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Criminal networks: actors, mechanisms, and structures

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1. Introduction

The term organized crime comprises a considerably broad category of criminal activities from trafficking and smuggling of illegal commodities such as drugs or weapons, corruption, mafias to all conceivable ideological and religious varieties of terrorism (cf. Abadinsky, 2010; Paoli, 2014; van Dijk & Spapens, 2013; von Lampe, 2016). Each of these criminal activities is considered to be a serious security threat for society. That is the reason why governments all over the world devote substantial effort and resources towards combatting organized crime. It is not surprising that such phenomena also raised scholarly attention, be it as a way to help fight organized crime, to critically evaluate law enforcement approaches, or to analytically deepen scientific knowledge about organized crime. In fact, the interest in organized crime from policy makers, law enforcement agents, and academic researchers led to a growth of the research yielding a multitude of conceptualizations and definitions¹ of organized crime (von Lampe, 2016). Here, I define organized crime in accordance with the United Nations as a crime that involves three or more people who come together in committing criminal offenses over a sustained period of time (cf. Fielding, 2016). The choice of this definition is pragmatic – it is broad and allows to study various activities and groups². Also, this definition makes no a priori assumption about the structure and organization of organized crime, allowing its empirical investigation instead.

One of the key questions in research concerning organized crime and related phenomena is quite emblematic – since the term is organized crime, how is it *actually* organized (von Lampe, 2009)? Criminologists have theorized numerous models of organized crime in attempts to answer this question (Kleemans, 2014; Le, 2012). A bureaucratic model of organized crime (Cressey, 1969) assumes that organized criminal groups are organized much like their legal counterpart, such as armies or corporations, in rigid hierarchical structures overseen by powerful actors at their top. Although the bureaucratic model gained noticeable attention especially in popular culture, its scientific shortcomings in explaining structures of organized crime led criminologists to formulate alternative theoretical models (von Lampe, 2009). Some

¹ The website of Klaus von Lampe (2019) lists over two hundreds of available definitions of organized crime based on different jurisdictions or scientific approaches.

² This definition allows to include terrorist groups as well, which I in accordance with some other researchers conceive of as criminal groups different, but principally comparable to other criminal groups (cf. Morselli, Giguère, & Petit, 2007; van Dijk & Spapens, 2013; Wikström & Bouhana, 2017).

of these alternatives were based on accentuating ethnicity-based relations among criminals, or viewing organized crime through an economic lens as a market governed by illicit supply and demand (Kleemans, 2014). What all such approaches have in common is that they assume some sort of structure (e.g., hierarchy or market) rather than empirically describing it (Morselli, 2009).

In response to some of the limitations of earlier theoretical models, a more recent proposition is that organized crime can best be described as a network. The term network has been used with two rather different meanings. On the one hand, organized crime has been thought to have adapted to the new social and economic circumstances related to globalization by adopting network structure as a new mode of organization. In this view, networks are supposed to be a new mode of organization which is flexible, adaptable, resilient, and polycentric, giving criminals an advantage over law enforcement (Campana, 2016; Le, 2012; van Dijk & Spapens, 2013). On the other hand, the concept of network has been used as an instrument for studying organized crime from the perspective of social network analysis (SNA; Campana, 2016; Carrington, 2011). This instrumentalist approach makes no assumption about the properties of networks other than that they are built from human relations and interactions (Carrington, 2011; McIlwain, 1999; von Lampe, 2009). Additionally, mapping relations and interactions among criminals allows empirical analysis of these networks given suitable data.

SNA has been employed in recent years in research of a vast range of types of organized crime ranging from gangs, smuggling and trafficking of illegal commodities to terrorism (Cunningham, Everton, & Murphy, 2016; Gerdes, 2015; Morselli, 2009, 2014a). However, further development of criminal network analysis faces three challenges (Morselli, 2014b) – formulating adequate theoretical explanations, application of appropriate methods, and collection of valid data. By analysing particular cases and answering particular research questions, I aim to address these three challenges in this dissertation. In doing so, I aim to contribute to answering the principal overarching question - how is organized crime in fact organized.

1.1. Overview

In chapter 2, I follow this brief introductory chapter by introducing the most important concepts and methods from SNA and reviewing their application in the study of criminal networks. First,

basic terms such as network, nodes, and ties are defined. What sets SNA apart from more metaphorical approaches to the study of organized crime is a clear definition of the concepts it uses. Second, in chapter 2 I define basic descriptive measures such as centrality indices, whole network measures, and subgroup detection methods. Third, the introduction of basic methods and measures is followed by an introduction of more complex statistical models for social network and their use in criminal networks research. At the end of the second chapter, three challenges in criminal networks research are discussed, namely building theory, collecting data, and applying appropriate methods.

Chapter 3 is a case study of a Czech political corruption scandal known as the Rath affair. Because corruption networks have been relatively understudied, this chapter first argues how political corruption can be seen as organized crime and analysed from a network perspective. The aim of the analysis is to answer three interrelated research questions. The first question is whether the network is structured as a core-periphery network, as there are theoretical reasons to expect core-periphery structures in corruption networks. Second, a framework for considering multiple different types of ties (i.e., pre-existing ties, collaboration, and resource transfer) is introduced and subsequently the role these ties play in the structure of the networks is investigated. Third, the most central individuals are identified with respect to their positions within the network structure.

Chapter 4 is another case study from the Czech Republic. This particular case is known as the methanol affair and it is a case of manufacturing and distribution of illegal and poisonous alcoholic beverages. The study aims at explaining the structure of the distribution network by combining a theoretical framework of analytical sociology with statistical models for network data. First, the structure of the network is described in terms of the efficiency of the flows of the beverages in the network. Second, hypotheses about how actors may tend to pattern their ties are derived from a theory of action and, subsequently, tested with an exponential random graph model.

The goal of chapter 5 is to test a well-established theory about the structure of criminal networks called the efficiency/security trade-off. This theory postulates differences between structures of profit-driven and ideology-driven criminal networks. Whereas profit-driven networks are supposed to have efficient structures, ideology-driven network are supposed to have secure structures. The main argument of the chapter is that whereas the theory is formulated at the analytical level of networks, it should also account for actor-level mechanisms, as actors are the locus of intentionality, but results of their actions may not always line up with their

intentions. In order to test the theory, eleven profit-driven networks are compared to nine ideology-driven networks in terms of their structures. Furthermore, implications of the theory for tendencies of actors are explored using exponential random graph models.

In chapter 6, I investigate the dynamics of criminal networks under disruption in two cases of Dutch jihadi terrorist networks. The aim of this study is to bridge the gap between studies that assess disruption strategies by law enforcement agencies for criminal networks on the one hand and studies mapping the evolution of criminal networks over time on the other hand. The effect of disruption can be traced at the level of networks, where structural properties of a given network change after disruption, and at the actor level, where actors change their tendencies to form ties in response to network disruption. This change may be explained by forming ties to either enhance trust among actors or reduce risk of detection from outside. In order to analyse the change at network level, various whole network measures are used together with measures for change, whereas the effect of different mechanisms is tested with stochastic actor-oriented models.

The last chapter is a methodological elaboration on one of the biggest challenges in the research on criminal networks – data collection. In this chapter, I advocate a more systematic and transparent approach to collecting data on criminal networks. Six aspects of covert network data are identified – nodes, ties, attributes, levels, dynamics, and context – and challenges as well as opportunities related to each of the six aspects are discussed together with the problems of secondary and missing data. Checklists and graph databases are proposed as potential solutions to enhance clarity and a systematic approach towards data collection.