The Push Toward Extremism: COVID-19 as a Catalyst for Radicalization

Luke K. Brown

Indiana University

Abstract

It has been well established that grievances and isolation play a major role in the process of radicalization. With that being said, the COVID-19 pandemic has had a major effect on both an individual's grievances as well as their isolation. This isolation plays a major role in the modern era with the ability to intentionally or unintentionally search for like-minded individuals. In this study, I explore previous research on the topic of radicalization and ultimately develop an agent-based model depicting the process of how the pandemic has accelerated the rate of the movement toward extremist behavior.

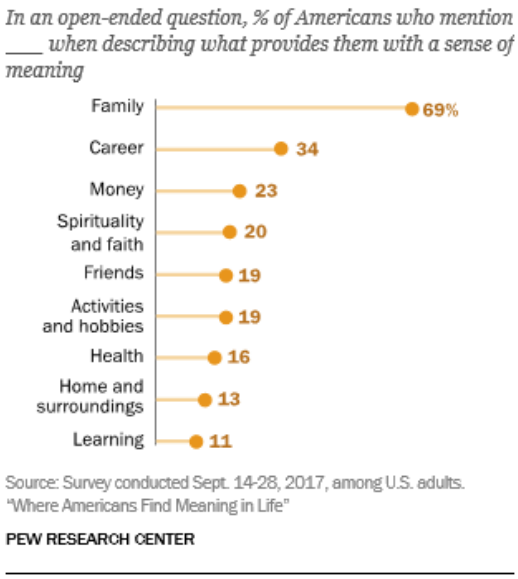
The Push Toward Extremism: COVID-19 as a Catalyst for Radicalization

Radicalization is on the rise. This has been especially apparent as of late in the United States as the Capitol Building was stormed on January 6th in order to disrupt the certification process of the presidential election (Leatherby et. al, 2021). Several called for the death of (at the time) Vice-President Mike Pence, Speaker of the House Nancy Pelosi, as well as several other prominent politicians (Acevedo, 2021; Pramuk, 2021).

No one is born radicalized, so how did this occur? How and why are people driven to this point of radicalized violence? I believe the COVID-19 pandemic made up a significant portion of the powder keg that erupted on January 6th. The implications of this are extremely important as they could predict and even give insights into how to prepare for or prevent future atrocities caused by extremist groups.

Literature Review

Many societal effects of COVID-19 are still being determined, one of the most apparent being its impact on radicalization. Research has shown that personal grievances and isolation are major contributors in furthering the radicalization process, both of which were directly impacted by the pandemic (McCauley & Moskalenko, 2011). The pandemic created a multitude of potential grievances. The Pew Research Center conducted a study in 2018 in order to determine where Americans find their purpose and meaning. The results can be seen in the following image:



COVID-19 directly attacks every single item on that list: ~5,000,000 Americans have lost a loved one due to the pandemic, ~20.6 million jobs lost with an 11% increase in unemployment, 63% of American's have been living paycheck to paycheck since the beginning of the pandemic, closing of religious buildings, isolation and quarantine, concern of one's own personal wellness, and the transition to e-learning (Bureau, 2021; Chalabi, 2021; Soucheray, 2020). The FBI reports that one of the most common pull factors towards extremism is one's lack of purpose (FBI, 2015). When one's purpose is lost, they are in an extremely vulnerable state and are willing to go to great lengths to regain that sense of epistemic meaning (Trip et.al., 2019). Numerous specific examples of this can be found in McCauley & Moskalenko's book, *Friction: How Radicalization Happens to Them and Us*. In addition. McCauley and Moskalenko describe the concept of biographical availability, or "'the absence of personal constraints that may increase the costs and risks of movement participation.' Personal constraints may include, as already noted, spouse, children, and a full-time job; individuals with these constraints are expected to be less available for the commitments required to participate in political activism" (2011, p.80). If one had lost their job, they now not only have a tremendous financial grievance, but also an abundance of

time to participate in things for which they normally wouldn't have been available. This could be a possible explanation for the major rise of conspiracy groups. Nathan Bomey and Jessica Guyunn from USATODAY report, "Membership in 109 popular and publicly accessible QAnon Facebook groups more than quintupled from about 155,000 in February to 1.12 million in June… QAnon content in those groups more than tripled from 2.35 million in February to 7.26 million in June" (2020). Even though the numbers are alarming, this search for a community during a period of isolation shouldn't be surprising.

The phenomena is known as "unfreezing", and involves an individual searching for and adopting the beliefs and ideologies of the found group during a time of isolation and loss of purpose (McCauley & Moskalenko, 2011). Humans are social creatures that need to be involved with others; however, with the restriction on physical contact, it only makes sense that people would search for that sense of community in an online space; "...in a way, it's a kind of religion or cult that can only exist in the social media age" (Bomey & Guyunn, 2020). In addition, if there is no physical contact with others, then ideas that don't support one's own narrative are less likely to be encountered. Therefore, confirmation bias seems to be a major role in finding these online communities as people search for what they want to hear or see… "creating an 'echo chamber' of like-minded individuals" (von Behr et. al, 2013).

So far, I've described how one gets involved and becomes part of a radical group. However, there's still another step in the move toward violence, the "slippery slope". The "slippery slope" toward violence occurs when multiple grievances compound within a group as well as when social intergroup pressure pushes one to commit more and more heinous acts for the cause of their group (McCauley & Moskalenko, 2011). Over time, this subtle push of the individuals gradually shifts the entire group to a more violent state (McCauley & Moskalenko,

2011). This is especially apparent in the QAnon group which was declared a domestic terrorist threat in May 2019 (Bomey & Guyunn, 2020). In addition Bomey and Guyunn report, "Michael Jensen, a senior researcher at the University of Maryland who leads a domestic radicalization team, has identified a sharp increase in 'demonstration activity,'... And those demonstrations are spilling over into 'more deliberately violent actions'" (2020). The following list is a timeline of crimes associated with QAnon reported by journalist Lois Beckett (2020):

15 June 2018

19 December 2018

13 March 2019

25 September 2019

30 December 2019

26 March 2020

2 April 2020

30 April 2020

11 June 2020

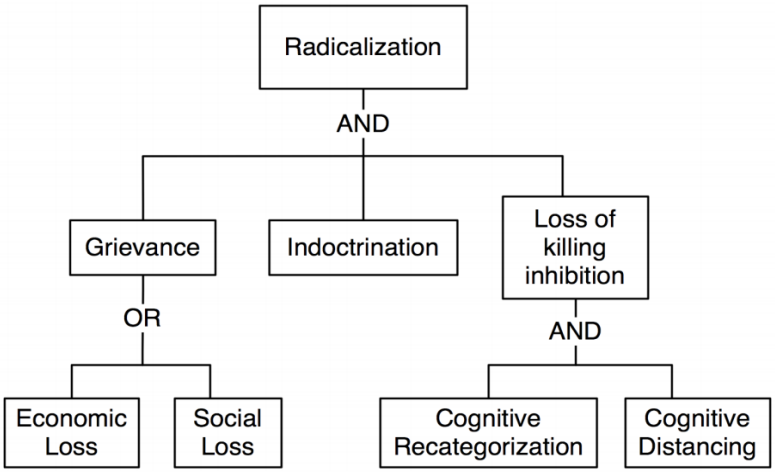
3 July 2020

12 August 2020

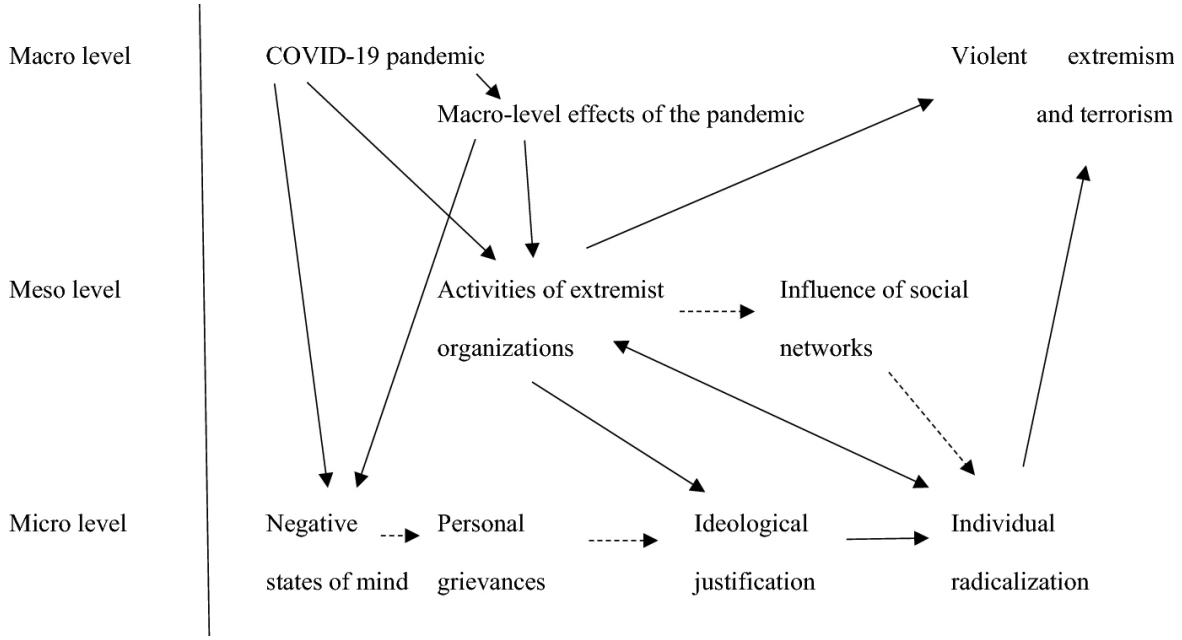
1 October 2020

What becomes apparent is the interval between crimes is reduced once the pandemic hit the majority of the U.S. in February of 2020, meaning that more crimes associated with this group took place during the pandemic than pre-pandemic. This could be due to more extreme members joining in the rapid increase phase from March to June; thus, pushing the group as a whole toward more extreme actions via the "slippery slope". Now that some of the major factors that play a role in the radicalization process have been described, let's dive into some of the models within this field of study.

One of the major agent-based models of the past, titled the MASON model and proposed by Cioffi-Revilla and Harrison (2011), was used as an initial inspiration for the approach with my agent-based model:



However, I disagree with them on three parts. First, as already established via "unfreezing" and the "slippery slope", it is not necessary that the individual loses killing inhibition before becoming radicalized as typically this would be an emergent behavior displayed by individuals at the group level. Second, they used a "demagogue" who was already an established member of a radical group in order to draw other vulnerable people in. I believe this is unnecessary as people will eventually become their own "demagogues" to others the further they are drawn into the process. With this being said, a "demagogue" would only accelerate the shift from pre-radical to radical. Lastly, the process of spread only took into account being physically near to one's neighbors. However, with modern-day technology one is able to talk to anyone they desire at any point in time. Therefore, locational constraints are no longer an issue. This leads me to introduce what I believe is a more accurate model, Marone's model (2011):



This model more accurately follows current research as "Violent extremism and terrorism" is the emergent phenomena of individual radicalization. In addition, there is the influence of social networks on the micro-level which accounts for current-day "unfreezing" and search methods… all of which have been impacted by the pandemic at the macro level.

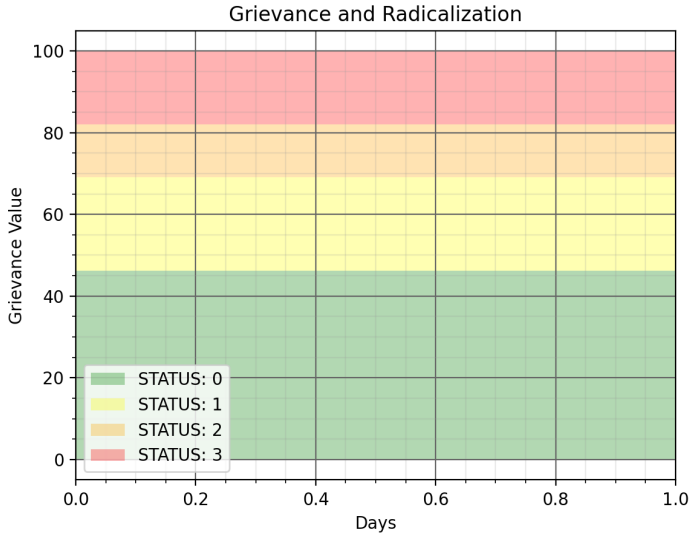
The goal of my project is two-part. First, I aim to produce an agent-based model depicting the process of radicalization that takes into account the characteristics described above. And second, to observe the effects of the COVID-19 case compared to the pre-pandemic case.

Methods

In this methods section, I will not only describe what's implemented within the model, but also give reasons justifying my decision. The main premise of the model follows in the footsteps of previous models where an individual's grievance directs what level of radicalization they fall under.

These "levels" consist of four statuses that an individual can lie in at any given time: pre-radicalized (0), searching phase (1), posting phase (2), call to violence (3). The statuses

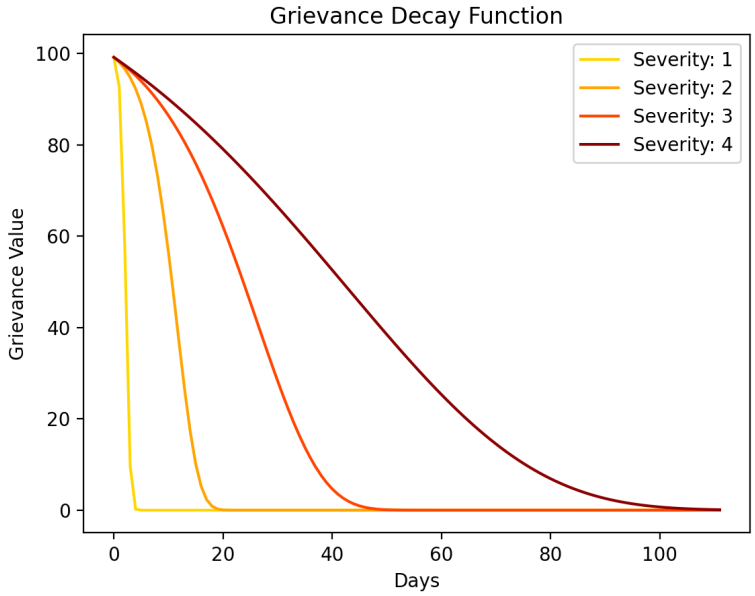
depict what behaviors the agents will display. If the agent is in status 0 (pre-radicalized) or status 3 (call to violence), there is no associated behavior beside labeling where they lie. If an agent lies within status 1 (searching), they have a probability to search for a person who thinks similarly to themself (I will explain in more detail later). Lastly, if an agent's status is 2 (posting), they post their top grievance for others to find in order to recruit the searchers (from status 1). These four phases were inspired by Klausen's extensive, "Behavioral Model of 'Homegrown' Radicalization Trajectories" (2015). The status that someone is in relies on the amount of grievance that one has accrued as well as their specific threshold per each status level in order to give slight variability between people. An image of one's thresholds is depicted below:



The thresholds for the statuses are weighted ½ for status 0, ⅔ for status 1, ⅚ for status 2 in order to make the initial plunge into radicalization more difficult, but create a "rabbit-hole" for those involved to be pulled even further in.

For every day within the simulation, if an individual is selected, they have a chance that an event will occur. If the event occurs, the individual will be given a grievance value as well as a grievance severity. The probability of an event occurring was determined to be 0.337 with an

average severity of 2.7 out of 4 based upon Almeida, Wethington, and Kessler's "The Daily Inventory of Stressful Events: An Interview-Based Approach for Measuring Daily Stressors" (2002). Each grievance value is weighted by the severity of occurrence (think of it as someone stealing a piece of candy from you would be ~1 and someone stealing your car would be ~4). Each severity also has an associated sigmoid decay function in order to decrease the effects of the grievance over time proportionately to how salient/severe the event was:



As stated previously, status 1 involves the idea of "searching". If an individual is selected and they fall under status 1, they have a probability to search. When an individual searches, they search through the list of posts; if the post's grievance level and severity are close enough to the event of the individual that was used to search, then that particular searcher's grievance value will increase slightly.This compounds the grievance as the individual becomes more confident that their belief about an event is the correct belief. This is to simulate the idea of justification through confirmation bias, or searching for what one believes or wants to confirm.

The final portion of the model that I'm going to discuss is the introduction of the pandemic. There are three relevant pieces of data regarding this function, two of which come from the American Psychological Association (APA). The first two are the following: the APA determined that 78% of Americans said that the pandemic was a significant form of stress, and 67% said that they have experienced increased stress over the course of the pandemic (American, 2020). The third statistic comes from Moonshot CVE, a Google-backed startup that deals with tracking/preventing online radicalization (Louise, 2018). They report that there has been a 21% increase in searches in the United States with places that have had a stay-at-home ordinance in place (Moonshot, 2020b). To summarize, the only variables changed in the base case are:

1.) The search percentage (increased by 21%)
2.) 78% of the population was given a grievance with a severity 3 or 4
3.) 67% of the population's likelihood of having a grievance occur on any given day was increased a random amount upwards of 15% (0.334 + 0 to 15%)

One last thing to note, the pandemic function was introduced halfway through the simulation (day 183) in order for the model to be in a steady state before any changes were applied.

Results

Base Case Data:

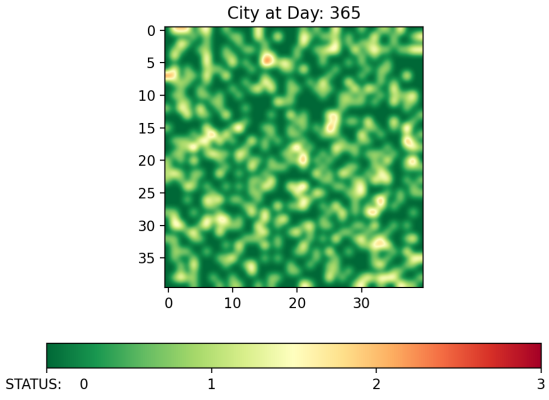


Figure 1: The final heat map after 365 days

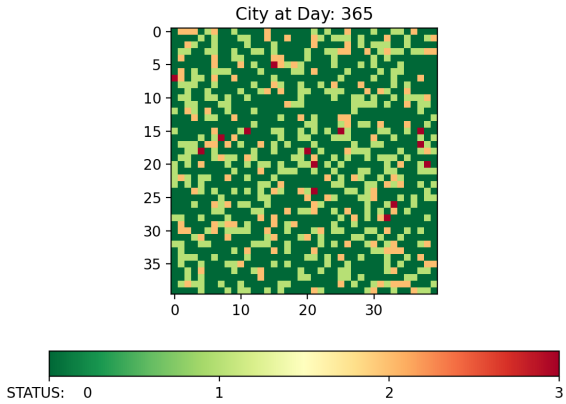


Figure 2: The definitive layout of the city after 365 days

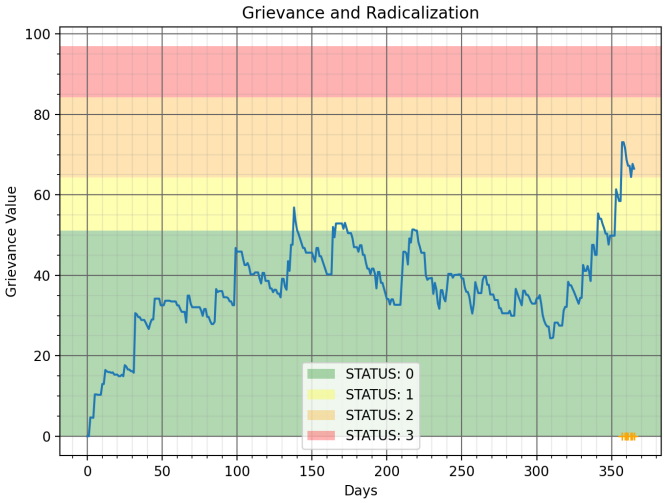


Figure 3: A particular individual's grievance throughout the simulation

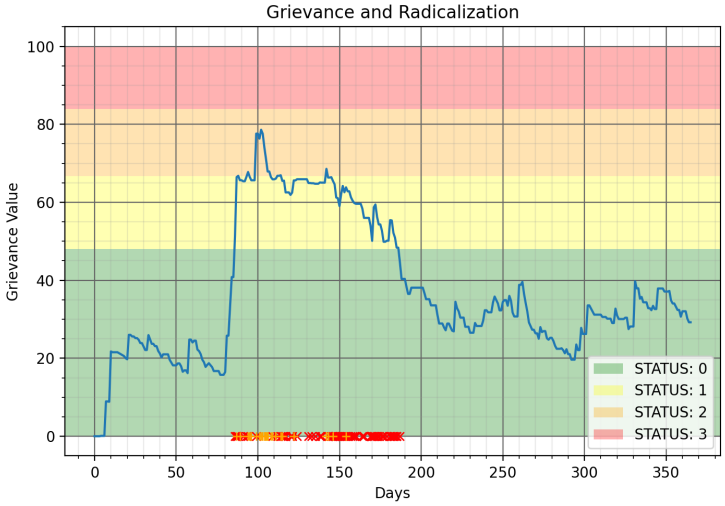


Figure 4: In this image, the red X's represent successful searches and the orange +'s represent a posting from this individual

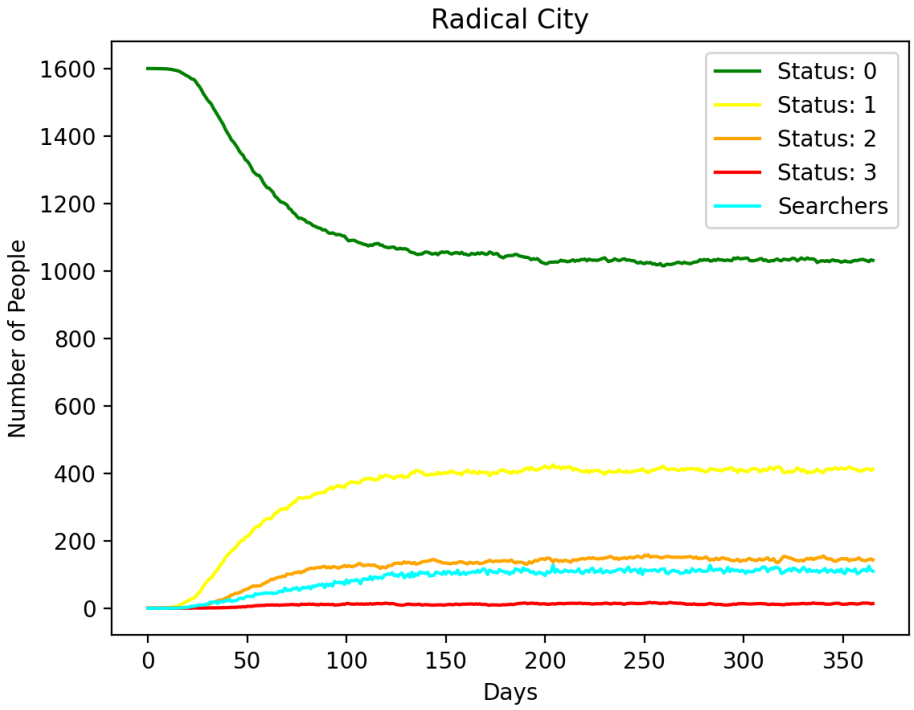


Figure 5: This represents the number of people per each status on a given day averaged over five runs of the simulation. Per each simulation, the total number of people was 1600

Table 1: The amount of people per each status at a given time step (total size of 1600)

Time Step: Days	**Status: 0**	**Status: 1**	**Status: 2**	**Status: 3**
180	1038.60	410.20	140.00	10.40
210	1029.20	418.60	139.00	13.40
240	1034.80	404.60	148.00	12.60
270	1022.00	413.20	151.00	13.80
300	1036.00	409.60	140.60	13.80
330	1038.40	405.40	142.60	13.60
360	1033.60	408.40	144.00	14.00

Table 2: The average severity value per each individual at a particular status level

Status	Average Severity Value
0	2.687
1	2.715
2	2.733
3	2.740

Table 3: The average number of grievances per each individual at a particular status level

Status	Average Number of Grievances
0	137.143
1	139.578
2	140.495
3	141.012

Post-Pandemic Data:

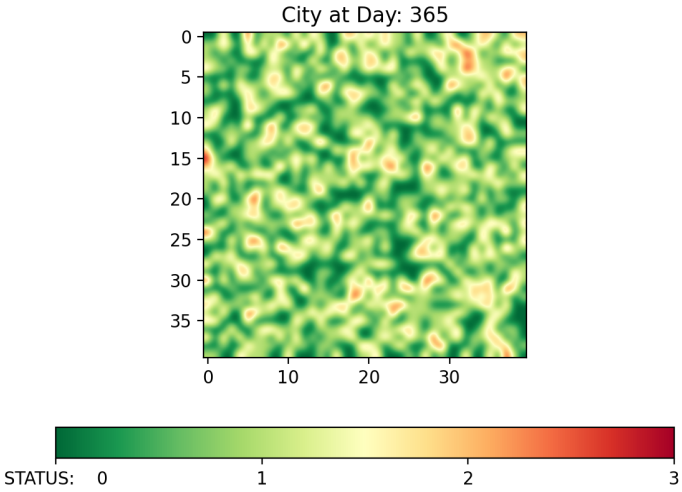


Figure 6: The final heat map after 365 days

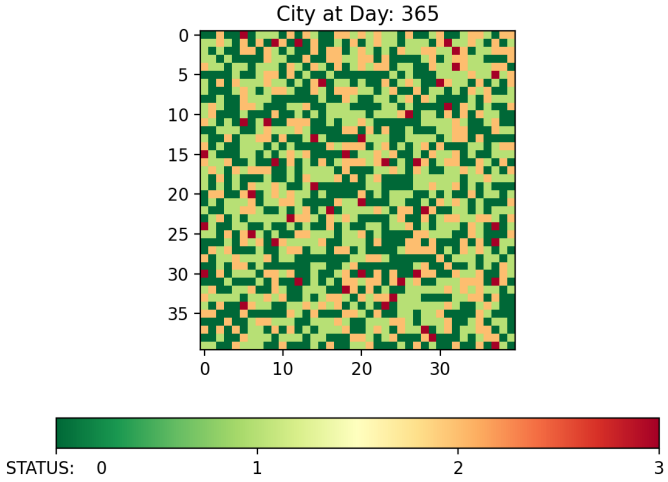


Figure 7: The definitive layout of the city after 365 days

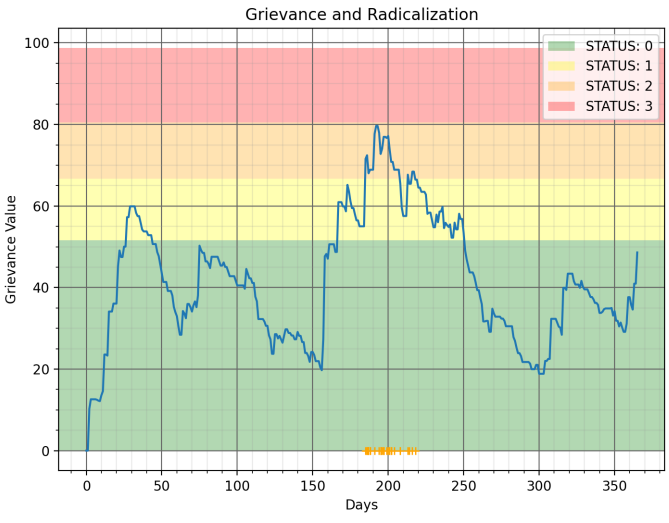


Figure 8: A particular individual's grievance throughout the simulation

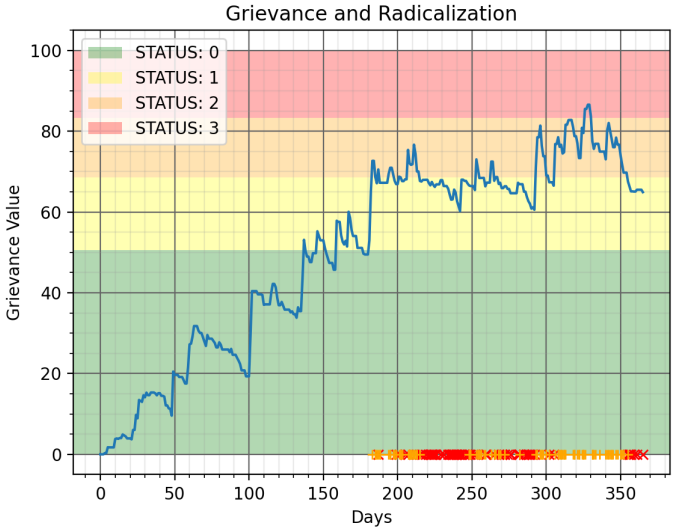


Figure 9: A particular individual's grievance throughout the simulation

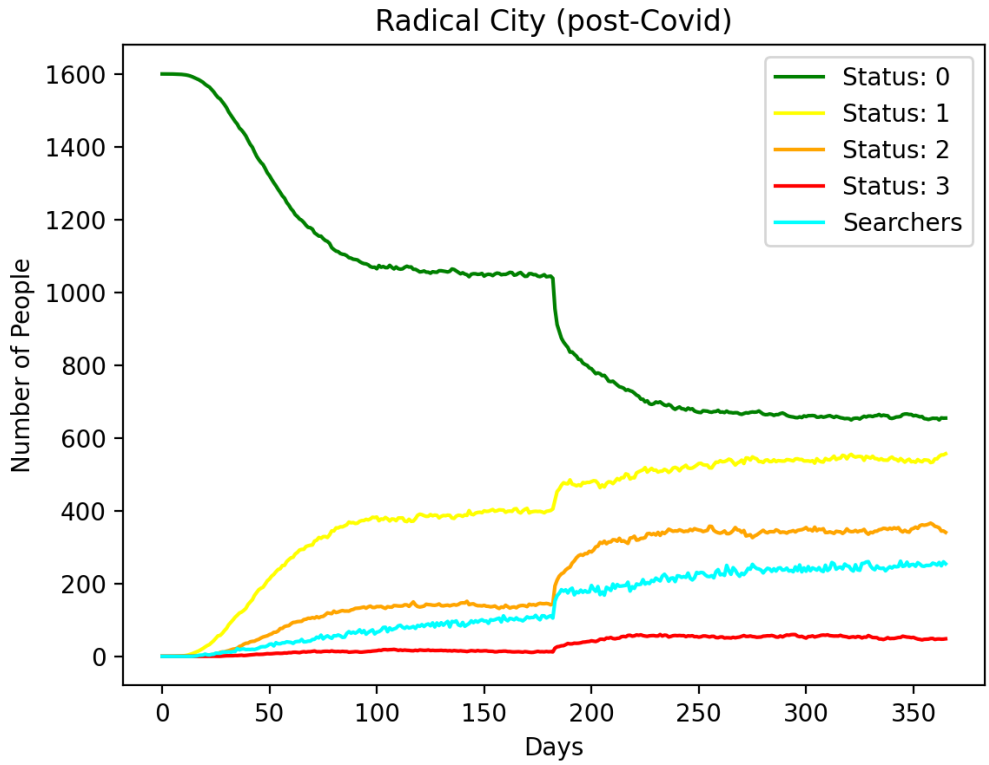


Figure 10: This represents the number of people per each status on a given day averaged over five runs of the simulation.

Table 4: The amount of people per each status at a given time step (total size of 1600)

Time Step: Days	Status: 0	Status: 1	Status: 2	Status: 3
180	1042.80	398.40	145.40	13.40
210	754.80	479.00	314.40	51.80
240	678.60	519.20	344.80	57.40
270	666.20	534.20	346.60	53.00
300	660.60	536.80	350.40	52.20
330	660.20	547.00	335.60	57.20
360	654.20	533.80	362.80	49.20

*Note: The pandemic wasn't initialized until day 183

Table 5: The average severity value per each individual at a particular status level

Status	Average Severity Value
0	2.687
1	2.715
2	2.721
3	2.745

Table 6: The average number of grievances per each individual at a particular status level

Status	Average Number of Grievances
0	144.184
1	149.397
2	151.884
3	158.164

Percent Change Between Base Case and Post-Pandemic:

Table 7: Percent change between Base Case and Post-Pandemic (total size of 1600)

Time Step:	Status: 0	Status: 1	Status: 2	Status: 3
180	0.404	-2.877	3.267	28.846
210	-26.661	14.484	126.187	286.567
240	-34.422	28.324	132.973	355.556
270	-34.814	29.284	129.536	284.058
300	-36.236	31.055	149.218	278.261
330	-36.421	34.928	135.344	320.558
360	-36.707	30.705	151.944	251.429

*Note: The pandemic wasn't initialized until day 183

Table 8: The percent change in the average severity value per each individual at a particular status level

Status	Average Severity Value
0	0.007
1	-0.159
2	-0.419
3	0.174

Table 9: The percent change in the average number of grievances per each individual at a particular status

Status	Average Number of Grievances
0	5.134
1	7.034
2	8.106
3	12.163

Discussion

Comparing the figures 1, 2, and 5, to figures 6, 7, and 10, respectively, it becomes apparent that the pandemic has drastically shifted the population toward more radicalized behavior. The most interesting properties of the agent-based model are depicted in tables 2, 3, 5, 6, and 9. From these tables, it can be gathered that individuals who have been impacted more severely *and* have had more total events are more vulnerable targets for radicalization. This accurately aligns with current research; the more an individual is shaken with grievances, the more susceptible they are to becoming radicalized (Trip et al., 2019). If this theoretical agent-based model is accurate, it might be possible to predict the degree of radicalization that will occur after a mass event in order to better prepare for future events caused by extremist groups. However, that claim is incredibly ambitious/optimistic due to countless possible

interactions between known and still unknown factors in the radicalization process. But this agent-based model, I believe, is a good starting point for future changes, iterations, and implementations.

In the agent-based model's current state, the social network is quite rudimentary as people only search for specific events similar to theirs. It would be interesting to implement somewhat of a "trust" system where if two individuals have similar grievances and find each other, then they will be more likely to interact in the future (similar to following someone on social media). With this implementation it would be interesting to look into the social circle of those who have been radicalized to see if they form a continuous feedback loop which constantly "gaslights" each of the other members causing the group as a whole to become more radicalized. In retrospect, I also believe that it would be beneficial to alter the base case to allow individuals to have physical social interactions as well as movement in order to see how this would impact their openness (ability to form grievances). Also, I believe giving the agents more specific events (such as job loss, financial problems, health stressors, divorce, etc.) might be interesting as well. However as with any model, it's a fine line to tow between overgeneralization and overspecification.

Even if we develop the "perfect model", it only captures how things are, not necessarily what steps to take in order to go where we'd want to be. The question arises, how do we move forward, and what options do we have in order to combat the radicalization process? Oftentimes one of the first solutions that comes to mind is censorship. But I believe censorship is an absolutely horrible idea as it only applies a bandaid to the festering wound. Censorship only affects the number of found searches; however, the group's grievances would likely increase due

to the perceived injustice of being silenced. In addition, the radical groups would move even more underground which would make it more difficult to try to reach them.

One extremely beneficial way to deal with radicalization is Moonshot CVE's Redirect Program. It targets radicalization at its source by providing one who is searching for radical content an ad that has the potential to redirect the radicalist's beliefs by showing the other side of the story (Moonshot, 2020a). Another option is rational emotive behavioral psychotherapy (REBT) which allows one to deal with the overwhelming feeling of one's loss of purpose by reassessing inappropriate or dysfunctional emotions (Trip et al., 2019). REBT aids the individual by helping them avoid irrational appraisals in regard to life events as well other disturbed feelings/behaviors. Another avenue is the United Nations's work in helping countries "deliver education programmes that build young people's resilience to violent extremist messaging and foster a positive sense of identity and belonging" (United, 2020). With these options, I believe the future is bright and we will ultimately be able to come together when faced with mass adversity instead of being split apart at the seams.

References

Acevedo, N. (2021, January 31). Woman who said she wanted to shoot Pelosi during Capitol riot arrested. NBCNews.com. https://www.nbcnews.com/politics/congress/woman-saying-she-wanted-shoot-pelosi-friggin-brain-during-capitol-n1256275.

Almeida, D. M., Wethington, E., & Kessler, R. C. (2002). The Daily Inventory of Stressful Events An Interview-Based Approach for Measuring Daily Stressors. *Assessment*, *9*(1), 41–55.

American Psychological Association. (2020, October). *2020 Stress in America Graphs: English Data Charts*. American Psychological Association. https://www.apa.org/news/press/releases/stress/2020/infographics-october.

Beckett, L. (2020, October 16). *QAnon: A timeline of violence linked to the conspiracy theory*. https://www.theguardian.com/us-news/2020/oct/15/qanon-violence-crimes-timeline.

Bomey, N., & Guynn, J. (2020, October 2). *How QAnon and other dark forces are radicalizing Americans as the COVID-19 pandemic rages and election looms*. USA Today. https://www.usatoday.com/in-depth/tech/2020/08/31/qanon-conspiracy-theories-trump-election-covid-19-pandemic-extremist-groups/5662374002/.

Bureau of Labor Statistics - U.S, Department of Labor. (2021, April). *THE EMPLOYMENT SITUATION — MARCH 2021*. https://www.bls.gov/news.release/pdf/empsit.pdf.

Chalabi, M. (2021, February 22). *Covid in US has left 4 million family members grieving, study finds*. The Guardian. https://www.theguardian.com/world/datablog/2021/feb/22/covid-4-million-family-members-grieving-us-study-finds.

Cioffi-Revilla, C., & Harrison, J. F. (2011, March). *Pandemonium in Silico: Individual Radicalization for Agent-Based Modeling*. http://krasnow.gmu.edu/socialcomplexity/files/2015/08/Cioffi-Harrison-RadicalAgent-ISA-Final.pdf.

FBI. (2015, October 23). *Why Do People Become Violent Extremists?* Don't Be A Puppet. https://www.fbi.gov/cve508/teen-website/why-do-people-become-violent-extremists.

Klausen, J., Campion, S., Needle, N., Nguyen, G., & Libretti, R. (2016). Toward a Behavioral Model of "Homegrown" Radicalization Trajectories. *Studies in Conflict & Terrorism*, *39*(1), 67–83. https://doi.org/https://doi.org/10.1080/1057610X.2015.1099995

Leatherby, L., Ray, A., Singhvi, A., Triebert, C., Watkins, D., & Willis, H. (2021, January 12). *How a Presidential Rally Turned Into a Capitol Rampage*. The New York Times. https://www.nytimes.com/interactive/2021/01/12/us/capitol-mob-timeline.html.

Leonhardt, M. (2020, December 11). *63% of Americans have been living paycheck to paycheck since Covid hit*. CNBC. https://www.cnbc.com/2020/12/11/majority-of-americans-are-living-paycheck-to-paycheck-since-covid-hit.html.

Louise, N. (2018, March 29). *Moonshot CVE, a Google-backed startup is using internet*

ads to counter online extremism: Tech News: Startups News. Tech News | Startups News. https://techstartups.com/2018/03/29/moonshot-cve-a-google-backed-startup-is-using-internet-ads-to-counter-online-extremism/.

Marone, F. (2021). Hate in the time of coronavirus: exploring the impact of the COVID-19 pandemic on violent extremism and terrorism in the West. *Security Journal*. https://doi.org/https://doi.org/10.1057/s41284-020-00274-y

McCauley, C., & Moskalenko, S. (2011). *Friction: How Radicalization Happens to Them and Us*. Oxford University Press.

Moonshot CVE. (2020a, December 7). *Facebook Redirect Programme: Moonshot Evaluation*. Moonshot CVE. https://moonshotcve.com/facebook-redirect-programme-evaluation-report/.

---. (2020b, April 29). *COVID-19: Searches for white supremacist content are increasing*. Moonshot CVE. https://moonshotcve.com/social-distancing-white-supremacy/.

Pew Research Center. (2018, November 20). *Where Americans Find Meaning in Life*. Pew Research Center's Religion & Public Life Project. https://www.pewforum.org/2018/11/20/where-americans-find-meaning-in-life/.

Pramuk, J. (2021, January 15). *Capitol rioters came within a minute of reaching Pence, report says*. CNBC. https://www.cnbc.com/2021/01/15/dc-capitol-rioters-

nearly-reached-vice-president-mike-pence.html.

Soucheray, S. (2020, May 8). *US job losses due to COVID-19 highest since Great Depression*. CIDRAP. https://www.cidrap.umn.edu/news-perspective/2020/05/us-job-losses-due-covid-19-highest-great-depression.

Trip, S., Bora, C. H., Marian, M., Halmajan, A., & Drugas, M. I. (2019). Psychological Mechanisms Involved in Radicalization and Extremism. A Rational Emotive Behavioral Conceptualization. *Front Psychol*, *10*(437). https://doi.org/https://dx.doi.org/10.3389%2Ffpsyg.2019.00437

United Nations Educational, Scientific and Cultural Organization. (2020, January 14). *Preventing Violent Extremism*. UNESCO. https://en.unesco.org/preventing violentextremism.

von Behr, I., Reding, A., Edwards, C., & Gribbon, L. (2013). *Radicalization in the Digital Era*. RAND Corporation. https://www.rand.org/randeurope/research/projects/internet-and-radicalisation.html.

Winter, J. (2019, August 1). *Exclusive: FBI document warns conspiracy theories are a new domestic terrorism threat*. Yahoo! https://www.yahoo.com/lifestyle/fbi-documents-conspiracy-theories-terrorism-160000507.html.