Operations

Chapter 9. Borders and Security

Dr. Christian Leuprecht

Borders and Illicit Networks: Five Key Questions for Mission Success

Borders are widely taken for granted, as artifacts of state sovereignty. This chapter challenges this assumption. It makes a case for five questions every tactician, operator, and strategist should be asking about borders and networks: Do borders matter? Does the structure of cross-border networks matter? Does it matter whether the cross-border network is organized hierarchically? Does the cross-border network's purpose matter? And does the commodity being trafficked matter? Posing these questions goes some distance toward recognizing the changing role and nature of borders in globalization and how to contain their exploitation for illicit purposes. By way of example, one would expect the border to have distinct implications for gun as opposed to drug trafficking networks. Drugs tend to be illegal, and so a more complex network is required to procure, manufacture, transport them, and to bring them to a widely dispersed market of individual purchasers. Guns, by contrast, can be easier to obtain to the point where they can be a legal community. At the same time, they tend to be sold in bulk primarily for their functional purpose, rather than to maximize profit.

One of the fundamental problems those tasked with countering illicit networks face is that, while intelligence often provides a good description of

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the flow of illicit goods, the organizational networks that facilitate these flows are poorly understood. This is not entirely surprising, since dark networks, by their very nature, are inherently difficult to study, and data collection is difficult and can, in many parts of the world, be lethal. In fact, in those places where borders and illicit networks are of greatest concern, data collection is the most difficult. So, this chapter draws instead on an emerging body of literature that strives to study borders, illicit networks, and their nexus, where data is available so as to build a body of knowledge that lends itself to application and verification elsewhere, that is, in much of the rest of the world where the phenomenon of illicit transborder networks is even more difficult to study and contain.

Border Effects

Space is a way of making sense of the world. Geographical assumptions naturalize the political segmentation of space. Borders have traditionally been understood "as constituting the physical and highly visible lines of separation between political, social and economic space."[1] But their actual significance is found in the bordering process that produces them and the institutions that manage them. These institutions "enable legitimation, signification and domination, create a system or order through which control can be exercised."[2] They politicize space and bring it under control. Quoting Painter: "The state is not only a set of institutions, but a set of understandings—stories and narratives which the state tells about itself and which make it make sense."[3] The emergence of the state has thus been contingent upon certain processes that have turned space into "state space."[4]

Border coefficients to which policy differentials across these sovereign jurisdictions give rise are considerable and their welfare implications are among the major puzzles in international economics.[5] Loesch, in *The Economics of Location*, reasoned that, according to neoclassic economics, borders created by these processes are costly because they impose barriers on free trade and the free flow of goods, labor, or skills.[6] Economic integration notwithstanding, borders continue to 'matter' because they delineate the boundaries of governments.[7] They also circumscribe social networks and human interactions.[8]

Deviant Globalization

Globalization has facilitated the emergence of transcontinental supply chains along with the expansion of illicit markets. Deviant globalization is the portion of the global economy that meets the demand for goods and services that are illegal or considered repugnant in one place by using a supply from elsewhere in the world where morals are different or law enforcement is less effective.[9] TOC has become a nefarious fixture of the global security environment. TOC's preponderance is the result of state institutions ill-suited to the challenges posed by economic and demographic inequalities, the rise of ethnic and sectarian violence, climate change, the volume of people moving across national boundaries as anything from tourists to refugees, and the growth of technology.[10]

An emerging literature posits a convergence between TOC and terrorism: terrorists are resorting to organized criminal operations to facilitate their activities, and organized crime is resorting to terrorist measures to support theirs.[11] The White House's 2011 SCTOC concludes that "criminal networks are not only expanding their operations, but they are also diversifying their activities. The result is a convergence of threats that have evolved to become more complex, volatile, and destabilizing."[12] Convergence has also improved groups' abilities to evade official countermeasures, overcome logistical challenges, identify and exploit weaknesses and opportunities in the state system, and attack that system.[13]

Terror networks are difficult to detect, and even more difficult to study accurately and comprehensively. Much of the information on individuals and their activities are either classified or unknown. Nonetheless, tracking how terrorists raise, move, store, and use money is fundamental to deter, detect, dismantle, and discourage terrorist networks. The trend has been away from studying terrorism only through the lens of individual or organizational analysis and toward the social dynamics of networks as a whole.[14] Networks make it possible for terrorist groups to overcome the inherent problems of mobilization and communication. Ergo, policymakers and security practitioners strive to know what is driving network creation, how networks operate, and how networks change over time. The analysis of longitudinal patterns of exchange between nodes is known as SNA.

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However, many real-world networks are constructed because of the accumulation of pairwise connections, each of which is made locally by the two individuals concerned and sometimes with an element of serendipity. The properties of such a network are emergent, but the resulting structure is also constrained by purpose and so can be revealing of 'what works.' If the network does not contain the required actors, or if they cannot communicate as required, then the network is unlikely to be effective.

Illicit Networks

Networks are the most important unit of analysis in understanding the formation and dynamics of illicit organizations today. There has been a move away from the lens of individual or organizational analysis to an attempt to study the social dynamics of networks as a whole.[15] Social networks make it possible for illicit groups to overcome the inherent problems of mobilization and communication between large numbers of people over distances. As Thorelli states, "Organizations exist due to economies of scale and specialization, and the ability to reduce transaction costs."[16] SNA, therefore, is the study of the individual members, represented by the nodes of the network, and the relationships between these members, represented by the links. The pattern of exchanges between nodes over time is the bedrock of network analysis.[17]

As a relational approach to social interactions, SNA has emerged in the literature as an important method of analyzing and disrupting illicit networks.[18] This has not always been the case; traditionally, illicit networks were believed to be centralized and operate like hierarchical corporations.[19] By mapping out the ties between the various nodes in the group as they are, rather than how they ought to be or are expected to be, SNA theory calls this view into question.[20] Applied to various groups across different parts of the world,[21] this approach makes it possible to determine the structure and function of both the network as a whole, and the role of each person in the group in relation to others.[22]

Network Structure and Centrality

One of the most salient aspects of illicit networks that can be illustrated through the use of SNA is their structure. Network structure may arise by design, as for example, when a business constructs an organizational chart to

manage coordination and governance. However, many real-world networks are constructed because of the accumulation of pairwise connections, each of which is made locally by the two individuals concerned and with an element of serendipity. The properties of such a network are emergent, but the resulting structure may also be constrained by purpose and so can be revealing of 'what works.' If the network does not contain the required actors, or if they cannot communicate as required, then the network is unlikely to be effective. Network structures matter because they dictate the flow of resources and information.

Many different types of networks—chain, hub (star), multi-player, all-channel (clique)—have been identified in the literature on illicit networks. Chain networks connect nodes in a simple path; nodes are connected only to a single neighbor in each direction, except for the initial and final nodes. Hub networks have a single central node (or perhaps a small central core of nodes) connected to other nodes in a start. The peripheral nodes have few, if any, connections to other nodes. On the one hand, the central node provides the only connection between the other nodes; therefore, it has a high level of control or leverage. On the other hand, the central node is a single point of failure, and so a vulnerability for the network. Multi-player networks feature multiple central nodes. This allows for several brokers within one network, increasing the complexity and size of multiplayer networks compared to chain or hub networks. All-channel networks are those in which most nodes are connected to most other nodes.

Hub networks contain nodes, or a small cluster of nodes, that sit at the center of three or more other nodes which themselves have few or no links. These centralized nodes are commonly referred to as hubs, and they occupy a position of influence and power because of their roles in information or materiel flow. The star network, in which a single node acts as a conduit to transmit resources and information to many other nodes, is perhaps the best-known example of a hub network. The other important structural position an actor can have in a social network is that of broker. Brokers enjoy a positional advantage within networks, as they bridge structural holes (unconnected groups of actors), and have greater access to information, opportunities, and skills. Brokers do not necessarily have to be connected to many others, as their importance derives from the fact that they bridge disconnected subparts of the network. The advantageous position of brokers in a network primarily derives from their access to diverse, non-redundant information.[23]

As Burt states, "people whose networks bridge the structural holes between groups have earlier access to a broader diversity of information and have experience in translating information across groups. This is the social capital of brokerage."[24]

Identifying hubs and brokers within a network requires the use of two key concepts: degree centrality and betweenness centrality. These two concepts, and their utility in determining prominent actors within a criminal network, were outlined by Morselli.[25] Degree centrality is the simple measurement of the volume of contacts each node possessed within a network. It is a measure of the number of an actor's immediate neighbors. Betweenness centrality is a measure of an actor's position within a network. Actors with a high betweenness measure frequently sit on the shortest path between two other actors.[26] This measure captures the extent to which certain nodes connect parts of the network that would otherwise have poorer contact, perhaps even no contact. These important individuals are brokers insofar as they control and mediate the flow of information and resources between unrelated parts of a network.[27] Specific characteristics of an individual's role in a network are associated with specific centrality measures, as depicted in the matrix in Table 1.

High degree centrality and low betweenness centrality *Well-informed member of a subgroup*	High degree centrality and high betweenness centrality *Subgroup leader*
Low in both degree and betweenness centrality *Foot soldier*	Low degree centrality and high betweenness centrality *Ideal broker*

Table 1. Centrality Matrix[28]

An individual with both high degree centrality and high betweenness centrality has the advantages of being able to control the flow of information between different subnetworks, and being able to reach a large number of individuals quickly. In social networks, the degree achievable by such a subgroup leader is limited by cognitive and span of control issues—in criminal and illicit networks, the individuals in these positions are aware of the vulnerability their high degree creates for disruption by their arrest or removal. Thus there are pressures to limit the degree of any one individual. On the other hand, for criminal and illicit social networks, lack of trust creates a countervailing pressure toward increased degree for network leaders

to reduce the threats of surprise leadership challenges or group splintering. In such an organization, therefore, an individual with both high degree centrality and high betweenness centrality is likely to be the leader, at least of a major subgroup.

However, Morselli's study of the Hell's Angels biker gang in the province of Quebec, Canada, discovered that the most advantageous position in a network is that of the 'ideal broker,' an individual with low degree centrality but high betweenness centrality measure. Such a broker is able to take strategic actions within the network, and to provide access to information and resources that others cannot reach, but does not necessarily have high volumes of communication or management with which to contend. Also, such individuals' lower degrees make them less visible.[29]

Resilience and Hierarchy

Networks provide resiliency for criminal operations. Duijn, Kahirin, and Sloot found that criminal networks can become even stronger after being targeted by law enforcement, meaning police action against criminal networks must be undertaken carefully.[30] There is a consistent tradeoff between security and efficiency in dark networks, and criminal organizations often opt for efficiency, given the limited time-to-task under which they operate.[31] While one often thinks of criminal networks as being rigid in structure, the extent to which they adapt is key to their survival.[32] In response to pressure from law enforcement, networks have been found to decentralize their structure, though this can often still leave them vulnerable.[33] Indeed, Bright and Delaney found that over time the centralities of nodes in a drug trafficking network changed as individuals changed roles to meet the evolving needs of the network.[34] As a result, networks are often much more decentralized than we might assume. Kenney found that the Colombian drug trade was based on a series of small fluid networks, rather than monolithic cartels.[35] The resilience of drug trafficking networks, namely their ability to adapt, can make them a challenging opponent for law enforcement. Indeed, hierarchy runs counter to the very characteristics of networks, which are heralded as "temporary, dynamic, emergent, adaptive, entrepreneurial and flexible structures," a "cutting-edge design."[36] Similarly, the rigid depiction of networks contrasts starkly with networks as an organizational structure that consists of "operatives [who] are highly adaptive, compartmentalised [and] mobile."[37]

Functional Differentiation

The nature and score of centrality measures is related to an illicit network's function—the structure of the network reflects the function that it serves.[38] Comparing al-Shabaab networks, fundraising networks exhibited a hub-type structure, whereas recruitment networks were of an all-channel type where most nodes are connected to most other nodes. Moreover, fundraising networks were transcontinental, that is, they crossed international borders. Therefore, fundraising networks are not impeded by the physical proximity of individuals in the network to one another but rely heavily on the actions of brokers.[39]

Commodities

In a study of gun-trafficking across the Canada-U.S. border, I have shown how commodity affects network structure; cross-border gun trafficking networks take the form of simple chain networks or slightly more advanced hub networks.[40] Given the availability of legal guns in the United States, it is understandable why chain networks are so prevalent; cross-border trafficking is as simple as crossing the border. Chain networks also appear to be easy to disrupt. Simply removing one actor breaks the chain. Actors in chain networks are relatively equal in terms of centrality. This results in an equal flow of information and resources through the sequential actors in a chain network; consequently, when one actor is compromised, so are the others. As a result, few members of chain cross-border gun trafficking networks escape arrest when their ring is discovered and disbanded by law enforcement.

By contrast, hub networks have greater capacity. Mules tend to be low in both degree and betweenness centralities, coordinated by a broker who bridges the gap between the supply of guns being delivered by the mules and the buyer who often takes the form of an organized crime syndicate. The bridge provided by these brokers establishes them as the crux of the network by virtue of their high betweenness centrality. Without their presence, the supply of guns can be easily cut off. The various gun trafficking networks observed met their ends when brokers were compromised and arrested. While targeting brokers appears to be an effective way of disrupting the cross-border gun trafficking networks that take the form of hub networks, the more challenging task is to ensure that other brokers do not take their place and networks spring up to fill the void.

In the same article I also hypothesize that transborder gun trafficking networks take simpler forms than transborder drug trafficking networks, as manifested in different network structure. For both kinds of networks, the actual cross-border piece is analogous: a number of parallel border-crossers and a single collector node on the other side. That there is only one collector node is likely a function of trust; if mules had more than one person to whom to report, it would become too easy for them to cross the border and go into business for themselves. It is surprising that collectors do not set up cutouts between themselves and the arriving mules. That would make them much harder to detect after interception.

There are two differences between the two kinds of networks. The first arises from the ease of obtaining the commodity. Since guns are readily available, no structure is needed to handle acquisition. In contrast, obtaining drugs requires access to a global pipeline, thus a much more sophisticated and extensive acquisition process, and a network to support it. The second difference is on the downstream side and derives from the quantum of the objects being transported. On the one hand, profit per gun is large, and collectors do not bother to establish distribution networks. This is their Achilles heel: they get ratted out by those to whom they sell. On the other hand, drugs are sold in much smaller quantities than guns, forcing collectors to build and work through distribution networks, which protect them from being ratted out because they are further from the people who get arrested.

Project Corral, a large anti-gang operation launched in 2009 by the Toronto police with the support of over 1,000 police officers of the police services of Ontario, illustrates the efficacy of network analysis to bring down transnational crime. Local gangs such as the Falstaff Crips and the Five Point Generals were closely linked to the Jamaican criminal organization known as the Shower Posse, which was supplying drugs to the gangs. Police in 19 jurisdictions seized cash, arms, drugs, and other contraband.[41]

In Project Corral, drug trafficking took the form of a complicated multiplayer network, with numerous influential actors. The gun trafficking network that was being operated by the same organization was different. Despite the capacity that the Shower Posse had to run a complex network, their transborder gun trafficking network was unsophisticated. The network hinged on only one or two key brokers to maintain a steady flow of weapons across the border.

Just as Morselli and Calderoni had found, the Shower Posse leadership seems to have reduced their degree centrality and likelihood of arrest by avoiding participation in street level crime.[42] Much like Bright and Delaney had found, members of the Shower Posse changed their role over time as the gang adapted to new circumstances.[43] This flexibility that has been studied in criminal networks in the past helps generate the hypothesis that the Shower Posse adopted a more complex network in response to the presence of borders.

As the Shower Posse grew outward from Jamaica, greater complexity was required in the structure of the network. As the scope of the operation grew, it was no longer possible to run a hub network based solely out of Tivoli Gardens in Kingston, Jamaica. Vivian Blake became a broker in his own right coordinating the New York chapter of the Shower Posse, and this model was repeated in the various countries into which the gang expanded. Moving illicit commodities across borders required the Shower Posse to have a presence on both sides. While the Shower Posse may have acted as a wholesaler of drugs to local street gangs, they only did so once they themselves had transported the drugs over the border to their local presence. Creating such a complex network was aided by the Jamaican diaspora in the United States and Canada, which eased the process of creating local Shower Posse chapters. The Shower Posse also took advantage of political corruption in Jamaica to ensure security for their network, allowing for a greater focus on the coordination necessary to traffic such a large quantity of illicit commodities across multiple borders.

With respect to gun trafficking networks, the transaction costs imposed by the border appear low compared to the vast markets of opportunity the border creates. The prerequisites are a ready supply of guns on one side of the border and someone who is willing to purchase guns and then bring them across the border. Single cases of gun trafficking, or simply individuals who do not require a larger network to profit from gun trafficking, are thus quite possible.

The ease with which individuals can cross and the large supply of legal guns in the United States seems to allow for the proliferation of many small, unsophisticated gun trafficking networks. That explains why even the gun trafficking networks with significant organized crime connections do not appear to differ substantially from those operated by a handful of individuals.

Conclusion

The Jamaican Shower Posse is emblematic of just how difficult it is to contain TOC networks. The sophistication of the Shower Posse's operations, combined with its political influence in its home country, made it tedious for authorities to eradicate. When the power of the state is weak, gangs can fill the void by performing state-like functions, which endears them to locals. Attempting to bring down such organizations through the prosecution of low- and mid-level dealers is ineffective, as the networks are too complex to be disrupted by the loss of one or two nodes with limited connections. How was the Shower Posse's kingpin Christopher "Dudus" Coke able to live out in the open and avoid capture for so long? The complexity of the Shower Posse's all-channel network shielded him from prosecution. And how did the Jamaican Shower Posse that Coke headed extend its reach all the way from Jamaica to the U.S. and Canada? Through a network that had to have sufficient players to procure ingredients, manufacture drugs, traffic them, and bring them to market in an environment where the commodity is illicit yet requires many small-scale buyers.

The nature of the network was a function of the borders the Shower Posse needed to cross in its activities. If network science can prove that transnational drug trafficking operations reinforce their resilience by making the structure of their networks more complex in response to the challenge posed by trafficking illicit commodities across national boundaries, then these networks can be better understood and targeted. Such a complex network was a response to the borders the Shower Posse needed to cross in its activities.

The Shower Posse used a complex multiplayer network backed by political connections in Jamaica to create a robust criminal enterprise. Criminal organizations like the Shower Posse are impervious to being targeted through street-level dealers. The complexity of the network means that it will continue to operate with little disruption, as those in charge and other dealers, mules, and distributors are still left intact. Nor does such an approach address the strong political connections that shield powerful gangs. To target criminal organizations that operate on the international scale of the Shower Posse effectively, gang leadership—those with high degree centrality but low between centrality—must be identified and targeted to disrupt the network and bring an end to its activity. Since clientèlism is corrosive to democracy, measures to curb political corruption that allows such gangs to flourish in

the host countries in which they are based will pay dividends by making organized crime networks less resilient.

The structure of networks matters to deterring, detecting, and disrupting them. Transnational networks are already known to pose a unique challenge due to the fact that they occupy multiple jurisdictions. If they have also adapted to the challenge posed by straddling borders by adopting more complex network structures, then the threat they pose to law enforcement is even greater. Removing only a few actors from the network will do little to compromise it, especially if they are low- or mid-level operatives. Rather, concentrated efforts to remove the gang's leadership across the network is necessary for its operation to be disrupted.

If the border imposed high marginal costs on trafficked goods, we would expect to see complex networks. This appears to be the case for drugs, but less so for guns. Trafficking in drugs requires volume to turn a profit; trafficking in guns does not. Ergo, policy differentials across borders and the markets of opportunity they create matter. A commodity that is legal on one side of the border but not the other is subject to trafficking for direct or indirect gain by means of relatively simple chain or hub networks. Complex multi-player networks appear necessary, by contrast, when a good is illegal on either side of the border and profit is a function of volume.

Mapping the structure of illicit networks is imperative to understanding how best to target and disrupt these networks. It is simple to compromise the actors in a chain network, and if a broker can then be located in a hub network, he or she can be targeted, and the whole network will be disrupted. This is especially true of brokers who traffic guns since they have a high degree centrality to match their high betweenness centrality; that is, while they bridge important structural gaps in networks, they are widely known throughout the network, as they are the key contact for the other actors. For instance, few gun traffickers are ideal brokers precisely because they are subject to being identified by so many other members of the network, which makes them an easy target for identification by law enforcement. The unsophisticated nature of these networks also helps to explain why they are plentiful. Provided that one knows how to tap into the market, they are simple to set up and simple to operate. For this reason, the real challenge of understanding cross-border trafficking networks is not how to target brokers and the networks they connect, but how to discourage people from becoming brokers and enabling networks to regenerate. For this reason, the

intelligence-led policing model focuses on disrupting and dismantling networks by concentrating scarce resources on brokers in the form of dynamic network analysis and target selection.

In conclusion, borders, networks, and their nexus matter to detecting, dismantling, and deterring organized illicit activity. Borders impose countervailing transaction costs but also open up markets of opportunity; dynamics which affect the formation and structure of transborder networks. While assumptions about hierarchical organizational structures abound, empirical evidence suggests that structures are both flatter and more autonomous than generally assumed. A network's function has a significant bearing on its structure; therefore, an understanding of its structure can provide insights into its purpose, and vice versa. Finally, the nature of the commodities that flow through a network affect both the structure of the network, as well as the way networks diffuse across boundaries. A more aggressive research agenda on border and networks should allow us to answer some of these questions with greater precision. Carefully analyzing the connection between borders and networks may be a simple, yet important contribution to mission success for those tasked with containing the genesis and diffusion of illicit transborder networks and their second-order effects.

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