Dark Networks, Transnational Crime and Security: The Critical Role of Brokers

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ABSTRACT

The growth of transnational organised crime has been widely perceived as a major national and international security threat. The growth has been facilitated by globalisation, in which people, money, information and goods flow more easily and rapidly across international borders. To take advantage of the illicit transnational business opportunities, crime groups have restructured from hierarchical organisations to more loosely structured configurations known as 'dark networks.' Crucial to the success of these networks are brokers, who enable exchanges between previously disconnected actors. In this paper, we present a new way in which to understand the role of the broker in illicit networks by distinguishing how brokers adopt different strategies that ultimately have a transactional or transformational impact on the networks they serve.

INTRODUCTION

In the late 20th century, warnings about organised crime becoming a serious challenge to national and international security and 'an imminent threat' began to emerge (Shelley 1995: 463; Williams 1994). As the 21st century got under way, there was growing recognition that transnational crime posed a major danger to nation-states and that efforts to combat this non-traditional security threat were not succeeding (National Security Council 2011; UNODC 2010). The United Nations Office on Drugs and Crime (2010: ii) stated that 'organized crime has diversified, gone global and reached macro-economic proportions: illicit goods are sourced from one continent, trafficked across another, and marketed in a third'. Such was the global concern on the growth of transnational crime that the UN Security Council had considered it on various occasions while the World Bank (2011) worried about its negative impact on development. The Organization for Economic Cooperation and Development (OECD) (Miraglia, Ochoa and Briscoe 2012: 4) noted the dangers organised crime posed to 'the stability of nation states, even strong states' let alone 'conflict-affected or otherwise weakened states'. The Global Initiative Against Transnational Crime has labelled organised crime as 'the most pernicious threat to human security, development and justice in the world today' (GITOC 2021: 4).

Globalisation has created criminal opportunities due to increases in the cross-border movement of people, goods and money, general economic growth and improved welfare, developments in information technology and global connectivity, and the ability of criminal entrepreneurs to identify lucrative opportunities in a globalising world (GITOC 2021; UNODC 2010; Viano 1999). Accompanying this growth in transnational crime has been structural change in the mode of criminal organisation to address the new opportunities and challenges. Traditionally hierarchical criminal organisations have transformed into networks than span the globe and involve a range of actors supplying particular services in the illicit chain (Kenney 2007; McCarthy-Jones, Doyle and Turner 2020; Morselli 2009). It is these networks that governments and security agencies must tackle in their efforts to fight transnational organised crime, but they have proved remarkably resilient and the criminals resourceful. This article is concerned with the evolving network structures, particularly the critical roles of brokers in the networks. Analysis of these phenomena suggests that law enforcement agencies can make major gains by identifying brokers and specifically targeting them, as brokers occupy strategic positions in networks and their removal can result in major network disruption.

The article commences with demonstrating the way in which the growth of transnational organised crime has been facilitated by changes in organisational structure, specifically the development of more loosely coupled networks. It then focuses on a category of key actors in these networks—brokers—and analyses the important strategic roles they occupy. Two types of brokers are identified. Illustration of these different broker types is provided through four short case studies. These are followed by a discussion of brokers in transnational criminal networks, leading to the observation that the targeting of brokers by law enforcement agencies will cause considerable disruption to the networks, which will assist in reducing the threat such networks pose to national security.

TRANSNATIONAL ORGANISED CRIME AND NETWORKS

Some analysts of transnational organised crime and terrorist groups have adopted the perspective and methodologies of Social Network Analysis (SNA) to map and understand the structures and processes that characterise these organisations (Carrington 2011; Jackson 2006; Jones et al. 2022; Morselli 2009). SNA focuses on relationships among social entities and seeks out regular patterns—structures—to identify interdependencies and the opportunities for and constraints on individual action (Scott 2012; Wasserman and Faust 1994). The connected network members are called nodes and are comprised of organisations and persons. The criminal networks examined in this article can be described as 'flows' involving transfers and exchanges between nodes (Marin and Wellman 2011). Their structures must be identified through empirical observation of the configurations of the participating nodes, the qualities of the connections among actors and the attributes of those actors (Carrington 2011).

Networks can be divided into two types—'bright' or overt and 'dark' or covert (Raab and Milward 2003: 430). Bright networks are public, out in the open and legal. By and large, their activities do not cause harm to society. By contrast, dark networks are 'mostly illegal', their activities 'contrary to the law' and inflict suffering on society (Raab and Milward 2003: 430). Transnational organised crime operates through dark networks. These networks come in various shapes and sizes with each configuration influenced by the purpose of the network, the nature of the participants and various other environmental factors such as the capacity of law enforcement agencies. Because of potential network diversity, Jackson (2006: 245) proposed that dark networks can be usefully viewed in terms of 'how much strategic, operational and tactical influence specific components of the organization have over others'. Three basic configurations can be identified—tightly coupled, coupled and loosely coupled, although it is useful to view them as a continuum. The tightly coupled network typifies the traditional, hierarchical criminal organisation with a clearly defined division of labour and authority structure (Cressey 1969; 1972). The coupled network has less rigid structural arrangements, greater flexibility and less directive communication, although there is still likely to be a network core. The loosely coupled network is comprised of separate entities, which are often geographically distant from each other and maintain autonomy, although they are interdependent for the pursuit of the overarching goal of maximising profit for network participants.

The globalisation of criminal networks has been accompanied by a shift in structure from hierarchical to much more loosely structured configurations (McCarthy-Jones, Doyle and Turner 2020; Morselli 2009). For an organised crime group to expand its activities by moving into new products and markets, the group often must go transnational. But, they generally do not have the capacity or knowledge to work across international borders and therefore must recruit additional foreign and previously unknown actors into the expanding network. As with globalising licit businesses, structure needs to follow strategy to facilitate achievement of the new goals (Chandler 1962). Thus, to pursue expansive transnational strategies, criminal enterprises have recognised the need to change to more loosely coupled structures. This reduces central control of the business by the instigating criminal group and makes it essential that the actors work together to facilitate flows across local, national and international borders. The decentralised nature of loosely couple transnational crime structures limits knowledge of the overall operations among nodes as there is a division of labour, with different nodes performing different tasks and often receiving and transmitting information only on a need-to-know basis.

An advantage of the loose network structure is that risks are shared among network participants in contrast to hierarchical crime organisations. However, there are challenges. Illicit networks have no recourse to the law to enforce contracts, as is the case with legal businesses. Illicit criminal networks must put greater faith in trust to ensure that participants perform as promised and required. This could be difficult where nodes are separated by considerable geographical distance, lack a history of cooperation and loyalty, and are not bound by social ties such as ethnicity, kinship and friendship. There is also the challenge of getting the appropriate balance between secrecy and efficiency. Criminal enterprises aim to operate under the radar of law enforcement, but nodes need to communicate to enable network functioning and to promote efficiency in operation. They cannot engage in open communication like legal enterprises and must also keep communication to a minimum, as there is the risk of detection. While greater frequency and content in communication could result in more informed plans and decisions and hence greater organisational efficiency, it would open more possibilities for network disruption by law enforcement agencies.

Transnational crime networks have repeatedly demonstrated structural resilience (Ayling 2009; Bouchard 2007; Catanese, De Meo and Fiumara 2016). That is, when network disruption occurs, such as by law enforcement activities, networks have shown their flexibility and adaptability to survive and reconfigure (Milward and Raab 2006). This survival is secured through either replacing nodes or reshaping the network. They have built in the capacity to absorb and tolerate inconveniences (Dujin, Kashirin and Sloot 2014). General research on networks has revealed that most are 'robust against random node removal but considerably less robust to targeted removal of the highest degree nodes' (Catanese, De Meo and Fiumara 2016). This coincides with Borgatti's (2003) observation that maximum disruption to criminal networks can be obtained through action against key nodes as that causes considerable damage to network communication. It is our contention that brokers in criminal networks comprise a category of

'highest degree nodes' and that targeting them is a productive strategy in transnational crime prevention.

BROKERS AND TRANSNATIONAL CRIME NETWORKS

Brokers, sometimes referred to as 'facilitators', 'middlemen', 'bridges' or 'boundary spanners', perform a vital role in bringing together individuals or groups that ordinarily function in discrete environments (Long, Cunningham and Braithwaite 2013). Similarly, Farah (2013: 75) has described these types of actors as 'fixers', 'super fixers' or 'shadow facilitators' whose activities augment the operations of illicit commodity chains on a global level. In network terms, the broker enables exchanges between previously disconnected actors. In line with this, Morselli (2009: 16) has depicted the role of the broker in criminal networks as being 'positioned between disconnected others in the network. These disconnected others may occupy different hierarchical roles within an organization, or they may be members of different organizations that come together for a given operation'. The broker creates and manages the link between these disconnected others.

One of the key assets that brokers provide to dark networks is transnational capabilities. They provide actors in dark networks with introductions to other groups that do not operate in close geographical proximity to each other. Leuprecht et al. (2016: 2) highlight the ability of such brokers to 'bridge parts of networks that would otherwise be disconnected'.' These connections facilitate illicit businesses to significantly expand the boundaries and scales of their operations into an array of foreign markets or even within a country. This is why brokers have come to be so crucial to networks seeking to expand their businesses. The role of brokers is not limited to simply acting as a negotiator and/or providing introductions. Brokers are capable of collecting, organising and disseminating intelligence that aids the network's business needs (McCarthy-Jones 2018; McCarthy-Jones, Doyle and Turner 2020). In some cases, illicit businesses that deal in trafficking in its various forms may draw on more than one broker to assist with the shipment and delivery of large consignments that must traverse vast distances and cross multiple borders in order to connect providers, buyers and sellers in different regions of the world. The use of multiple brokers allows the network to create buffers through the supply chain and therefore shares the risks and business costs among the nodes.

Brokers can be seen as identifying and accessing opportunities for a network where structural holes presently exist. These are 'discontinuities between exchange relations' that provide entrepreneurial opportunities for actors to broker the flow of information between people on opposite sides of the structural hole (Burt 1992; Burt, Janotta and Mahoney 1998). In this strategic location, the broker can influence or even control the nature of projects involving those on either side of the structural hole (Burt, Janotta and Mahoney 1998: 64). This means that individuals who possess connections to disparate groups are prime candidates for entrepreneurial activity that facilitates links or bridges between networks where there is a clear incentive to do so. In essence, brokers are 'service providers connecting criminals and organised criminal networks with different expertise, acting as intermediaries between the field operators, other brokers and high-level criminals' (EMCDDA, 2022: 1). The importance of brokers to criminal networks is related to the amount of, or degree that structural holes are present in the network. The greater the presence of structural holes and/or significance as obstacles to linkages between criminal actors, the greater the need for a broker or brokers. When illicit networks are unable to overcome coordination or cooperation challenges caused by structural holes through an in-house approach, brokers are used to remedy these deficiencies in the network. The transnational nature of many contemporary illicit business operations—such as drug trafficking, human trafficking and arms trafficking—means that the services provided by brokers are essential to the entire network's operation. Thus, Brokerage as a Service (BaaS) will be in high demand for the foreseeable future.

Analysis of brokers in transnational crime networks leads to distinguishing the different types of broker according to the nature of their participation and outcomes of their work. A useful way to differentiate the type of broker operating as part of or on behalf of a network is to examine the nature of their relationship to that network. We propose that this relationship can be understood in terms of being either more 'transactional' or more 'transformational' in relation to the network's operations and goals. Transactional brokers provide services to the

network in a functional but limited manner. The input of these brokers assists the network's operations by bringing together parts of the network by occupying structural gaps and thus acting as 'boundary spanners' (Aldrich and Herker 1977). Transactional brokers have resources such as knowledge, negotiating skills and organisational capabilities that enable them to fill the structural gaps and span boundaries linking network nodes. These brokers contact and liaise with other individuals or groups that hold expertise required by the network to undertake the network's operations. They may also supply intelligence to assist in the day-to-day management of activities oriented to the achievement of the network's goals. However, the exchanges and interactions between the transactional broker and other actors in the network do not result in an extension of the network's capabilities. This type of broker is more concerned with keeping the organisation going and task completion to achieve specified goals than with network innovation.

In contrast, transformational brokers act in ways that can bring about significant network changes, such as opening new markets and exploring new product opportunities. The transformational broker is not just able to overcome structural holes by meeting the logistical needs of the network, but rather, connects the network to resources, expertise and intelligence capable of changing the business model and geographical reach of the network. This occurs when the broker holds a particular set of attributes that can be used to overcome traditional obstacles, such as geographical boundaries and cultural differences. In these cases, the broker will usually possess personal and professional connections in multiple geographical spaces, can conduct business in more than one language and may even adopt strategies that leverage diasporic links in different parts of the globe. As with the transactional broker, the transformational broker is a boundary spanner. But there is a clear difference. The transformational broker is concerned with innovation and utilises entrepreneurial skills to develop the network rather than simply keeping the business running and maintaining profits (Ryan and O'Malley 2016; Hsu et al. 2007). The transformational broker transcends this to grow and change business through facilitating new courses of action. These brokers are particularly high-value assets to dark networks as they understand constantly shifting organisational environments and can identify and act upon business opportunities that can be of benefit to a transnational crime network.

The broker categories of transformational and transactional should not be confused with those used extensively in leadership literature (Burns 1978; Bass 1985). In this literature, the transformational leader brings about organisational change by developing followers to their full potential. He/she uses values and emotions to motivate the followers to pursue and achieve shared visions. Transactional leaders also focus on goal achievement, but they utilise exchanges with their followers to realise the goals; for example, improved terms and conditions of employment. By contrast, the division of brokers into transformational and transactional is concerned with innovation. Thus, the transformational broker in a criminal network achieves competitive advantage by the deployment of new technologies and new ways of doing things just as the innovator and entrepreneur do in the literature on legal business advises (Porter 1990; Tidd and Bessant 2009). Transactional brokers in criminal networks are primarily concerned with providing services to clients. They seek the successful completion of tasks set by the clients. However, as the brokers and networks operate in environments characterised by uncertainty and volatility, it is entirely possible that with changing circumstances new opportunities may arise or radical change may be necessary for survival. Then, the transactional broker may have to be transformational if they are to stay in business. If, by contrast, the organisational environment is experiencing a period of relative stability, the transformational broker may become more transactional in their dealings.

TRANSACTIONAL AND TRANSFORMATIONAL BROKERS: CASE STUDIES

The activities and network importance of transactional and transformational brokers are illustrated through short four case studies. The information in the case studies was drawn from open-source material in the form of media articles and online material published by governments and law enforcement agencies. The cases were selected due to their combined ability to act as exemplars of the activities and strategies used by transactional and transformation brokers in

diverse geographical spaces and moments in time. They all show the strategic importance of brokers in the formation and operation of transnational criminal networks.

LOS BROKERS (TRANSACTIONAL)

In 2021, a group comprised of 12 individuals were charged by Colombian authorities in relation to a large-scale money laundering operation estimated to be worth approximately US$100 million. The Colombian Attorney General's Office alleged that, over a two-year period, the group provided money-laundering services to criminal groups in Colombia and abroad (La Fiscalía General de la Nación 2021). The group, known as *Los Brokers*, were accused of providing criminal organisations with access and connections to a suite of business operators that, for a fee, would allow the use of their identities as well as access to their business and financial resources to facilitate money-laundering schemes (Sullivan 2021). These business operators acted as the seemingly legitimate receivers of large sums of money that were paid from a variety of front companies operating in Latin America. According to Sullivan (2021), the laundering process drew on 'a series of complicit accountants, administrators and bankers, who deposited the funds into company bank accounts and fabricated a paper trail, lending the transactions a façade of legitimacy and evading anti-money laundering controls'. For the scheme to work, large cash withdrawals from within Colombia were then funnelled to the brokers that operated as the link between the businesses and criminal organisations (Semana 2021).

The system employed by *Los Brokers* has been described as a 'prefabricated corruption network' (Sullivan 2021). It enabled criminal networks to subcontract a vital aspect of their illicit business models to professionals who specialised in creating the necessary paper trail to support the financial subterfuge. This prefabricated approach can also be observed in the next case, a more recent one involving a Chinese-Australian money laundering network.

XIN MONEY LAUNDERING NETWORK (TRANSACTIONAL)

In early 2023, the Australian Federal Police announced that they had dismantled a large-scale Chinese-Australian money laundering scheme that was suspected of facilitating the movement of approximately AU$10 billion offshore while simultaneously expanding a lucrative property portfolio in different areas of Sydney, one of the country's major cities. According to McKenzie (2023), the Australian police operation uncovered an extensive shadow-banking organisation whose clients stretched from Australia to Asia, the Caribbean, Switzerland, America and the United Arab Emirates, and which enabled the purchase of Australian real estate that could be worth billions of dollars.

Steven Xin was one of the individuals arrested during the AFP operation. Xin had previously been involved in the casino industry and was closely connected to the recently jailed Alvin Chau, the former chairman and founder of Suncity Group—which was once Macau's largest provider of gambling junkets (BBC 2023). When the illegal operations of Suncity were exposed and Xin himself became a target of Chinese authorities, he relocated to Australia and was eventually granted Australian citizenship. In Australia he began working on a new venture with Chinese businessman Zhouhua Ma. This venture developed into a complex operation that 'utilised casinos, crypto-currency and daigou [a form of cross-border exporting] businesses to ensure no actual funds crossed international borders, evading international law enforcement detection' (AFP 2023a). Through the provision of these particular services, Xin and Ma became 'the Australian-based bankers of choice' for transnational drug trafficking organisations and affluent Chinese citizens who wish to illegally move substantial parts of their wealth outside of mainland China (McKenzie 2023).

Another key aspect of the Xin organization's business model was the exploitation of gaps that currently exist in Australian anti-money laundering legislation. From 2006, attempts to reform current legislation, known as 'Tranche 2', have languished as a result of successive Australian governments remaining reticent to actively pursue the proposed reforms (Lynch 2022). The lack of political will to pursue this issue through legislative reform has created permissive conditions and considerable business opportunities for organised crime groups and brokers. For example, while banks and casinos in Australia are obliged to adhere to strict reporting responsibilities in relation to suspected money-laundering activity, accountants, real estate agents and lawyers are not legally bound to the same requirements. This is partly why the Xin syndicate

was so easily able to recruit individuals such Chang Hong Liu, a lawyer and migration agent, and Raymond Luo, an accountant, to its network (McKenzie 2023). According to the Australian Federal Police (AFP 2023a) the Xin network utilised a range of money laundering methods that ameliorated the need for conventional banking systems and allowed the network to offer their brokerage services to clients wishing to move funds without attracting the interest of law enforcement agencies.

ZHENLI YE GON (TRANSFORMATIONAL)

Zhenli Ye Gon is a Chinese national who migrated to Mexico in the late 1990s. Once in Mexico, Ye Gon explored business opportunities related to import/export markets in China and Mexico. This work eventually led to the creation of a profitable pharmaceutical wholesale company called Unimed Pharm Chem. Ye Gon was successful in obtaining a license from the Mexican government to begin importing chemicals, including pseudoephedrine, from China. His initial business success encouraged Ye Gon to set up a permanent base of operations in Mexico and, in 2002, he became a naturalised citizen of Mexico. Ye Gon continued expanding his business in Mexico until 2007 (Schectman and Rosenberg 2016; Singh 2021).

After receiving a tip-off from an informant in 2007, Mexican authorities raided the home of Ye Gon (Cawley 2014). During the raid, authorities found over US$200 million dollars hidden in the walls of his mansion in Mexico City. It was alleged that Ye Gon had used his company and strong connections in China to support the importation into Mexico of vast quantities of precursor chemicals that are used for the manufacture of narcotic and psychotropic drugs, such as pseudoephedrine, to Mexico. The amounts were well beyond what were considered to be the legitimate needs of his pharmaceutical company. The Attorney General's Office in Mexico alleged that Ye Gon was linked to a seizure of over 20 tonnes of pseudoephedrine that had been illegally transported through Michoacan state (Martínez 2022). The Mexican government further alleged that these additional shipments of chemicals were on-sold to large-scale crime organisations, such as the Sinaloa cartel, as well as to other smaller organised crime groups operating in Mexico to produce commercial quantities of methamphetamine and other synthetic drugs. McCarthy-Jones (2018: 347) has pointed out that 'brokers such as Ye Gon act as a conduit that bridges the space between criminal syndicates that do not possess natural connections due to geographical barriers'. These connections allowed groups such as the Sinaloa cartel to rapidly expand their business models, (previously based on cocaine, marijuana and brown heroin) and branch into the production and trafficking of synthetic drugs such as methylamphetamine and fentanyl. The result of the interactions demonstrates how actors such as Ye Gon can have a transformative impact on a network's operations enabling its expansion into new products and markets. While this type of brokerage enhances a network's strength and capabilities, it is also possible for a transformational broker to be the weak link in the network's operations if targeted correctly by law enforcement. This point will be demonstrated through the next case study of Hakan Ayik and his unintentional yet integral role in the success of Operation Ironside.

HAKAN AYIK

Hakan Ayik is a Turkish-Australian criminal with links to the Comanchero bikie gang in Australia, Asian triads and Latin American organised crime groups. Ayik was a close associate of former Comanchero bosses Mick Hawi and Steven Milenkovski, amongst other key figures in the Comanchero network in Australia (ABC 2010; McKenzie 2010). Ayik became one the key targets of Operation Hoffman (2008–2010), which used the combined skills and expertise of members of the Australian Crime Commission, NSW Police, the NSW Crime Commission, the Australian Federal Police (AFP) and AUSTRAC to investigate a number of criminal syndicates over a two-year period.

At some point in 2010, Hakan Ayik purchased a money-counting machine, which led authorities to decide to search Ayik's residence (McKenzie 2010). When a team of NSW Police officers entered Ayik's property, they were unaware of the counter-surveillance measures in place at the property. A motion sensor camera was activated that sent pictures from the camera to Ayik's mobile phone. At the time Ayik was at Sydney airport from where he fled Australia. After an arrest and subsequent escape in Cyprus, Hakan Ayik based himself in Turkey, where

he continued to coordinate large-scale shipments of narcotics such as methamphetamine and cocaine to Australia and other markets abroad until his arrest on 2 November 2023 (Cassidy 2023).

Professor David Bright has described Ayik as 'a broker between groups and we know individuals in those sorts of positions are very influential and very powerful, but they are also usually highly trusted because they're negotiating between groups who are in competition one way or another' (quoted in Pickering 2021: 1). Many years later, these qualities proved to be key to the AFP decision to introduce a Trojan horse tool into criminal networks through Ayik by leveraging his power and prestige as a trusted criminal broker. This was the beginning of Operation Ironside/ Trojan Shield, a joint AFP-FBI probe that sought to track and disrupt national and transnational criminal networks. In 2018, an encrypted communications system known as Phantom Secure was dismantled by the FBI. According to the AFP, at the time there had been approximately 14,000 Phantom Secure devices in use in Australia (AFP 2023b). This provided an opening for Australian law enforcement agencies to introduce a replacement product into the market with the potential to act as a Trojan horse. The product developed was an encrypted messaging application known as ANØM. While, the ANØM platform was managed by the FBI, the AFP developed a capability that enabled the access, decryption and analysis of communications of individuals using the ANØM application.

Ayik was directly targeted by undercover agents, who provided a device with the ANØM application. Ayik was assured that this new product could be used for encrypted conversations that would be completely untraceable. According to the AFP, the device resembled a normal mobile phone that was designed to hold the encrypted messaging application obscured behind a calculator application (AFP 2023b). Another aspect of the subterfuge used to convince Ayik of the platform's value was that ANØM offered a range of features such as self-expiring messages, the ability to take, pixelate and send photos to other users, the option of a 'push to talk' feature with voice alteration, and secure file storage. The expectation was that due to Ayik's extensive connections into a multitude of criminal networks, once introduced, the adoption and up-take of the platform would organically increase amongst organised crime groups—and this is what happened. Operation Ironside is seen as the AFP's most successful operation against organised crime. Ayik unwittingly used his power and prestige as a broker to operationalise one of the most successful campaigns against organised crime in the AFP's history. To date it has resulted in 390 individuals charged, the confiscation of over 6.5 tonnes of illicit drugs and the seizure of A$56.5 million of cash from criminals across Australia (AFP 2023b).

DISCUSSION

The growth of transnational organised crime and its recognition as a major security threat has drawn considerable analytic attention to the way in which those involved are organised. Like transnational businesses operating in 'light networks', those in 'dark networks' have increasingly moved to organising structures that are networks or systems that are more loosely coupled than earlier, more tightly coupled organisational forms, although parts of a network may retain tighter coupling to create hybrid structures. But, the rationale propelling both light and dark networks for the overall move towards looser coupling reveals common elements: to give flexibility, to enable access to new markets, to spread risks and to distribute costs among network partners. The structural reforms for both light and dark networks are invariably made to grow business and profits in line with their transnational strategies, and, at least for dark networks, to make them more resilient to the attentions of law enforcement agencies. The structures of the networks follow the business strategies to fit with the environments in which they operate.

For at least the illicit businesses that inhabit dark networks, it has become apparent that brokers have become important actors. They have sets of highly valued attributes that enable them to plug the structural holes that separate potential partners in illegal enterprises. Brokers can identify those potential partners, make the necessary introductions and facilitate the conduct of business between partners. In structural terms, they link previously disconnected nodes whose collaboration will enable illicit business success.

As we have demonstrated, the power of brokers derives from their knowledge and connections. They are boundary spanners. Their knowledge is of the capabilities, trustworthiness and inclinations of two or more actors who would benefit financially from being linked in a network. These other actors lack such knowledge about potential business partners such as who they are, how reliable they are or how they may be contacted to negotiate business dealings. Brokers form the critical nodes that span the boundaries of different organisations. They collect and process information and engage in multidirectional communication involving other nodes or potential nodes. To remain important network conduits, it is in the brokers' interest to maintain distance between the other nodes being connected as control of information and communication provides power to the broker and safeguards their personal financial interests.

Through the case studies presented we have demonstrated that while brokers in transnational crime networks share some features there are also some differences that has led us to distinguish between two types—transactional and transformational. Thus, transactional brokers *Los Brokers* and the Xin network focused on offering what we have called BaaS, that is, they provided money-laundering services using a range of actors and techniques. They did not engage in entrepreneurial activities. They were service deliverers. By contrast, Zhenli Ye Gon and Hakan Ayik created connections that facilitated changes in the business undertaken by the network or extended the network to increase the opportunities available to criminal enterprises. Ye Gon was able to exploit his legitimate pharmaceutical business to enable Mexican drug cartels to enter into new lines of business and to create market opportunities for Chinese-based producers of precursor chemicals to expand into new markets. Note that Ye Gon (and indeed the transactional Xin organisation) used their knowledge of different languages and contacts in geographically distant countries as highly valuable human and social capital for their business dealings. Returning to the two types of broker, it is acknowledged that boundaries between them may be blurred in reality and that the same broker could be operating both transactionally and transformationally with different clients. Thus, the two types of broker should be seen as ideal types each comprised of particular characteristics that an empirical example may possess to a greater of lesser degree.

Through structural analysis and the case studies, the importance of brokers in transnational crime networks have been presented. However, brokers can also be vulnerable points in networks. As they are boundary spanners, their capture and prosecution by law enforcement agencies can result in significant damage to network operations. To achieve success in their pursuits, the law enforcement agencies need to engage in systems thinking in which networks are conceived as complex wholes of related parts (Cabrera et al. 2008). Then they can conceptualise their strategies along the lines of the Chinese People's Liberation Army's (PLA) theory of and approach to warfare—systems confrontation and destruction (Engstrom 2018). Confrontation is seen as being between opposing systems. In the case of transnational crime this would be the dark networks of illicit business enterprises versus the light networks of law enforcement agencies. The latter should engage in system destruction that aims to paralyse and even destroy the critical functions of the dark networks. Law enforcement agencies should mount 'strikes that degrade or disrupt the flow of information' (Engstrom 2018: x). The reasoning behind the attack on the information system is that the functions that characterise an operating system are dependent on the flow of information through the 'operational architecture' (Engstrom 2018: xi). In the dark networks of transnational crime, brokers are key network nodes that keep information flowing and if they are removed this causes major problems for network operations. There is no single course of action recommended. Rather, there is a need for a 'flexible template...based on perceived needs and requirements of the anticipated campaign' (Engstom 2018: 16). Proof of the effectiveness of such a strategy has been demonstrated in the closing down of the brokers featured in the case studies. Their apprehension caused considerable disruption to the networks concerned by stopping the flow of information to nodes in those networks and paralysing their operations.

CONCLUSION

Transnational crime has grown into a multi-trillion-dollar enterprise that generates huge profits for its practitioners and untold human misery and exploitation for its victims (GFI 2017). Global Financial Integrity (GFI 2017: 93) argued that 'this global illicit economy is more than just one

network, one country, or one crime—it is an industry with a retail value of at least US$1.6 trillion to $2.2 trillion per annum'. Key to this growth has been the adoption of network forms of organization that link participants across the globe. In these dark networks brokers play key roles as boundary spanners who link different parts together. In some ways dark networks have taken their lead from light networks as many of the reasons for their establishment and features of their operations are similar. There are, of course, differences. Prime amongst these is that dark networks are engaged in illegal activities and thus try to conduct their business affairs out of the sight of the state and law enforcement agencies. But, as in all networks, somebody must make the connections between the component parts and/or those that perceive opportunities in joining the system. As has been shown, it is brokers who often play this crucial role. They provide the organisational glue and are thus extremely important players for the establishment, maintenance and expansion of networks. Their importance to network structures can also be a vulnerability for dark crime networks, as the targeting and elimination of brokers by law enforcement agencies can paralyse them and even lead to system destruction.

COMPETING INTERESTS

The authors have no competing interests to declare.

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REFERENCES

ABC (Australian Broadcasting Corporation). 2010. *Australian fugitive granted bail*. December 31, 2010. Available at https://www.abc.net.au/news/2010-12-31/australian-drug-fugitive-granted-bail/1890658.

AFP (Australian Federal Police). 2023a. *Property and cash restrained as alleged money laundering group charged*. February 2, 2023. Available at https://www.afp.gov.au/news-media/media-releases/property-and-cash-restrained-alleged-money-laundering-group-charged.

AFP (Australian Federal Police). 2023b. *Special operation ironside*. February 5, 2023. Available at https://online.afp.gov.au/ironside.

Aldrich, HE and **Herker, DB.** 1977. Boundary spanning roles and organization structure. *Academy of Management Review*, 2: 217–230. DOI: https://doi.org/10.5465/amr.1977.4409044

Ayling, J. 2009. Criminal organizations and resilience. *International Journal of Law Crime and Justice*, 37(4): 182–196. DOI: https://doi.org/10.1016/j.ijlcj.2009.10.003

Bass, BM. 1985. *Leadership and performance beyond expectation*. New York: Free Press.

BBC (British Broadcasting Corporation). 2023. *Alvin Chau: Macau Gambling Kingpin Jailed for 18 Years*. January 18, 2023. Available at https://www.bbc.com/news/world-asia-china-64314043.

Borgatti, SP. 2003. The key player problem. In: Breiger, R, Carley, K and Pattison, P (eds.), *Dynamic Social Network Modeling and Analysis: Workshop Summary and Papers*. Washington, DC: National Academies Press. pp. 241–252.

Bouchard, M. 2007. On the resilience of illegal drug markets. *Global Crime*, 8(4): 325–344. DOI: https://doi.org/10.1080/17440570701739702

Burns, JM. 1978. *Leadership*. NY: Harper & Row.

Burt, RS. 1992. *Structural Holes*. Cambridge: Harvard University Press. DOI: https://doi.org/10.4159/9780674029095

Burt, RS, Jannotta, JE and **Mahoney, JT.** 1998. Personality correlates of structural holes. *Social Networks*, 20(1): 63–87. DOI: https://doi.org/10.1016/S0378-8733(97)00005-1

Cabrera, D, Colosi, L and **Lobdell, C.** 2008. Systems thinking. *Evaluation Program Planning*, 31(3): 299–310. DOI: https://doi.org/10.1016/j.evalprogplan.2007.12.001

Carrington, PJ. 2011. Crime and social network analysis. In: Scott, J and Carrington, PJ (eds.), *SAGE Handbook of Social Network Analysis*. Thousand Oaks, CA: SAGE. pp. 236–255. DOI: https://doi.org/10.4135/9781446294413.n17

Cassidy, C. 2023. *Suspected Australian drug trafficker Hakan Ayik arrested in Turkey*. November 2, 2023. Available at https://www.theguardian.com/australia-news/2023/nov/02/suspected-australian-drug-trafficker-hakan-ayik-arrested-in-turkey.

Catanese, S, De Meo, P and **Fiumara, G.** 2016. Resilience in criminal networks. *Atti Della Accademia Pelotoritana del Pericolanti Classe di Scienze Fische, Matematiche e Naturali*, 94(2): A1.

Cawley, M. 2014. *Meth trafficker sentence highlights Asia ties to Mexico's Sinaloa Cartel*. InSight Crime, August, 4, 2014. Available at https://insightcrime.org/news/brief/meth-trafficker-sentence-asia-mexico-sinaloa-cartel/.

Chandler, AD. 1962. *Strategy and structure: Chapters in the history of the American Enterprise*. Cambridge, MA: The MIT Press.

Cressey, DR. 1969. *Theft of the nation: the structure and operations of organized crime in America*. New York: Harper and Row.

Cressey, DR. 1972. *Criminal organization: its elementary forms*. New York: Harper and Row.

Dujin, PA, Kashirin, V and **Sloot, PMA.** 2014. The relative ineffectiveness of criminal network disruption. *Scientific Reports*, 4(4238). DOI: https://doi.org/10.1038/srep04238

EMCDDA (European Monitoring Centre for Drugs and Drug Addiction). 2022. *Cocaine: increasingly attractive for a wider range of criminal networks.* May 6, 2022. Available at https://www.emcdda.europa.eu/publications/eu-drug-markets/cocaine/criminal-networks_en.

Engstrom, J. 2018. *Systems confrontation and system destruction warfare: How the Chinese People's Liberation Army seeks to wage modern warfare*. Santa Monica: Rand. DOI: https://doi.org/10.7249/RR1708

Farah, D. 2013. Fixers, super fixers and shadow facilitators: How networks connect. Convergence: Illicit networks and national security in the age of globalization. In: Miklaucic, M and Brewer, J (eds.), *Convergence: Illicit Networks and Security in the Age of Globalization*. Washington, DC: National Defense University Press. pp. 75–95.

GFI (Global Financial Integrity). 2017. Transnational crime and the developing world. Available at https://34n8bd.p3cdn1.secureserver.net/wpcontent/uploads/2017/03/Transnational_Crime-final.pdf.

GITOC (Global Initiative Against Transnational Organized Crime). 2021. *Global Organized Crime Index 2021*. Geneva: GITOC.

Hsu, S-H, Wang, Y-C and **Tzeng, S-F.** 2007. The source of innovation: boundary spanner. *Total Quality Business Excellence*, 18(10): 1133–1145. DOI: https://doi.org/10.1080/14783360701596274

Jackson, Brian. 2006. Groups, networks or movements: a command-and-control-driven approach to classifying terrorist organizations and its application to Al Qaeda. *Studies in Conflict and Terrorism*, 29(3): 241–262. DOI: https://doi.org/10.1080/10576100600564042

Jones, NP, Chindea, IA, Argomedo, DW and **Sullivan, JP.** 2022. A social network analysis of Mexico's dark network alliance structure. *Journal of Strategic Security*, 15(4): 76–105. DOI: https://doi.org/10.5038/1944-0472.15.4.2046

Kenney, M. 2007. *From Pablo to Osama: trafficking and terrorist networks, government bureaucracies, and competitive adaptation*. University Park, PA: Pennsylvania State University Press. DOI: https://doi.org/10.1515/9780271033167

La Fiscalía General de la Nación [Attorney General's Office]. 2021. Desarticulada presunta red ilegal conformada por contadores, administradores y otros profesionales que habría lavado más de 281 mil millones de pesos [Dismantled alleged illegal network made up of accountants, administrators and other professionals that would have laundered more than 281 billion pesos]. April 19 2021. Available at https://www.fiscalia.gov.co/colombia/lavado-de-activos/desarticulada-presunta-red-ilegal-conformada-por-contadores-administradores-y-otros-profesionales-que-habria-lavado-mas-de-281-mil-millones-de-pesos/.

Leuprecht, C, Aulthouse, A and **Walther, O.** 2016. The puzzling resilience of transnational organized criminal networks. *Police Practice and Research*, 17(4): 376–387. DOI: https://doi.org/10.1080/15614263.2016.1168600

Long, JC, Cunningham, C and **Braithwaite, J.** 2013. Bridges, brokers and boundary spanners in collaborative networks: a systematic review. *BMC Health Services Research*, 13(158): 1–13. DOI: https://doi.org/10.1186/1472-6963-13-158

Lynch, N. 2022. *The lucky laundry*. Sydney: HarperCollins.

Marin, A and **Wellman, B.** 2011. Social network analysis: an introduction. In: Scott, J and Carrington, PJ (eds.), *SAGE Handbook of Social Network Analysis*. Thousand Oaks, CA: SAGE. pp. 11–25. DOI: https://doi.org/10.4135/9781446294413.n2

Martínez, A. 2022. Tomoiyi Marx Yu, esposa de Zhenli Ye Gon, sale de prisión tras 15 años [Tomoiyi Marx Yu, wife of Zhenli Ye Gon, released from prison after 15 years]. *Milenio*, May 8, 2022. Available at https://www.milenio.com/politica/comunidad/tomoiyi-marx-yu-es-liberada-tras-15-anos-de-estar-en-la-carcel.

McCarthy-Jones, A. 2018. Brokering transnational networks: emerging connections between organised crime groups in the Pacific and Indian Oceans. *Journal of the Indian Ocean Region*, 14(3): 343–353. DOI: https://doi.org/10.1080/19480881.2018.1519057

McCarthy-Jones, A, Doyle, C and **Turner, M.** 2020. From hierarchies to networks: the organizational evolution of the international drug trade. *International Journal of Law, Crime and Justice*, 63: 100436. DOI: https://doi.org/10.1016/j.ijlcj.2020.100436

McKenzie, N. 2010. Guns and poses: Inside the drug lord's deadly world. Sydney Morning Herald, August 30, 2010. https://www.smh.com.au/national/guns-and-poses-inside-the-drug-lords-deadly-world-20100829-13xnt.html.

McKenzie, N. 2023. Property grab: AFP smashes alleged $10 billion Chinese money-laundering operation. Sydney Morning Herald, February 1, 2023. Available at https://www.smh.com.au/national/nsw/property-grab-afp-smashes-alleged-10-billion-chinese-money-laundering-operation-20230201-p5ch7k.html

Milward, HB and **Raab, J.** 2006. "Dark Networks as Organizational Problems: Elements of a Theory." *International Public Management Journal*, 9(3): 333–360. DOI: https://doi.org/10.1080/10967490600899747

Miraglia, P, Ochoa, R and **Briscoe, I.** 2012. *Transnational organised crime and fragile states*. OECD. Available at https://www.oecd.org/dac/accountable-effective-institutions/WP3%20Transnational%20organised%20crime.pdf

Morselli, C. 2009. *Inside criminal networks*. New York: Springer. DOI: https://doi.org/10.1007/978-0-387-09526-4

National Security Council. 2011. *Transnational organized crime: a growing threat to national and international security: executive summary*. Available at https://obamawhitehouse.archives.gov/administration/eop/nsc/transnational-crime/threat.

Pickering, M. 2021. *Why australia's most wanted man will NEVER hand himself in despite being warned he could be murdered in revenge for promoting the infamous AN0M encrypted app to some of the world's biggest crooks*. Daily Mail, June 12, 2021. Available at https://www.dailymail.co.uk/news/article-9670749/Why-Australias-wanted-man-NEVER-hand-in.html.

Porter, ME. 1990. *The competitive advantage of nations*. New York: Simon & Schuster. DOI: https://doi.org/10.1007/978-1-349-11336-1

Raab, J and **Milward, HB.** 2003. Dark networks as problems. *Journal of Public Administration Research and Theory*, 13(4): 413–439. DOI: https://doi.org/10.1093/jopart/mug029

Ryan, A and **O'Malley, L.** 2016. The role of the boundary spanner in bringing about innovation in cross-sector partnerships. *Scandinavian Journal of Management*, 32(1): 1–9. DOI: https://doi.org/10.1016/j.scaman.2015.09.002

Schectman, J and **Rosenberg, M.** 2016. *Exclusive: Chinese-Mexican man at center of $205 million seizure could be extradited to Mexico in days – lawyer*. Reuters, August 26, 2016. Available at https://www.reuters.com/article/us-usa-mexico-extradition-idUSKCN1102CC.

Scott, J. 2012. *What is social network analysis?* London: Bloomsbury Academic. DOI: https://doi.org/10.5040/9781849668187

Semana. 2021. *Estas son las lujosas propiedades de 'Los brokers', la red que lavaba dineros de la mafia* [These are the luxurious properties of 'The brokers', the network that laundered money from the mafia]. *Semana*, April 27, 2021. Available at https://www.semana.com/nacion/articulo/estas-son-las-lujosas-propiedades-de-los-brokers-la-red-que-lavaba-dineros-de-la-mafia/202107/.

Shelley, LI. 1995. Transnational organized crime: an imminent threat to the nation-state. *Journal of International Affairs*, 48(2): 463–489.

Singh, S. 2021. $200 million mystery: the weird case of Zhenli Ye Gon. Medium, September 18, 2021. Available at https://isoomeet.medium.com/200-million-mystery-the-weird-case-of-zhenli-ye-gon-adaa6f9872c7.

Sullivan, S. 2021. *One colombian gang laundered $100 million in a year*. InSight Crime, April 30, 2021. Available at https://insightcrime.org/news/colombian-brokers-offer-money-laundering-service/.

Tidd, J and **Bessant, J.** 2009. *Managing innovation: integrating technological, market and organizational change*, 4th edition. Chichester: John Wiley & Sons.

UNODC (United Nations Office of Drugs and Crime). 2010. *The globalization of Crime: A Transnational Organized Crime Threat Assessment*. Available at https://www.unodc.org/documents/data-and-analysis/tocta/Front_matters.pdf.

Viano, EC. (ed.) 1999. *Global Organized Crime and International Security*. London: Routledge.

Wasserman, S and **Faust, K.** 1994. *Social network analysis: methods and applications*. Cambridge: Cambridge University Press. DOI: https://doi.org/10.1017/CBO9780511815478

Williams, P. 1994. Transnational criminal organisations and international security. *Survival: Global Politics and Strategy*, 36(1): 96–113. DOI: https://doi.org/10.1080/00396339408442726

World Bank. 2011. *World Development Report 2011*. Washington, DC: World Bank.

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