

# **The Effects of the COVID-19 Response on Criminal Network Activity and Investigations**

June 2020





## EXECUTIVE SUMMARY

---

Criminal organizations are like organisms in the sense that they respond to environmental changes. Like any organism, these adaptations aim to ensure survival when threatened, but also attempt to exploit unexpected opportunities.

The spread of COVID-19 in the winter of 2019 and spring of 2020 and the associated response actions taken by governments, companies, and individuals represent a significant environmental change for many organisms, including networked criminal organizations.

This paper presents current thoughts on what some of those changes are and what they might be, based on data and the expertise and experience of the authors. Some modifications are obvious and already backed by data, while others less so and more hypothetical or speculative. By quickly understanding adjustments or new conditions already underway, and by proposing likely scenarios, gaps, and opportunities not yet observed, we hope to help law enforcement and other authorities get ahead of these evolving criminal organizations.

Networked criminal organizations are dynamic, responsive, and flexible, which gives them an advantage in this current environment. However, law enforcement is more organized, cooperative, and cohesive as a whole, allowing for timely adaptation to changing criminal activity and predictive exploitation of anticipated shifts in networked criminal activities.

# CRIMINAL NETWORK FLOW, ACTIVITIES, AND DISRUPTION

Criminal networks operate like other businesses, delivering a good or service to a customer in exchange for something of value, typically money. As with legitimate businesses, criminal organizations are subject to supply and demand pressures, price fluctuations, competition, supply chains, and market opportunities.

Additionally, criminal organizations have both an advantage in that they ignore or circumvent most rules, and a disadvantage in that multiple law enforcement entities are actively working against them. For most criminal organizations, profits are exceptionally high while the risk of getting caught is low, but of high consequence.

Both of these aspects, the profit and the risk, differ at various levels of the organization, in different geographic locations, and in different criminal domains. Criminologists study these and other aspects of criminal organizations to understand their operations, to craft prevention and disruption strategies, and to anticipate the effects of those strategies. *Crime displacement theory* [1] argues that if you focus prevention (or restrictions that have the effect of prevention) on one place, then crime will shift to another, and that an offender who is blocked from one crime will find another crime to commit. This theory is based on the idea that offenders are driven to crime and that there are abundant

opportunities for crime in a jurisdiction. Subsequent research [2] suggests that traditional or physical crime is intricately linked to particular situations and places, and that those places have opportunity structures that may be unique, and certainly are not available at every place. Even virtual online crime may have a sense of place, e.g., the dark web, specific forums or sites, or infrastructure locations with relevant connectivity, privacy, or jurisdictional characteristics.

***“Criminologists study these and other aspects of criminal organizations to understand their operations in order to craft prevention and disruption strategies and to anticipate the effects of those strategies.”***

In many cases, other areas will improve as a result of prevention, either because offenders have been removed from the scene (who could commit crime elsewhere) or because the limited opportunities for crime have been reduced. Additionally, a study of displacement at crime markets in Jersey City, New Jersey, noted simply that offenders do not move from their familiar crime locations very easily [3]. In interviews, they looked at spatial movement of crime as being dangerous or difficult. For example, in new environments people wouldn't know who

they could “trust” versus who might go to the police. The same study found that areas near a large drug market and a large prostitution market that had received prevention efforts had reduced crime despite not receiving extra police attention.

Investigators currently working these types of crime are concerned that some of the apparent physical crime reduction may now be displacement to online markets.

The term *diffusion of benefits* [4] gained traction over time as a series of studies showed that prevention benefits would often spread beyond the places, types of crimes, individuals or situations to which they were focused. It is worthwhile to consider this idea in regard to governmental efforts to curb the coronavirus spread.

Closing of the borders and reducing air travel also restricted criminals. In Israel, during the Second Intifada, studies have shown large reductions in auto theft when the borders were sealed. This was not just a result of criminals not being able to get into the country. Auto theft gangs could not get the cars to cooperating Arab gangs across the border in the Palestinian areas.

The idea of diffusion of benefits is clearly not restricted to crime prevention, and it is worthwhile to consider the idea in terms of prevention. One could also apply the idea of prevention efforts to restrict the spread of COVID-19. In fact, a recent [survey](#) by the International Association of Chiefs of Police and the Center for Evidence-Based Crime Policy at George Mason University noted

that 61% of responding law enforcement agencies indicated that they had adopted formal policies to reduce or limit proactive traffic or pedestrian stops. In addition, 73% of responding agencies had adopted policies to reduce or limit community-oriented policing activities, suggesting that any increased displacement or diffusion of benefits would be due to pandemic response actions and not increases in proactive policing.

To that point, our researchers have observed reductions in violent crime in cities across the country. At the same time, we are also [seeing](#) increases in reports of domestic violence, including [child abuse](#).



## OBSERVATIONS

The following section highlights specific examples of the effect of pandemic response actions on criminal activity. Where possible, the corresponding effects on law enforcement investigators are noted and suggestions for adaptation are proposed.

### Fentanyl Production

In addition to being the origin of the COVID-19 outbreak, Wuhan, China, is also a key production center of the opiate fentanyl. In mid-February, analysts at [TraCCC](#) monitoring an online fentanyl seller noticed that shipments were temporarily cancelled. Shortly after, [media reports](#) indicated Mexican drug cartels were cutting fentanyl production as they were not able to obtain the precursor chemicals from China. The [supply chain](#) for fentanyl has proven surprisingly fragile, with no viable alternatives to China.

***“Recruitment of young girls for human trafficking is continuing. The situation is exacerbated because girls are out of school and socially isolated.”***

Although fentanyl production in Wuhan recently resumed (mid-April), the supply is likely to remain low for months, resulting in [high prices](#), failure or radical adjustment of some highly specialized criminal

organizations, drug and chemical substitutions, and desperate consumers. Similarly, travel lockdowns have [crippled](#) European drug distribution networks. The drugs are making it to ports of entry, but no one is able to carry them inland. This creates an opportunity for law enforcement to recognize anomalous cargo handling and to investigate while cargo and their carriers remain in port.

### Counterfeit Luxury Goods

The media source reporting the Mexican cartel fentanyl shortages also reported a shortage of counterfeit luxury goods for sale in Mexico City. These goods are sourced from China by individuals travelling from Mexico with cash and returning with counterfeit goods.

Travel restrictions also halted this flow, and illicit goods businesses were unable to pay extortion fees to local criminal organizations. Researchers expect some of the illicit businesses to close, change suppliers, or change product lines (e.g., to participate in the local drug market), and expect the criminal organizations to look elsewhere for the lost revenue.

### Coyotes

Human smugglers (coyotes) have seen a boom in business since travel restrictions were put in place. In Honduras, [for example](#), coyotes have raised prices in response to increased demand. Following basic economics, more individuals will likely enter the human and goods smuggling business, many of these from other criminal

organizations currently being negatively affected by the pandemic response. When the demand subsequently drops, we expect to see a drastic drop in prices and individuals and criminal organizations will scramble again to find new lines of revenue. This example of potential crime displacement is addressed more broadly in a recent University of Cambridge [webinar](#). Some transportation-dependent and human contact crimes are contracting while new opportunities such as abuse of state funding, insider trading, and black markets are attracting some portion of the available criminal pool. It remains to be seen whether specific crime area contractions and growth areas persist, or whether post-pandemic circumstances cause reallocations of criminal resources. Taking a simple economic view, it is likely that criminal organizations will continue to seek to optimize profits which may mean considerable growth, i.e., resurgence of pre-pandemic activity and continued activity in the new areas.

## Human Trafficking

Recruitment of young girls and boys for human trafficking is continuing. This situation is exacerbated because youths are out of school and socially isolated. [Tech against Trafficking](#) has identified five trends that it sees occurring, and the group anticipates significant growth in sexual trafficking in the coming period.

These trends are very much illustrated in the community around George Mason University (Mason), the home institution for CINA. Vulnerable teenage girls are being approached by older men through popular

apps such as Tinder, Instagram, Twitter, Snapchat, YOLO, and Lemon. Stay at home orders have been issued, and vulnerable girls cannot be monitored by schools or social service agencies. Meanwhile, predators online have ample time to groom these girls just enough to gain their trust by the time school reopens.

Once we can go about normal business, many girls will have made plans to meet their online “boyfriends” in person. In the midst of social distancing, human traffickers, pimps, and predators have gained the full attention of these girls. With schools closed and access to support services limited, the number of reports is reduced to almost none.

The pandemic response environment exposes vulnerable youth to increased risk while limiting their access to people or support programs which help protect them from sexual predators. On a related note, some traffickers are dropping off drugs at the doors of girls that they are seeking to recruit for future sexual exploitation.<sup>1</sup>

## Financial Crime and Money Mules

Recruitment of money mules is an active part of the business model of criminal networks targeting “naive housewives, students, and the long-term unemployed [who] answer online ads ...for illicit traders shifting money between bank accounts and countries.” [5] In a spring 2020 Mason class, two students were targeted as money mules; one of them through a school email account, and the other through the Nextdoor app (see screenshot in Endnotes). An illicit trader in

<sup>1</sup> Analysis of the Virginia situation provided by Bibiana Herrera-Paniagua, a student of the George Mason University Schar School of Policy and Government.

search of money mules has a huge resource base due to the stay at home orders and business closures. Several elements of the recruiting post were identified as suspicious: (1) the poster's husband supposedly owns a legitimate business, but it is difficult to believe this unnamed financial services office was expanding their work while finance in general was taking a hit, (2) all interaction was to be remote, including the Zoom interview and all work responsibilities (although possible in the current environment, still unlikely for legitimate businesses). The message was an emotional appeal to the people who are struggling and need work during the pandemic.

Based on our current understanding of money mules, this is ideal for a criminal enterprise: hiring recently out of work people to do a money related job for a boss and office they may never see in person. We also considered how illicit cartels like to use the diaspora in a country. Columbia Heights, the target area for this population, has a large Latin American population that an illicit trader could use to his or her advantage.

Many people were interested in the job opportunity. There were several requests for more information such as a business name or job announcement, but the poster refused to provide any more information and requested interested individuals provide their e-mail to her directly via DM (direct message). This refusal to provide information while advertising a finance job in an economic downturn fits the profile of a criminal organization looking for money mules. As of Sunday, April 19, 2020, the

post has been removed from Nextdoor.<sup>2</sup> Since the COVID-19 pandemic started, another student has received two emails to their university email account that appear to be money mule recruitments. In both cases, the request was described as wanting someone who could make electronic payments for doctors currently working on the front lines fighting the coronavirus. One offered \$500/week and the other offered \$700/week. One of the emails was very poorly written and had multiple grammar and spelling mistakes. The other had very few mistakes, yet both emails said the recipient had been selected by the "United States Health Department" (which does not exist). The closest entity would be the United States Department of Health and Human Services.

These requests take advantage of people's fears and heartstrings: they exploit the fear people have as they lose their jobs or graduate into an uncertain market. They play on people's sympathies for healthcare workers during this pandemic by giving them a way to "help." In either case they trick people into assisting organized crime.<sup>3</sup>

## Environmental Crime and Criminal Networks<sup>4</sup>

We observed several changes in environmental crime activity and enforcement specifically related to illegal, unreported and unregulated fishing and [wildlife poaching and trafficking](#). The organization Sea Shepherd, which has an memorandum of understanding with the government of Mexico to patrol the Vaquita Refuge and remove illegal gill nets as part of Operation Milagro, has had to suspend operations due to the coronavirus.

<sup>2</sup> Analysis provided by Sean Dubiel, student at the Schar School of Policy and Government.

<sup>3</sup> Analysis provided by Richard Catherina, student at the Schar School of Policy and Government.

<sup>4</sup> This section was prepared by Marisol Maddox, student at the Schar School of Policy and Government.

## ***“The FBI has already identified a number of cryptocurrency-based fraud schemes related to COVID-19, primarily Ponzi schemes, investment scams, and blackmail attempts.”***

Totoaba poaching is continuing, and gill nets that also kill vaquitas are being used. The Mexican Navy is supposed to be patrolling those waters but they appear to be ineffective in countering illicit activity that has been [documented](#) by fishermen in the area. “Videos taken by local fishermen show dozens of dead totoaba washing ashore, piles of discarded and decaying fish, and boats full of men slicing out totoaba swim bladders.”

Russia is also [experiencing](#) a surge in poaching. “In the Primorye region alone, Russian authorities registered 144 cases of illegal hunting from March 31-April 6, a more than threefold increase from March 16-30”, WWF Russia [said](#). Nepal also is seeing a surge in wildlife poaching due to the COVID-19 lockdown. Experts [say](#) multiple factors, including the impact of COVID-19 on the livelihoods of poor people, less patrolling, little movement of people, and entry of animals into human settlements, are contributing to the increase in poaching activities. Rhino poaching is [increasing](#) as well; from the NY Times article: “as soon as the lockdown hit South Africa, we started having an incursion almost every single day.”

Poaching incidents in Botswana and South Africa “were unusual because they occurred in tourism hot spots that, until now, were considered relatively safe havens

for wildlife.” The operations manager at the 4,750-hectare Mankwe Wildlife Reserve in South Africa’s North West province said, “We’ve had a few incursions recently, but I’m expecting an onslaught if this lockdown carries on for months on end.”

On a related note, the U.S. is one of the primary markets for illegal timber from the Russian Far East. It often travels from Russia into China across the border at Suifenhe. On April 7, 2020, the passenger corridor at the Pogranichny–Suifenhe checkpoint was [closed](#) due to the coronavirus, cutting off that particular supply route.

### **Changing Target Values**

Criminal organizations engaged in extortion need to put something of value to a victim at risk, e.g., life, health, possessions, etc., in order for the extortion to be effective.

The coronavirus response has altered the value of certain things, like toilet paper, respirators, ventilators, and hospitals, and criminal organizations have noticed. In March, a [Czech hospital](#) in the midst of a COVID-19 outbreak was hit by a cyber attack and operations were negatively affected. It remains unclear whether the attack was a deliberate extortion attempt, but the changing landscape was clear - a hospital packed to capacity in the midst



of a global health crisis cannot afford to reduce operations, and will likely pay more to remain fully operational than under normal circumstances. By the same logic, certain medication values spiked in response to a handful of media reports, followed quickly by [online scams](#) and counterfeit goods for sale at inflated prices.

## Medical and Cleaning Supplies

Criminal organizations have always been entrepreneurial, and the on-going crisis presents them with a unique opportunity [to put this mentality to work](#).

As facemasks became a commodity, [fake websites started popping up offering N95 masks](#). Police in Turkey recently [seized over one million counterfeit surgical masks](#), faulty masks were [found](#) in Romania, and US CBP agents have made multiple recent seizures of counterfeit and unapproved personal protective equipment and medications.

Cybercriminal organizations are [expanding](#) their activities in general to exploit emerging opportunities with activities such as bogus cures, faulty diagnostics, and donation scams.

Furthermore, with medical and cleaning supplies facing unprecedented levels of scarcity, the Mexican criminal group Cártel de Jalisco Nueva Generación (CJNG) has been hoarding hand sanitizer in the State of Michoacán. This provides the group with an instrument for financial gain, but also for community leverage, potentially strengthening their status as a local authority that rivals state authority.

## Cryptocurrency

The on-going economic crisis further complicates the landscape of criminal activities. On one end, phishing scams, as mentioned previously, are becoming more of an issue, preying on the increased public reliance on the Internet. The FBI has [already identified](#) a number of cryptocurrency-based fraud schemes related to COVID-19, primarily Ponzi schemes, investment scams, and blackmail attempts.

This is consistent with the [2020 Chainalysis Crypto Crime Report](#) finding that scams represent the majority of illicit cryptocurrency activities as of the end of 2019, having overtaken darknet markets over the past 2-3 years.

On the other end, in a departure from past trends, Chainalysis recently reported that since February 2020 the volume of transactions in [darknet markets has dropped together with the drop in the price of Bitcoin](#). This is a notable reversal of past trends, where one was dropping as the other rose (and vice versa). As referenced earlier, this may be due to the difficulties with pursuing certain illicit activities like drug trafficking in the midst of global lockdowns. But this may also be a reflection of illicit actors' concerns about an impending crash of the cryptocurrency market, which could indicate future trends.

## Police Resources

Police agencies across the country have geared up to deal with the increased demand on police service caused by the coronavirus.

In some cases that demand is already felt, as in New York City where 911 calls increased substantially according to news reports. Local law enforcement, especially for medium to large sized departments, have the ability to assign 911 calls and follow-up to patrol units so that investigative branches can continue their work, suggesting there may not be a decrease in ongoing investigative efforts.

However, the increased demand means less available resources overall, and special investigative efforts are likely to decrease over time. One can see this already with the holding up of special efforts involved with research. For example, a CINA Science Committee member reported that two government supported studies of proactive policing were cut back or temporarily suspended.

More generally, this means that there may be fewer police resources put into investigations of criminal networks, as resources are diverted to more immediate needs, and to the extent that local policing resources support federal investigations, those local resources will be less available.

## Guardianship

While the goal of pandemic control measures is to prevent spread of the coronavirus and reduce the surge in demand for emergency services so that hospitals and other services do not become overrun, we anticipate a diffusion of benefits to other areas of American life, including the domain of crime. As noted earlier, there is already

evidence of reductions in crime. The crime reductions are not just due to the reduced mobility of offenders and victims. Other prevention measures also have an impact. For example, there is considerable evidence that when homeowners are absent, they are much more likely to be the victims of home burglaries. This results from a decrease in “guardianship.” Burglars do not want to come into contact with household residents; that increases their risk of apprehension and often the penalties they would face in court.

The prevention efforts against the coronavirus are leading to many people staying at home. This will lead to increased guardianship and decreases in home burglaries. Unfortunately, increased time at home is also leading to [reported](#) increases in domestic violence and substance abuse. And, as more individuals spend time online, they become more subjected to scams.

## Work from Home

The transition of millions of workers, tech and otherwise, to home environments has [dramatically increased Internet traffic](#). While a corresponding increase in use of tools like The Onion Router (TOR) and access to the Dark Web might seem logical, early [reports](#) suggest that Dark Web traffic is largely unchanged. This is most likely due to the perceived technical barrier of TOR use, the lack of a Dark Web “Google,” and the general public fear of the Dark Web.

However, other [reports](#) suggest dramatic increases in access to online pornography, COVID-19 related [phishing](#) scams,

[nation state hacking](#), and, we anticipate a similar increase in access to illegal content. Illegal content providers and site operators are well-known for delivering malware and exploiting browser and other system vulnerabilities for ransomware installation and botnet creation, so we expect a spike in home-user compromises, ransomware attacks, and botnet growth.

Given that many home users are also accessing their enterprise systems through VPNs and similar tech services, we also expect a significant spike in enterprise system compromises via compromised home users.

Attackers are also going directly after the enterprise systems to which teleworkers connect, e.g., SANS [reports](#) a 30% increase in scans for Remote Desktop Protocol servers, one of the more common remote access applications. One Science Committee member experienced this firsthand: an RDP server on a home system, running on a random high-numbered port, saw its first malicious probe in five years over the last weekend in April, 2020. The attacker attempted over 28,000 (unsuccessful) logins over three days from three overseas nodes.

This is a technically simple attack but implies that someone took the time to scan many ports on many targets, established that the listener was an RDP server (it could have been anything), and spent almost 10 client-days attempting to guess accounts and passwords. From both defenders' and investigators' points of view, the current environment has created

many more potential vectors for an attack, which suggests robust segmentation, monitoring, and use of behavioral monitoring for defenders, and an even more difficult attribution challenge for investigators. As a minor side effect, we also anticipate high numbers of "inappropriate computer activity on an enterprise network" as users forget to disconnect their work VPNs prior to conducting non-work activity.

## CONCLUSIONS

---



Criminals and criminal networks are adapting to the changing environment wrought by a global pandemic and the associated response, exploiting new demand, changing operational focus, and threatening newly valuable organizations and supply chains. These changes are affecting the drug trade, human trafficking, illicit wildlife and poaching, and cyber criminal activities. While some criminal activity has been curtailed, organizations and individuals have quickly moved into new areas. We are in a global economic recession that may last several years, especially in developing countries that have less capacity to weather this crisis. Criminal groups may provide employment to others who cannot find work in the legitimate economy, and there may be an effort to recruit financially distressed individuals in the U.S. and other countries with developed financial sectors. [Cash-rich criminal organizations](#) may be able to make [strategic investments](#) and loans at this financially difficult time, improving their operations and creating indebted businesses. Criminal organizations may launder money into U.S. real estate, and these properties may then become safe and stash houses for subsequent operations as they did for Mexican drug cartels during and after the last financial crisis.

Changing criminal activity also presents opportunities for law enforcement: there are fewer people in public so criminal activity and suspects are [less likely to blend in with the crowd](#), there are fewer mass gatherings with associated crime and mass casualty risks, desperate criminals are taking increasing risks, and criminals are moving into new areas which they do not yet fully understand. There are also positive effects of the pandemic response, such as fewer home burglaries and fewer street robberies, and negative effects, such as increased domestic violence and the potential for long-term mental health issues.

It is reasonable to expect several outcomes of the current environment: (1) criminal activity will likely increase after the pandemic fades as criminal organizations return to pre-pandemic activities and keep newly developed markets and skills, (2) socioeconomic pressure will drive more people to criminal activity, providing raw human resources as well as demand for the new criminal goods and services developed during the pandemic, and (3) law enforcement is in an all-hands-on-deck crisis response mode which will not lend itself to fighting the expected future increase in criminal activity and demand. However, thoughtful consideration now, followed by strategic investments, data-driven monitoring, and deliberate capability development in the following months and years may curb and even suppress the coming surge.



## REFERENCES

---



- [1] Reppetto, T. (1976). *Crime prevention and the displacement phenomenon, crime and delinquency*, p. 22, pp. 166–177.
- [2] Weisburd, D., and Telep, C. (2011). *Spatial displacement and diffusion of crime control benefits revisited: New evidence on why crime doesn't just move around the corner*. In Nick Tilley and Graham Farrell (Eds.), *The reasoning criminologist: Essays in honour of Ronald V. Clarke*. Routledge Press.
- [3] Weisburd, D., Wyckoff, L., Ready, J., Eck, J.E., Hinkle, J.C., and Gajewski, F. (2006). *Does crime just move around the corner?: A controlled study of spatial displacement and diffusion of crime control benefits*. *criminology*, p. 44(3), pp. 549-591.
- [4] Clarke, R.V. and Weisburd, D. (1994). *Diffusion of crime control benefits: observations on the reverse of displacement*. In Ronald V. Clarke (Ed.), *Crime prevention studies*, Monsey, NY: Willow Tree Press. p. 2, pp. 165-184.
- [5] Shelley, L.I. *Dark commerce: How a new illicit economy is threatening our future* (Princeton: Princeton University Press, 2018), p. 125.

# ENDNOTES



Screenshot from Nextdoor app (see p. 5 'Financial Crime and Money Mules')



# ACKNOWLEDGEMENTS

---



This paper's development was a collaborative effort guided by the insightful comments and extensive subject-matter expertise of the CINA Science Committee.

**Joe DiZinno, College of Science  
George Mason University**

**Eduard Hovy, Language Technologies Institute  
Carnegie Mellon University**

**Jim Jones, Volgenau School of Engineering  
George Mason University**

**Mary Ellen O'Toole, College of Science  
George Mason University**

**Allison Redlich, College of Humanities and Social Sciences  
George Mason University**

**Louise Shelley, Schar School of Policy and Government  
George Mason University**

**Anthony Stefanidis, Computer Science  
William & Mary**

**David Weisburd, College of Humanities and Social Sciences  
George Mason University**



**Criminal Investigations  
and Network Analysis**  
A DHS CENTER OF EXCELLENCE

*Contact us to schedule a CINA capabilities briefing and learn more about sponsored research opportunities.*



**CINA Center at George Mason University**

4440 University Drive, MS 2A1

Fairfax, VA 22030

Email: [cina@gmu.edu](mailto:cina@gmu.edu)

Phone: 703-993-4409

Web: [cina.gmu.edu](http://cina.gmu.edu)

  @CINAatMason

