Organized Crime Research Highlights

Using Social Network Analysis to Target Criminal Networks

The addition of attribute and link weights to social network data sets on criminal networks can indicate which members of the network are the most valuable for law enforcement targeting.

Social network analysis offers a potentially powerful tool for law enforcement to map the relationships between individual offenders within the same criminal organization or market, as well as between distinct criminal organizations. Such maps, or sociograms as they are called in the field of social network analysis, allow for both the visual representation of social relationships, as well as the possibility of determining mathematically who the key players within a network are.

Social network analysis is primarily concerned with the structural properties of groups and the combination of social network data, such as types of relationship (e.g., communication ties, obedience ties). Combining statistical data on the groups or individuals linked within the network can allow us to see not only who is important in a given network, but why they are important, and how important they are to the functioning of the network. This combination of techniques allows for a more fine-grained analysis of criminal networks.

In order to combine these two types of data, Schwartz and Rousselle propose a model for the weighting of binary networks. The model integrates weights for both the actors within the network and the ties that link them, where the weights assigned to actors are based upon relevant individual attributes. While the authors do not endorse any particular weighting scheme, as an exemplar they use the range of scores generated by the Sleipnir threat matrix commonly employed by Canadian law enforcement. In this case, the Sleipnir score for each individual within the

network is rescaled to a value between 0 and 1, and used to determine the weight of that individual's links to other actors.

The theoretical basis for this approach is provided by the concept of 'network capital' – that is, all those tangible and intangible resources possessed by actors in the network that can be made available to other actors with whom they share either a direct or indirect link. This network capital is calculated by what the authors refer to as a resource sharing weight, which is simply the percentage of available resources which the members of the network are willing to share.

When this approach is combined, as the authors suggest, with other recently developed social network

measures that allow the analyst to determine the key players in the network (e.g., Borgatti's degree fragmentation and degree reach measures), the result is a tool that can be used to find the optimal actors for targeting within a criminal network, which is often necessary to assist in directing law enforcement efforts where they will have the greatest affect. Unlike simple fragmentation measures, however, a weighted approach allows for the specific individual-level factors of network members to be taken into account.

One potential weakness of the model, as noted by the authors, is the calculation of resource sharing weights. Due to a lack of previous research in this area, the authors propose combining an iterative approach to the determination of these weights with a reliance on the expert opinion of intelligence analysts and investigators. While such an approach is no doubt useful in the absence of more rigorous methods and data, the authors' call for greater research in this area, specifically in the volume of reciprocity and resource sharing within criminal networks, could contribute greatly to the accuracy and reliability of the model.

Schwartz, Daniel and Tony Rousselle. (2009) "Using social network analysis to target criminal networks." *Trends in Organized Crime*, vol. 12 no. 2, 188-207.

Unexplained Wealth Laws in Australia

The potential ability of unexplained wealth laws to disrupt organized crime must be balanced against the rights of the individual and the broader community.

Recently, some Australian jurisdictions have created civil remedies for addressing unexplained wealth issues. Unexplained wealth laws place the onus of proof on the individual whose wealth is in dispute to demonstrate, on a balance of probabilities, that the wealth in question was acquired through legal means. These laws are aimed at persons who apparently live beyond their legitimate means of support.

Western Australia, the Northern Territory, and Queensland have all adopted unexplained wealth provisions. South Australia and the Commonwealth have drafted legislation expected to come into force, and New South Wales has also indicated its intention to introduce unexplained wealth laws. It is estimated that more than $40 million in alleged criminal assets has been seized in the Northern Territory and Western

Australia under unexplained wealth provisions since 2003.

The means by which law enforcement officials and prosecutors can obtain information about criminal assets varies slightly from jurisdiction to jurisdiction. In Western Australia and the Northern Territory, the Director of Public Prosecutions (DPP) can: apply to the courts for an order allowing them to conduct an examination of a suspect individual, which can require a person to provide the court with information and/or documents; obtain documents relating to assets or property by applying for a production order; and apply to the court for orders requiring a financial institution to monitor or suspend a person's account and provide that information to the police or DPP. In addition, the DPP or the police may require a financial institution to provide information about the transaction and/or assets of a particular person. Finally, the police can detain a person if they reasonably suspect that the person possesses property liable for forfeiture or documents that would identify or determine the value of a person's unexplained wealth.

The author posits that confiscation of criminal proceeds under unexplained wealth provisions are not always effective in dealing with persons who remain at arm's length from the commission of offences, particularly when used in isolation. Arguments in favour of unexplained wealth laws include: that they deter those who contemplate criminal activity by reducing the possibility of gaining or keeping a profit from that activity; that they prevent crime by diminishing the capacity of offenders to finance any future criminal activity that they might engage in; and that they remedy the unjust enrichment of criminals who profit at society's expense. Unexplained wealth laws target the benefits accumulated by the individuals of greatest concern to law enforcement.

On the other hand, unexplained wealth provisions can be considered highly intrusive.

Such laws can be viewed as being in conflict with civil rights and liberties, including the presumption of innocence and rights to privacy. These laws raise the risk of confiscating assets from innocent people, and persons who refuse to cooperate may face losing lawfully obtained property. Unexplained wealth laws carry with them the potential to do both great good and great harm.

Bartels, Lorana. (July 2010) "Unexplained wealth laws in Australia." Trends & issues in crime and criminal justice, no. 395, 1-6.

Criminal Trajectories in Organized Crime

Organized crime offenders generally start their criminal careers later in life than other offenders.

The concept of adult-onset offending has been largely neglected in research on criminal trajectories. There is an assumption within life-course criminology that adult offending requires childhood anti-social behaviour, thus many studies have focussed only on the relatively short time-span from childhood to early adulthood.

The findings of these studies tend to reinforce the assumption that there is a lack of evidence for adult-onset offending.

However, research on white-collar offenders suggests that these offenders differ significantly from the typical street offender and, as such, do not appear to fit into the typical explanations offered within life-course criminology.

This study expands upon the observation that white-collar offenders differ in age profile from typical offenders by examining what, if any, relationship existed between trajectories in organized crime and the types of criminal activities in which people engage. Taking data from the Dutch Organized Crime Monitor, 854 offenders were identified each of whom had a criterion case in organized crime and a complete criminal history accessible through judicial records.

The sample was analyzed using four different offender roles and three main areas of criminal activity. The offender roles were identified as leaders who fulfill an executive role, coordinators tasked with planning and management, lower-level suspects who perform concrete acts, and others (such as facilitators who are responsible for particular logistical or technical processes). The three different types of criminal activities that were identified were drug trafficking, organized fraud and other criminal activities (e.g., smuggling illegal immigrants, human trafficking, trafficking in other illegal goods, fraud).

The results of the study indicate the average offender was 38 years of age, with 68% of offenders found to be between 30 and 50 year old. Amongst the offenders, over half were lower-level suspects. The majority (67%) of the organized crime offenders in the sample were involved in drug trafficking activities.

Four trajectory groups were identified: early starters, persisters, adult-onset offenders and first offenders. While no clear relationship was found between prior offending and offender roles, the adult-onset offender group constituted the largest trajectory representing 40% of the sample. This finding stands in stark contrast to the classic age-crime curve of youthful on-set offending. This finding suggests that organized crime offenders clearly differ in their criminal trajectories. Older individuals may be better equipped to engage in organized crime due to their well-established social networks, acquired ability in dealing with logistical complexities, and better connection to profit generating criminal opportunities and transnational contacts.

While little research exists on adult-onset offending, this type of trajectory must not be considered a rare phenomenon and future research in the area could be particularly useful in designing prevention and intervention strategies for organized crime, while also assisting in the intelligence analysis involved with suppression efforts.

M. Vere van Koppen, Christianne J. de Poot, Edward R. Kleemans and Paul Nieuwbeerta. (2010). "Criminal trajectories in organized crime." British Journal of Criminology, vol. 50, no. 1, 102-123.

Mortgage Origination Fraud and the Global Economic Crisis

Mortgage fraud was a main catalyzing factor in the recent global economic crisis. Observations are offered on the commission of this white-collar crime and how to prevent it in the future.

Foreclosures in the subprime mortgage lending market were a major factor in precipitating the American banking credit and liquidity crisis, which triggered the current global economic crisis. In turn, the failure of the subprime mortgages was the result of endemic frauds perpetrated in the subprime mortgage market, which was concentrated amongst 15 lenders in California.

Through interviews with industry insiders and borrowers this study documents a culture of business and opportunity structures in the industry that support the commission of widespread frauds. In parts of the mortgage industry, up to 70% of all loans that defaulted included fraudulent misrepresentations on their

applications and between 1997 and 2005 fraudulent filings increased by 1,411%.

In the 1990s, there was a growth of the unregulated broker market and an extraordinary increase in real-estate values. The unregulated market also developed alternative loan products, such as no-documentation products, called "liar loans," which provided ample opportunity for fraud. The consistent increase in the real estate market essentially hid fraudulent practises and delayed the victimization of many borrowers until the dip in the California real-estate market of 2007 started a cascade of foreclosures.

Alongside the borrower, there are five key players involved with loan origination and funding: 1) broker; 2) lender; 3) appraiser; 4) escrow agents; and 5) title agents. All industry players involved in originating the loan are dependant upon each other for profitability; more loans of higher value means more profit for individual industry players.

In particular, those key industry players willing to "bend the rules" are often rewarded with business success

While "bending the rules" can also meet the borrower's objective of obtaining a loan, but can also lead to fiscal victimization through borrowers holding unaffordable mortgages under unfair terms.

A characteristic of much white-collar crime is the thin line between the commission of crimes (e.g., mortgage fraud) and risky or unethical practices (e.g., predatory lending). The study documents the neutralization techniques that allow individuals to rationalize their deviant acts while retaining a positive self-image and shows how they have become embedded in a business ethos that perceives "many acts of mortgage origination fraud as inseparable from conventional lending practises that are necessary in any "successful" legitimate subprime business" (p.601). This workplace culture of crime sees lenders (account managers and underwriters) coaching brokers directly on how to structure documentation for loans to get easy approval, while brokers compete for status within their firms at being the most skilled and "creative" at getting loans funded using whatever methods necessary.

The organized nature of the crime of fraudulent misrepresentations on loan applications was clear, since most frauds entailed the direct cooperation between a broker and another industry player, as well as the collusion of the individual borrowers and many managers in financial services companies.

The authors suggest preventative actions to address mortgage origination fraud, but do not offer intervention, suppression or deterrence strategies. Major reforms of financial policies and lending practices within the subprime mortgage industry are critical, including training to recognize and dissuade the potential for insider fraud, the tightening of loan qualification requirements, increasing government oversight and regulation, and raising the standards of underwriting.

Nguyen, Tomson and Henry Pontell. (2010) "Mortgage origination fraud and the global economic crisis: A criminological analysis." Criminology & Public Policy, vol. 9, no. 3, 591-612.

Gangs, Guns, and Delinquency: Does Organization Matter?

Even at low levels of organization, more group organization – and not necessarily gang membership – is associated with a higher likelihood of offending among individual group members.

Research has consistently demonstrated that gang members are often involved in more deliquent behaviour than their non-gang affiliated counterparts. What is it about gang membership that contributes to an individual's level of participation in criminal activity? This article demonstrates that the organizational complexity of a youth gang or deliquent group can impact on the level of involvement in criminal activity of its members.

To address the research question, a survey was administered to secondary school students in two municipalities in Quebec. Of the 1,166 students who responded, 523 reported that they had been involved in at least one type of deliquent behaviour[1] in the last year and as such were included in the analysis. The results of gang members, deliquent group members, and non-group members are compared.

Typical measures of organization focus on role differentiation, leadership, meetings, and the enforcement of rules and norms. For the purposes of this research, organization was categorized as a degree measured on an ordinal scale ranging from zero to seven. The organizational scale was constructed using positive responses to the presence of a group name,

group leader, hierarchy, meeting location, distinctive signs or codes, rules, initiation, specific territory, and defence of honour/reputation. Higher scores on the scale were considered to represent higher levels of organization in the group.

Delinquent group and gang members were similar with respect to age, sex, and socio-economic status.

When non-group members were compared to gang members, it was found that gang members were more likely to be male, and to come from a low-income family. Organization and drug use were the strongest predictors of deliquent activity in this analysis, and belonging to a deliquent group or gang was a predictor of involvment in drug production or trafficking.

Previous research indicates that gangs are not the highly complex hierarchal organizations depicted in popular media. Nonetheless, an increase in offending was found from non-group to group members, and then to gang members. Similarly, the use of cannabis and hard drugs increased from non-group to group members, and then to gang members. Indeed, gang members reported higher levels of all deliquent activity compared to their less organized counterparts.

Yet, interestingly, even at low levels of organization, more group organization was associated with a higher likelihood of offending among individual group members. The authors suggest that there is still something unqiue about gang membership that influences deliqency beyond the effect of the sophistication of the group, but that it is less important than organization generally. Level of organization was the most important factor associated with general deliquency, violence, and involvement in the drug supply, independent of gang membership.

These data should be interpreted with some caution: they are based on a small sample specific to a particular neighbourhood in Quebec. In addition, the study did not measure whether an increase in organization in a particular gang lead to increases in crime and deliquency within that gang, due to the cross-sectional nature of the data.

Bouchard, M. and Spindler, A. (2010) "Groups, gangs, and delinquency: Does organization matter?" Journal of Criminal Justice, no. 38, 911-933. [1] Delinquent activities included mischief, theft, fraud, assault, sex related offences, illegal gun use or possession, cannabis cultivation, cannabis dealing, hard drug dealing, or other delinquent behaviours.

The Traffic in Garbage and Hazardous Wastes: An Overview

The traffic in garbage and hazardous wastes in large, illicit transnational business that involves a wide array of criminals, including private entities, corrupt public officials, and organized crime groups

Over the last three decades, the proliferation of environmental regulations, coupled with rapidly increasing costs of legal disposal, have given rise to a thriving, international underground economy in the management of garbage and hazardous wastes, producing about $10-12 billion dollars annually, $1-2 billion of which goes to criminal organizations (e.g., Italian, Russian, and Yakuza groups). This illicit industry almost parallels the scale and profitability of the global drug trade, and its success is facilitated by a variety of legitimate sector actors such as corrupt waste producers, transport companies, storage firms, and public officials.

The most common form of mass illicit waste disposal for many developed countries is illegal export to the developing world (e.g., African, Carribean, and Pacific nations), which governments are paid a fee far lower than that for legal disposal, and which environments must bear the attendant damage. Such exports are facilitated by the ease with which hazardous materials are concealed, a prime example of which was the sale to Bangladesh in 1992 of a shipment of fertilizer that had been co-mingled with copper smelter dust by corrupt U.S. firms and individuals.

Organized crime groups are heavily involved in illicit hazardous waste disposal, particularly in the USA, Italy, and China. In the USA, this is typically accomplished by seizing control of existing labour unions in the sanitation sector, or opening private firms specializing in illegal disposal (e.g., mixing toxic chemicals with household garbage, combining waste with oil for sale as fuel, or simply pumping toxins out onto city streets and sewers). Striking figures have been released for Italy – in 1997, Italian authorities stated that 2000 illegal dump sites held 11 million metric tons of industrial and toxic waste. Moreover, a 2007 investigation by China's State Environmental Protection Agency revealed a yearly import of approximately 1.9 million tons of garbage from

the UK.

Smuggling radioactive waste and hazardous materials also poses significant social and environmental threats. For example, 1,340 trafficking incidents were documented by the International Atomic Energy Agency between 1993 and 2007. In the former Soviet Republics, a wide variety of organized crime groups (e.g., Russian "mafiyas", Italian, Serbian, and South African groups), as well as former KGB agents and Red Army soldiers, have used Germany as a conduit to transport nuclear materials to clients in Libya, Iraq, Algeria, and Pakistan. However, Russian customs officials believe that much of the illegally diverted nuclear material flows through purportedly legal channels, such as nuclear enterprises and import-export firms.

Substantial environmental damage is also caused by illicit crop cultivation and its by-products. For example, it is estimated that the Amazon and Orinoco rivers receive an annual 20 million liters of toxic chemicals used for cocaine production (e.g., ethyl, ether, acetone, and ammonia), and that 11 million hectares of tropical forests are cleared each year for growing coca bush, mainly in South American and Southeast Asia. Outdoor marijuana production in the U.S.A. results in the poisoning of national forests and parks with pesticides and herbicides.

Clandestine drug labs also produce toxic waste and carry with them a high risk of explosion.

Liddick maintains that key enforcement and regulatory measures (e.g., the Basel convention in 1992) have been largely unsuccessful in combating the global illicit waste trade, primarily because they do very little to reduce the enormous demand. Alternative measures range from simple, micro-level behaviour modification techniques (e.g., heavier taxes on consumers for plastic grocery bags combined with enhanced profits for "eco-bag" manufacturers) to major technological advances that take potential business away from illegal entrepreneurs (e.g., recycling of PVC materials by the VEKA and Solvay companies), thereby helping to mitigate the problem.

Liddick, D. (2010). The traffic in garbage and hazardous wastes: An overview. Trends in Organized Crime, 13(2-3), 134-146.

Perceived Effects of Precursor Laws on Domestic Meth-amphetamine Production

Precursor laws result in less local methamphetamine production, but have no effect on the amount of methamphetamine consumed domestically.

The most common business opportunity for organized crime is participation in illicit drug markets. In the 1970's methamphetamine ("meth") was recognized as a detrimental drug of abuse and was criminalized. In the 1990s, starting in Western North America, the popularity of meth consumption amongst several populations of illicit drug using populations increased, while organized criminals developed a number of novel methods of producing and distributing meth locally. A number of the meth production methods create highly toxic and hazardous waste, which can negatively impact community and environmental health, as well as threaten the health and safety of first responders (e.g., police and fire).

In response, in over 90% of American states, the sale and possession of chemicals used to produce meth ("precursors") were restricted by legislation and regulation. These laws are intended to be a means of curtailing the domestic manufacture of meth, thereby restricting supply and, eventually, reducing consumption. Similar precursor laws have been implemented in Canada.

In this study, Attorney Generals' Offices in all 50 U.S. states were surveyed on perceptions regarding the effect of precursor laws. This data was compared with data provided by the Drug Enforcement Administration on Methamphetamine Clandestine Laboratory seizures between 1999 and 2007.

The implementation of precursor laws has clearly resulted in a reduction in the number of domestic labs that produce meth. Approximately 80% of respondents felt that precursor laws had a positive effect on reducing meth production. The empirical data support this assertion, as clandestine lab incidents increased from 1999 to a high in 2003, but reduced to below 1999 levels by 2007, as precursor laws came into force. The report implies that remaining lab cases were of a smaller volume on average than previously, as volume production methods became

increasingly more difficult to accomplish without particular sources of precursors.

Although there have been declines in meth usage on some surveys regarding the use of illicit drugs, meth addiction rates have almost doubled at the same time as domestic production appears to have declined.

The authors assert that intelligence sources and the survey respondents indicate that now perhaps 78% of American demand for meth is being met by foreign sources of production. Foreign sources of supply mainly seem to be from Mexico, but more recently Canada has become a source country.

The production of meth for the export market in both Mexico and Canada is largely accomplished with precussors imported from India, China or Germany.

Wholesale and retail meth sales networks have subsequently shifted in the United States. "Rather than biker gangs and Neo-Nazis manufacturing and dealing" in meth at a local level, there has been a shift to more sophisticated transnational Mexican drug trafficking organizations meeting the demand for meth through alliances with a different network of American street gangs. The study did not identify the mechanics of a possible Canadian supply of meth to the U.S. market, nor did the study estimate the volume or value of the cross-border trade in meth to the United States from Canada.

Etter, Gregg and Clarinda Garrett. (Summer 2010) "The Perceived Effects of Precursor Laws on Domestic Methamphetamine Production." Journal of Gang Research, vol. 17, no. 4, 21-37.

For more information on organized crime research at Public Safety Canada, please contact the Organized Crime Research Unit at ocr-rco@ps-sp.gc.ca.