Organised Crime: A Chaotic Notion

Julie Beesley[1]

Abstract

Borrowed theories and principles from the physical sciences have enabled social scientists and criminologists to analyse well-worn theories and data from a new perspective. One such theory is chaos theory, a subset of the family of complexity theory, and an emerging perspective in postmodern criminology. Chaos theory is the science of non-linear and dynamic systems that appear random due to their complex behaviour, but in essence are deterministic and sensitive to initial conditions (popularly referred to as the butterfly effect). Chaos theory is best applied to systems that operate at local and global level, and that display signs of both order and disorder. Organised crime may be described as such a system. This paper explores the notion and attempts to analyse organised crime from a new perspective.

Introduction

Chaos theory remains a relatively new science in its own right (since the 1970s), and its application to the social sciences did not begin until the early 1990s (Williams and Arrigo 2002; Kiel and Elliott 1997), coinciding with the rise of postmodernist thought. According to Milovanovic (2006) postmodern theory 'privileges non-linear developments' and an 'orderly disorder', which are at the very core of chaos theory. Over the past 20 years, the popularity of chaos theory has waxed and waned, gaining momentum more recently with the emergence of the science of complexity theory (Mitchell 2009).

What is Chaos Theory?

Unlike the everyday word 'chaos', which means disorder, chaos theory is as much about order as it is about disorder—which is counter-intuitive and often misleading. A simple definition of chaos theory is the science of systems that appear disordered and random, due to their complex behaviours, but in essence are deterministic. This means that a system is predictable (Gleick 1987). However, making the prediction is not easy, as one of the basic principles of chaos theory is 'sensitive dependence on initial conditions'—otherwise known as the butterfly effect—which means that one small change to the system can lead to a dramatic change elsewhere (Gleick 1987; Smith 2007). Some of the key concepts to understand in chaos theory include the fact that order and disorder can coexist and that there is an intermingling between local and global stability. In addition, chaos theory is concerned with systems and these systems must be non-linear and dynamic, where dynamic simply means change over time (Williams and Arrigo 2002).

One way to describe chaos theory is to consider a marble within the confines of a bowl. In the absence of external forces (including gravity), the marble would spin around the bowl indefinitely without ever retracing the exact same path. The path would look random and disordered, but the overall shape of the system (the bowl) would remain ordered. This example best explains chaotic behaviour: within a defined shape (the bowl), stability exists, even though within the system there appears to be disorder (the marble) (Williams and Arrigo 2002:66–7; Young 1997).

The building blocks of chaos theory are described by a set of seven principles (Gleick 1987; Smith 2007). One of the key principles is the concept of attractors. An attractor is like a magnet, pulling the

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[1] Julie Beesley is a Doctoral Candidate, Criminology, Sydney Law School, University of Sydney—julie@beesley.com.

system towards it, and so it is a location to which a complex system tends to move. The attractor draws the behaviour of the system, thus producing an order within the disorder, and in so doing creating patterns and structures. It is these patterns and structures in states of disorder that give a complex system its stability. If one can identify attractors in a system, then one can also identify the vulnerability points of a system and hence the system's use in criminology (Milovanovic 2003:56; Williams and Arrigo 2002:65).

How has Chaos Theory been used in Criminology?

Williams and Arrigo (2002:3) suggest that chaos theory has been used to reconfigure our understanding of what is normal and what is not. Non-linear behaviour, which can sometimes be known as anomalies or noise in criminology, is normal for chaos theory. In addition, chaos theory looks at a system as a whole and not in parts. As Walters (1999:141–3) argues, it has been used in criminology to reconcile and integrate the classical–positivist view of free will and determinism and the micro–macro view of individuals versus wider influences.

In 1997, Young (1997:95) developed a five-step approach to apply chaos theory to criminology. The first step is to locate the attractors hidden in complex data sets, and the second is to determine how many attractors exist in the data set. The third step is to find the change points at which new attractors are produced—these are the vulnerabilities in a system, which are most useful to criminologists. Finally, the fourth and fifth steps respectively are to identify and determine the settings of parameters that drive the system for control and policy purposes.

Step one in Young's approach proves to be the real challenge in criminology; that is, obtaining available and meaningful time–series data to which to apply the mathematics or concepts of chaos theory. Kiel and Elliott (1997) have been pivotal in applying the mathematics of chaos to the social world, which has provided empirical criminologists with interesting and novel insights into the behaviour of social systems. Putting the mathematics aside, chaos theory may still be applied conceptually as demonstrated by Walters (1999:148).

In terms of attractors, Young argues that there are four in society: social, economic, physical and moral power. Social power arises from social relationships, be it family, friends, colleagues, church, recreation or the community. Economic power arises from one's income and can be used to shape the behaviour of others. Physical power arises from the use or threat of violence, and moral power arises from shared values, such as religion or professional ethics. Young suggests that the life of any given individual or group can be mapped to each of these attractors and that each form of crime entails some combination of the four. In organised crime, Young (1997:88) argues that economic power is the key attractor.

How Well do we Understand Organised Crime?

From both a legal perspective and a criminology perspective, there is no universal agreement on how to define organised crime—this view is supported by a number of key authors such as Paoli and Fijnaut (2004), Levi and Maguire (2004), von Lampe (1999), and van Duyne and van Dijck (2007). Despite the difficulty, a number of academics and organisations have attempted to define organised crime by identifying a set of common characteristics. One of the most comprehensive sets has been developed by Canada's law enforcement agency, as highlighted by Richards (1999:4). Given the difficulties in defining organised crime, it is not surprising to note the challenges presented in theorising organised crime.

As argued by von Lampe (1999), 'there is no comprehensive theory that can reconcile the confusing and at times conflicting understanding of the term organised crime'. Despite this, over the past 30 years, a number of models have emerged. Most of these models have been categorised by Albanese (1989) as hierarchical, patron–client and enterprise, and more recently as social and environmental.

In 2003, von Lampe (2003:6) argued that any meaningful model of organised crime should include six basic elements—three core elements, being actors, activities and structures, and three environmental elements, society, government and the media. Von Lampe argued that there is no organised crime without organised criminals, and these criminals are organised, in part, due to their structures and environment.

Another way to look at organised crime is by considering the tasks that need to be performed to commit it. In 2007, Levi (2007:795) came up with a six-step procedural approach. The first step is to obtain finance for crime; the second, to find people willing and technically/socially competent to commit crimes; the third, to obtain equipment and transportation; the fourth, to convert, where necessary, products of crime into money or other useable assets; the fifth, to find people and places willing to store proceeds (and perhaps transmit and conceal their origins); and finally the sixth, to neutralise law enforcement by technical skill, corruption and/or legal arbitrage, using legal obstacles to enforcement operations and prosecutions, which vary between states.

In summary, as Levi and Maguire (2004:397) point out, 'relative to the confident claims that are made about organised crime, little is known about its operation in practice', which is why we are still struggling to understand and combat it.

Why Apply Chaos Theory to Organised Crime?

As White and Haines (2000:13) state, the 'different levels of analysis apparent in criminology are also partly a reflection of the diverse disciplines that have contributed to the study of crime' and the 'multidisciplinary nature of criminology'. Without any depth of analysis, there are many common features that may be identified across the various applications of criminology by looking for notions of chaos theory in the language of organised crime, hence revealing the potential of chaos theory for analysing this type of crime. For example:

- The concept of an orderly disorder; as pointed out by van Duyne and van Dijck (2007:101), organised crime is 'plagued by much disorganisation'.

- The concept of locality; as argued by Findlay (2008:68), organised crime 'requires the comparative analysis from the local to the global if the complex nature of criminal enterprise is to be understood at all the critical phases of its organisations'.

- The concept of non-linearity; as highlighted by Turner (1991, cited in von Lampe 2003:4), non-linearity is the best analytical model of organised crime;

- The concept of dynamic; as highlighted by Levi (2007:795), organised crime evolves as offenders adapt or fail to adapt to their changing environment.

- Finally, the key basic principle of attractors; as highlighted by Sheptycki (2008:24), organised crime thrives at the nexus of licit and illicit markets.

How can Chaos Theory be applied to Organised Crime?

To date, existing research in the application of chaos theory to organised crime appears sparse and superficial at best, with only a few direct and indirect references such as Young (1997:90) and Milovanovic (2003:71).

To build upon this research, the author is creating a new framework and methical approach to allow for the further development and understanding of chaos theory as it applies to the study of organised crime. As a starting point, Young's (1997:95) five-step approach is being applied. However, a framework is needed to employ Young's methodology. To date, a preliminary framework (Beesley 2010) has been developed using the following considerations.

First, the components of the framework to apply Young's five steps need to be taken into account; these need to be dynamic and address complexity and multi-dimensionality. There are two models being considered: Levi's and von Lampe's. Levi's six procedural steps are dynamic. Von Lampe's six

basic elements consider the multi-dimensionality of organised crime and each play a role in Levi's six steps. For example, taking Levi's first step—'to obtain finance for crime'—you will need actors to obtain this finance, and possibly a criminal activity such as kidnapping or theft. Furthermore, this initial step may depend on existing structures and relationships in place. Also, from an environmental perspective, society, government and the media may all play a role, at any given time, in how an organised crime group operates. For example, some groups will exploit the lack of control and surveillance in countries such as Colombia to continue their drug trade. As Crawford (2002:27–8) points out, there is a 'profound relationship between globalised conditions and local circumstances'.

Next, the variables and attributes of organised crime need to be considered. As Maxfield and Babbie (2005:18) point out, 'theories describe the relationship that might logically be expected among variables'. In chaos-informed organised crime, these relationships will be complex and non-linear. As noted earlier, the characteristics of organised crime provide a useful definition. In this framework, Canada's law enforcement agency set of 14 characteristics have been used, each of which link to Levi's and von Lampe's steps. These 14 characteristics are: corruption, infiltration, monopoly, sophistication, diversity, mobility, subversion, insulation, motivation, continuity, bonding, history, violence and discipline (Richards 1999:4). Each of these characteristics may be mapped to a type of attractor (Beesley 2010:352)—as identified by year, the economic attractor is the key influencer.

Finally, the data that organised crime analysis may produce needs to be considered. In most cases, this will be narrative rather than numeric information. A useful way to organise such data is by applying Madsen's (2007:11) 'packets of information' concept. For example, Madsen analyses a terrorist case by breaking up the information available into packets —one such packet conveys unusual features for a person born in Syria, such as pale skin and red hair, and would facilitate observation.

What Does the Framework Look Like?

Figure 1 below depicts the three-dimensional framework, where the x-axis shows Levi's procedural steps, the y-axis shows von Lampe's basic elements and the z-axis uses the 14 characteristics of organised crime mapped to Young's attractors. The 'packets of information' concept is used in determining how many attractors exist in the data set. An example of an attractor impacting the behaviour of the data set would be where circumstances allow an individual or organisation to fluctuate between the licit and illicit worlds—this cross-over between the licit and illicit would represent a change point at which new attractors are produced. An example of a change point would be a slight modification in a piece of legislation, such as cross-border controls, to change the behaviour of organised crime groups.

Figure 1: Framework—Applying Chaos Theory to Organised Crime

3D Framework	Basic Components of Organised Crime von Lampe's basic elements (y-axis)
Chronology of Organised Crime Levi's procedural steps (x-axis)	**Attractors within the data set** = 14 characteristics (z-axis) = packets of information analysis

What does an Illustrative Case Example Look Like?

Figure 2 below depicts the starting point of an analysis of an organised crime case to demonstrate how the framework and analysis can be applied. The case is transnational, comprising at least a UK and German component. The original source of the case facts is the research of the European Falcone program, as referred to by Levi and Maguire (2004:397). In this example, the overarching criminal activity is car theft.

Figure 2: Illustrative Partial Analysis of an Organised Crime Case

Packet of information	Characteristic	Attractor
1. UK Forgers Corrupt, committed forgery in the UK (counterfeited UK passports), not arrested, contact with UK couriers, ability to counterfeit documents	**Corruption Sophistication**	**Economic**
2. UK couriers 3. UK ferry company 4. UK shipping clerk 5. UK shipping company 6. UK container company 7. UK truck driver 8. German car rental company 9. German drivers 10. German fixers 11. German fixer drivers 12. German ferry company		

The starting point is to analyse the facts of the case under each of the six elements of von Lampe's basic components—that is, actors, activities and so forth. Figure 2 depicts the starting analysis for actors. As seen in Figure 2, there are 12 categories of actors arising out of the case analysis of the facts and the example presented is the UK forgers. Here, the facts of the case were analysed to present all information relating to the UK forgers as an actor in one parcel. Next, the packet of information was mapped to the characteristics and attractors of organised crime using Young's conceptual approach. The next steps would be to parcel up all the facts of the organised crime case under each component of von Lampe's framework, and each of Levi's six procedural steps. Eventually, one would have a multi-dimensional matrix of information to identify and determine the number of attractors and then eventually the change points or tipping points that impact on criminal motivation and opportunities in the organised

crime group. For example, the current life circumstances of the criminal actors and the environment in which they live in, which enables them to offend; the level of security and monitoring of imports and exports at the UK and German borders, including relevant European Union legislation and transnational agreements at the time of the case, which affects criminal opportunities and ease of activities,; and any relevant media 'noise' during the period, such as around cross-border car theft and identity crime.

Conclusion

In summary, this paper explores how chaos theory may be used to analyse organised crime at multi-dimensional and complex levels. It is noted that the application of chaos theory may be both conceptual and mathematical, and that further research by the author will explore both these avenues. In addition, the research is being developed to apply and test the suggested framework to appropriate and suitable cases of organised crime. With this further research, the application of chaos theory to organised crime may prove to be successful and may lead to a new and perhaps better way of understanding organised crime and ways of preventing it.

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