allure of ‘Street Democracy’ via Twitter based on a Contemporaneous Real-World Case”)
 7. What of romance altogether, faux or otherwise? (“The Remote Woo: Exploring Faux Transnational Interpersonal Romance in Social Imagery”)

People will co-write their mutual histories into the future as now, even in the face of mass-scale challenges, which have always been with humanity (but the types and scopes are different).

Acknowledgments



Thanks to New Prairie Press (of Kansas State University) for accepting this work for publication. Pressbooks is an amazing platform for digital (and print) content distribution, even as it requires close attention to details and plenty of iterative work and versioning to get the work right. Consistency seems like a humble standard, but it is actually difficult to achieve. For me, I “fat fingered” while revising and deleted a whole chunk of a table, at one point, and it was the due diligence that ensured that the table did not go in incomplete. (“Sanity checking” applies not only to data analytics...but to the presentation of research.) All research and writing are exacting and demanding in every phase, and it was so with this book as well, with years needed to accrue the skills and knowledge and then a hard and stubborn will that ensured that this made it to press. I included alt-text for all informational graphics, but I left the decorative social network graphs without alt-text.

In ITS, we test everything...multiple times. We understand about dependencies required to achieve anything.

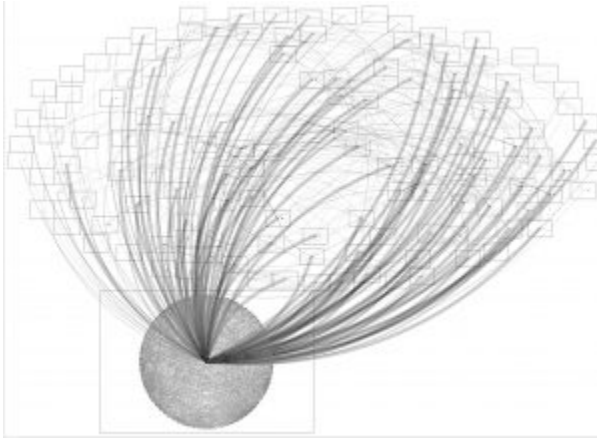
We practice iterations *ad nauseam*. We are persistent.

We try to code and script to precision. We use workarounds for anything that does not align with what we are trying to achieve. We tend towards cynicism and disbelief. We balance our internal "bean counter" of costs/benefits against an inner poet; we are ultra pragmatic dreamers. Ultimately, it is about "commits" in an imperfect context. All these IT-infused approaches helped in this project.

I am also appreciative of the prior academic publisher / press for supporting this work for a year before financial pressures forced their decision to stop this project at the typography stage. Thanks also to the anonymous reviewers who critiqued the respective chapters; their insights helped improve the work. It helps that we've had a long history of collaborative work. We will get beyond this difficult phase.

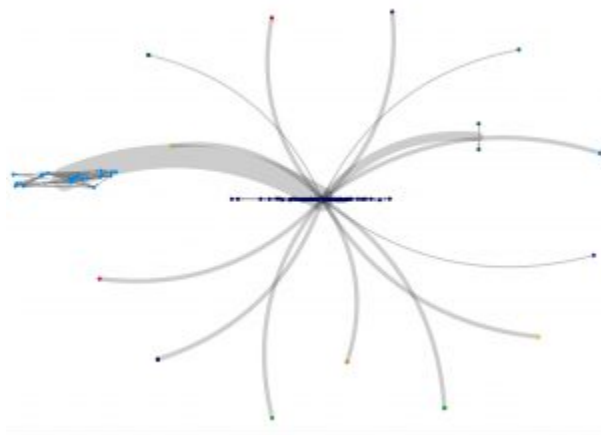


About Book Updates...Not So Much



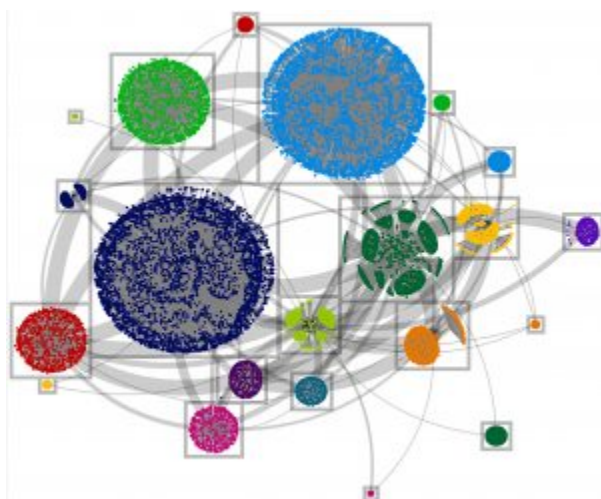
Even though electronic books are conducive to updates, I will not likely be making more than cosmetic changes, as needed. All the topics can be updated *ad infinitum*, and I am hoping to move on to other projects. Every book demands excessive head-space, and it is important to draw a line of when a work is provisionally complete. Even as there is always room for improvement, I am hopeful that others can build on this work (with their own).

Dedication



To close, I would like to dedicate this to striving peoples, to us all, to the mass social (as individuals), in a difficult present moment. While the sense of shared threat has driven us all to ground, we will adapt and adjust, whatever the “new normal” should look like. As always, R. Max, Lily, and Asher, you are all my hope.

Thanks!



To the readers: Thanks for your interest! I am hopeful this

open-access resource finds a readership.

