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Outlaw Gangs: Networks or Organisations?

The objective of this paper is the investigation of how the activity of organising is related to the structural characteristics of organisations in organised crime. This refers to the relation between structure and interaction. The focus of our research is how outlaw gangs are placed on a scale between permeable networks and monolithic crime syndicates. For this purpose, the communication network of an outlaw gang has been analysed, based on wiretapping from police investigations. The indicators of individual actors, such as centrality measures as well as the characteristics of the overall network, e.g. clusters, have been analysed and the division of labour has been investigated. The results of the analysis have been compared with the official picture of the gang, which outlines an alleged task delegation and a strict formal hierarchy. While the formal structure is partly enacted in communicative activities, there are also considerable deviations. Role differentiation in the division of labour could be found; however, the group turned out to be far less differentiated than indicated in the official picture. The gang consisted of several clusters and leading actors gain power by privileged access to supporter networks. The fact that each leading actor had privileged access to individual supporter networks provides binding forces for the group as the leading actors remain dependent on each other because of the clustered structure of the overall network. The networks show power differentials based on social capital. The outlaw gang exhibits a differentiation of status but not of positions that would allow status to be transferred between individuals.

Keywords: outlaw gangs, organisational differentiation, communication network analysis, structure and activity

Rockerbanden: Netzwerke oder Organisationen?

Ziel der Analyse ist die Untersuchung, wie die organisierte Tätigkeiten mit strukturellen Merkmalen von Organisationen in der organisierten Kriminalität zusammenhängen, d. h. allgemein: auf die Beziehung von Handlung und Struktur. Die hier verfolgte Forschungsfrage ist, wie Rockerbanden in einer Skala zwischen durchlässigen Netzwerken und monolithischen Verbrechersyndikaten zu verorten sind. Zu diesem Zweck wurde, basierend auf Abhörprotokollen polizeilicher Ermittlungen, das Kommunikationsnetz einer Rockerbande analysiert. Netzwerkindikatoren einzelner Akteure, wie Zentralitätsmaße, sowie Merkmale des Gesamtnetzwerks, wie Cluster, wurden analysiert und die Arbeitsteilung innerhalb der Gruppe untersucht. Die Ergebnisse der Analyse wurden mit dem offiziellen Bild der Rockerbande verglichen, das eine vorgebliche Aufgabendelegation und strenge formale Hierarchie aufweist. Während die formale Struktur sich teilweise in kommunikativen Aktivitäten wiederfindet, gibt es jedoch auch erhebliche Abweichungen. Es konnte eine arbeitsteilige Rollendifferenzierung festgestellt werden, die Gruppe erwies sich jedoch als weitaus weniger differenziert als es dem offiziellen Bild entspricht. Die Bande bestand aus mehreren Clustern und führende Akteure erlangten Macht durch privilegierten Zugang zu ihren jeweiligen Unterstützernetzwerken. Die Tatsache, dass jeder Hauptakteur privilegierten Zugang zu einzelnen Unterstützernetzwerken hatte, stellt Bindungskräfte für die gesamte Gruppe her, da die Hauptakteure so voneinander abhängig bleiben. Es finden sich auf individuellem Sozialkapital basierende Statusdifferenzierungen, jedoch keine sozialen Positionen, die Verfestigung von Status ermöglichen würden. Dies ist jedoch ein entscheidendes Strukturmerkmal von Organisationen.

Schlagwörter: Rockerbanden, Organisatorische Differenzierung, Kommunikationsnetzwerkanalyse, Handlung und Struktur

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1. Introduction

Research on organized crime underwent a shift from the emphasis on organizations as rational enterprises to the activity of organizing. Rather than focusing on monolithic crime syndicates, for which the Cosa Nostra may serve as a prime example, small permeable networks that quickly form and dissolve for taking advantage of criminal opportunities have come into view. In sociological terms the question of size and degree of organizational structure reflects the dichotomy of structure and action (Giddens, 1984; Schimank, 2000; Archer, 2003). The objective of this investigation is to question whether structure can be revealed in everyday interactivity, i.e. if the features of an organizational structure are reflected in activity. While this is a general theoretical problem, in the legal world social structure may become manifested in contractual relations and written law which is enforced by the state monopoly of violence. Outside the legal world the emergence and maintenance of stable structures cannot rely to the state as a third party as norm enforcement agency. For this reason, criminal organizations provide a testbed for investigating if and how structure emerges. In this article we investigate whether and how the emergence of structures that are characteristic for organizations can be observed in processes of interaction. For this reason, an analysis of a communication network was undertaken with classical methods of indicator based social network analysis.

We investigate data of a criminal investigation on a case of an outlaw gang. Outlaw (often motorcycling) gangs, for which the Hells Angels might be the most prominent example, might provide a good chance to observe an organization in the making. The public image of outlaw gangs remains ambiguous between a leisure club and organized crime. They have a legal pillar and are not completely covert organizations. This provides a chance for establishing official structures. For studying an organization in the making, the focus of our investigation is not restricted to criminal activities. We study the activities that make the group an organization. Moreover, outlaw gangs establish a common identity that becomes manifested in certain motorcycles or jackets etc. This makes the emergence of closed communities more likely to foster obedience towards authorities (Simmel, 1908). In fact, outlaw gangs have the reputation of a hierarchical authority establishing a law without a state. On the other hand, the official, legal side of outlaw gangs implies that people voluntary participate and might also leave the organization. Nevertheless, outlaw gangs are also involved in criminal activities. It remains unclear however, how dangerous outlaw motorcycling gangs really are, i.e. whether they established area-wide extortion rackets (particularly in certain areas within red-light districts). For instance, Morselli (2009b) found that illegal activities of Hells Angels members where not tied to their position in the gang. Thus, appearance of outlaw motor cycling gangs remains ambiguous between economically and ideologically driven groups. This makes it likely that they are in-between monolithic crime syndicates and fluid groups (Morselli, Giguère & Petit, 2006). Finally, as data on outlaw gangs remains sparse the examination of the data provides further insight in the organization of outlaw gangs.

The analysis is a case study based on police wiretapping of a certain case. Generating an analysis from observations in the field, such as police wiretapping, has advantages and disadvantages (Flyvbjerg, 2006). An advantage of real-life data not collected specifically for scientific purposes is a high degree of external validity. Data basis are direct observations in the field. A disadvantage of case studies in general is that they do not proof universal laws, if they exist at all. They merely provide a proof of existence. Moreover, by drawing conclusions from police investigations it cannot be expected that the conclusions about the formal organisational

structure are without errors. In particular, network measures drawn from "incomplete data set are by definition unreliable" (Klerks, 1999, p. 58). Limitations will be noted in the subsequent analysis of the results. Nevertheless, a case study provides a means to partly overcome the limitation of data access in the domain of organized crime in which complete and representative data sets remain inaccessible (Klerks, 1999). We discuss this issue when describing the results in more detail. The remainder of the paper reads as follows: first the investigation is placed in the context of the current research (section 2). Next, data and method is presented (section 3). The analysis is based on data of police investigations of a specific outlaw gang and it is discussed how indicator-based network analysis is put in use for the research question. In the section 4 results are presented and discussed in section 5. Finally, the paper ends with a concluding summary in section 6.

2. Criminal Organizations: Structure or activity?

Research on whether and inasmuch criminal organizations exhibit and maintain structures of professional organizations shows mixed evidence. First, it has to be mentioned that using criminal organizations as a test-bed for the emergence of structure has to take into account that developing quasi-governmental structures outside the legal world does not happen in a social vacuum (Reuter, 1983). Criminals "are outside the law but inside society" (Hobbs, 1995, p. 13). Criminal structures are embedded in society (von Lampe, 2016) which does not allow to transfer findings directly to the emergence of social structures in the legal world. Criminal organizations enable just as little insight into a social primitive state as "primitive" societies do – in contrast to the objective of Durkheim's program of the study of ancient religion. Nevertheless, within a specific social environment, criminal organizations are faced with challenges such as the development of entrepreneurial and governance structures or procedures (Varese, 2010) that are not specific for a criminal environment. Therefore, they do provide insight into a continuum of solutions to handle these challenges for organized society.

As criminal organizations obviously are covert organizations, a lasting paradigm of the perception of criminal organizations had been influenced by Simmel's (1908) seminal work on secret organizations, arguing that the delimitation against the outer world is complemented by a close association inside. Under this condition a secret organization has a complete control over the individual. For preserving loyalty and trust, Simmel argued that secret organizations need to be organized by hierarchical structures in which power is centralized to the leader. The most prominent example of a criminal organization of such kind is the 'Cosa Nostra', a professional organization with top down control by the managerial authority and formally defined roles (e.g. as capo di famiglia) and positions (e.g. interprovincial commission) (Paoli, 2003; La Spina, 2005; Dickie, 2007). The Mafia has also been a starting point for the current academic debate (von Lampe, 2015). In the late 1960s and early 1970s Cressey (1969; 1972) took the American Cosa Nostra as paradigmatic example of a criminal organization for developing the thesis of a developmental trajectory of organizational growth and rationalization of criminal organizations. This assumption of organized crime as big and professional syndicates can be regarded as the starting point for further research (Lamm Weisel, 2002; Felson, 2006; Shaw, 2006).

However, organizations in the legal world are characterized by certain distinctive features that are challenging to maintain in the illegal domain. They are created for certain purposes such

as economic enterprises or political organizations and comprise of multiple individuals as members of the organizations. Membership is a contractual relation, i.e. members can voluntarily join or leave the organization. Joint activities in organizations are co-ordinated by the paradigm of a bureaucratic organization (Weber, 1972) in which superior members delegate tasks to subordinates. Even though on a micro level subordinates might have a considerable informal power, in formal terms an organization is characterized by a hierarchical structure (Luhmann, 1964; 1973; Crozier & Friedberg, 1979; Kühl, 2011). In legal organizations, abiding to rules of contractual relations can be delegated to the third party of the court. As criminal organizations cannot rely on legal contracts, it is precarious to maintain these characteristic features of organizations. While particular criminal organizations are created for certain purposes, the other features of legal organizations are less obvious in the case of criminal organizations because criminal relations cannot be backed up by recourse to the court, i.e. the state monopoly of violence. Contrary to Simmel's claim it can be argued that criminal organizations remain dependent on the member's commitment to the organization (Diesner & Carley, 2010; Campana & Varese, 2013). For this reason, Erickson argued that under the condition of covertness "it is surprising that secret societies ever manage to stay hierarchical for any length of time" (Erickson, 1983, p. 202). The condition of covertness aggravates the maintenance of centralized control. In a similar vein, Reuter (1983) argued that in contrast to Cressey's thesis criminal organizations should be more likely to operate on a small and local level.

Balancing between the opposing views it is argued that criminal organizations face a trade-off between efficiency and security (Morselli, Giguère & Petit, 2006). While it is admitted that organizational growth, structural differentiation and a rational organization of the group management increases returns, on the other hand maintaining secrecy calls for reducing communication to a minimum. In this respect small and local groups are in advantage. For this reason, it is argued that organizational growth comes at the cost of increasing the danger of being subject of criminal prosecution (von Lampe, 2015). This thesis is not uncontested e.g. by claiming that big and powerful organizations have the resources to minimize risks e.g. by corruption (Cressey, 1972; Bouchard & Ouellet, 2011). Factually different degrees of size and professionalism had been detected even in the same criminal market. For instance, in the case of cigarette smuggling, von Lampe (2015) found a scale from self-sufficient enterprises to complex illegal organizations integrated in the legal economy. Evidence of hierarchical and centrally organized groups in the case human trafficking has been found by Salt and Stein (2002), Salt (2000) and Campana (2015). In the case of cocaine trafficking Natarajan (2000) distinguished between bosses, assistant managers and field workers, whereas in the case of New York's heroin market, Natarajan (2006) found only small groups of entrepreneurs rather than criminal syndicates. Studying the drug market in Quebec, Morselli, Paquet-Clouston and Provost (2017) found out that the position in the market was more relevant for the performance of an individual in drug trafficking than being a member of an organization. Nevertheless, it can be assumed that to a certain degree, differences in the organizational structure can be traced back to differences of purpose (Morselli, Giguère & Petit, 2006). As a general proposition, economically driven groups (e.g. drug trafficking as motivation) or ideologically driven (e.g. terrorism as motivation) can be differentiated. While economical motives might increase the readiness to assume risk for short term benefits, more long term oriented terrorist groups might favor maximizing security to be able to achieve their goals in the end (Krebs, 2002; Duijn, Kashirin & Sloot, 2015; Morselli, Giguère & Petit, 2006).

In line with the theoretical doubt of the organizational growth thesis, the paradigm of big crime syndicates has been methodologically challenged in the past decades by research influenced by the network paradigm. Applying the methodological approach of social network analysis, it is suggested that social networks analysis is not only an analytical approach for detecting hidden formal structures. Following Morselli, the conditions of covertness for criminal organizations shapes the kind of interactions and relations throughout and beyond the criminal network (Morselli, 2009a). The network approach changes the view on criminal organizations as flexible adaptive systems without hierarchical relations instead of a hierarchically structured syndicate (Sparrow, 1991; Klerks, 2002; Krebs, 2002; Morselli, Giguère, & Petit, 2006; Duijn, Kashirin & Sloot, 2015). Networks might form and dissolve quickly for temporarily taking advantage of criminal opportunities (Natarajan, 2006). It is argued that networks are different from formal organizations (characterized by purpose, membership, and hierarchy) as "a network organization maintains permeable boundaries either internally among business units or externally with other firms. Management is less hierarchical and authority is more derived from expertise than from rank" (van Marshall, 1997). For instance, in an early study of covert networks, Baker and Faulkner (1993) found that central players deliberately operate on the periphery for reducing the risk of being detected. Emphasis of organized crime research has shifted from organizations as a monolithic entity to organizing as a collective activity. The field should be regarded not as organized crime but crime that is organized (Hobbs, 2001).
This leads to our research question of investigating the degree of organizational differentiation by the means of a network analytical approach. On a methodological level this implies the question, how can structures be detected by analyzing networks of interaction? In theoretical terms this implies the question: how can features of an organization be established and preserved in processes of interactivity (Neumann & Cowley, 2015)? How is the relation between structure and (inter)action shaped? Certainly research has provided evidence that many degrees of organizational structure in-between a strict hierarchical structure and a completely flat network can be found in organized crime. This diversity of empirical data provides a testbed for social theory, namely to investigate the scale of organizational differentiation. Our analysis is directed towards the question by what mechanisms structures such as organizations can emerge from interaction, i.e. what makes an organization in terms of interaction. In theoretical terms this implies the question of how features of an organization can be established and preserved in processes of interactivity.

3. Data and Method

In the following section, first the data is presented (sections 3.1 and 3.2), subsequently the methodology is described on a technical level (section 3.3). Finally, an introduction of how the research question is investigated, in terms of a network analysis, will be addressed in sections 3.3.1 and 3.3.2.

3.1 Case Selection

As a case study, police investigations about a German outlaw gang have been selected. Outlaw gangs have been selected for a case study research since it is debated whether members of outlaw gangs should be prosecuted for individually committed crimes or whether outlaw gangs

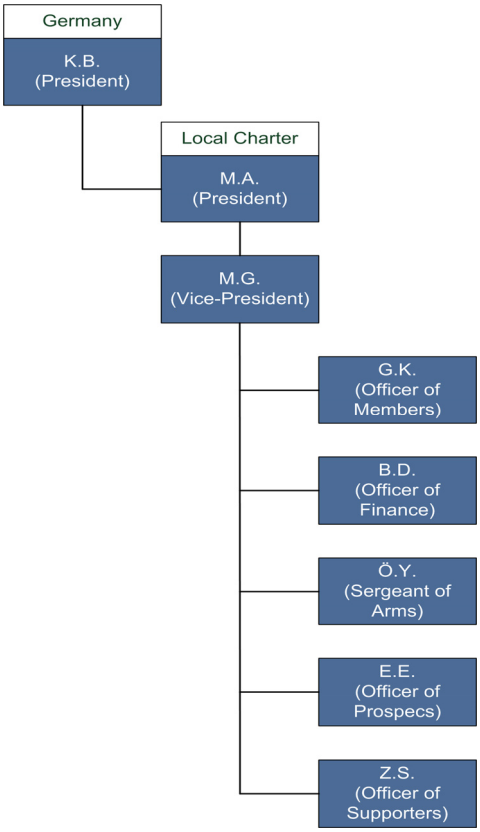
should be combated because of what they are (Bjørgo, 2019; Rostami & Mandani, 2019; Barker, 2014). While it is without a doubt that a higher percentage of outlaw gang members commit crimes than it can be found in the overall population and even in the overall biker population (Blockland et al., 2019; Quinn & Koch, 2003), there are also members without or with only minor criminal records (Bjørgo, 2019; van Koppen et al., 2010). Likewise, criminal performance need not be directly tied to a role in an outlaw gang (Morselli 2009b). It might also be that the appearance of outlaw gangs causes a moral panic (Cohen, 1973). This trade-off implies the question if outlaw gangs are criminal organizations per se. It could be argued that simply individuals which are "accidentally" members of outlaw gangs also commit criminal offences. In a typology of different types of criminal organizations (von Lampe, 2016) they can be classified as having a footage in the legal society and a high degree of formalization. As outlaw gangs have a public image of a hierarchical structure and authoritarian leadership style it is likely that they develop structures of organized society. The gangs cultivate a certain group culture around an image of violent masculinity. The distinct culture generates a common identity that becomes manifested in certain distinct habits. Common symbols such as jackets or motorcycles provide certain binding forces by a common identity. This common identity in turn makes outlaw motorcycling gangs closed communities which fosters the perception of illegal activities as legitimate from a perspective from within (Bley, 2014). It is likely that obedience to internal authorities emerge within such a closed community. This suggests that a hierarchical structure is more likely than in gangs of drug dealers as investigated for example by Natarajan (2006). This is due to the case of drug dealing collaboration being based on economic self-interest, therefore obedience to authorities is less likely to prevail. Outlaw gangs are different from purely self-interested criminal groups (such as drug dealing associations) in which individuals are tied together by economic interest. Closed communities of outlaw gangs in which individuals share a common identity are more of the type investigated by Simmel. Thus, at first glance it seems likely to locate outlaw gangs as organizations in the making in-between networks and organizations. This feature makes them a testbed for investigating the emergence of structures from activities.

3.2 Data Description

In this case study an analysis of communication networks will be undertaken based on a certain police investigation. At the time of the police investigation, the specific local charter of the outlaw gang had not been established for too long (about two years) which provides a chance to observe how structures become established. The police investigation dates back to the year 2011 in which for four months the police conducted wiretapping of a local charter of an outlaw gang which was suspected to be involved in several criminal acts, ranging from drug trafficking to violent attempts of entering the market of protection of discos (doorman scene), to computer crime (manipulating gambling machines) and extortion. For the analysis, documents of the subsequent court trial in 2012 had been used. The documents of the court trial include protocols of about 500 phone calls and text messages which are the data basis of the network analysis. It has to be noted that the court documents include only phone communications that has been relevant for the hearing of evidence. However, this is not restricted to communication about criminal activities but to communication that was related to the activity of the gang. The surveillance included 9 members of the outlaw gang. For each gang member, different phones

were monitored. Sometimes they were registered to different persons, sometimes also registered under false names, but thought to have been used by the suspects. The communication analysis has been implemented by the open source Social Network Analysis (SNA) tool NodeXL[1], occasionally supplemented by brief excerpts of the content of the messages.
It has to be noted that this particular gang was not a motorcycling gang. However, the gang was involved in violent altercations with another outlaw gang, eventually in association with defining the borders of territories of protection activities in the doorman scene. In fact, the group selected for the case study was assumed to have a strict formal organizational structure. While not being a motorcycle gang, they used formal symbols of certain jackets that demonstrate the membership of individuals in the gang. Only gang members had been allowed to wear these jackets and members had to hand out the jackets once they attempted to leave the gang. As a common practice in outlaw gangs in general (Bley, 2014) the right of wearing certain jackets is an important symbol in this gang as well. The gang had a nationwide presence of individual charters with a stronghold in South-West Germany. The local president in the examined documents (here denoted as M.A.) from time to time received general instructions from the national president (here denoted as K.B.), who also appears sometimes in the protocols. Figure 1 shows the 'official' structure of the local charter, extracted from the investigation files, which reflects the traditional structure of outlaw gangs (Holmes, Tewksbury, & Higgins, 2012).

Figure 1. Formal organisation structure (up to 10/2011)



[1] http://nodexl.codeplex.com (Vers. 1.0.1.341)

Figure 1 reveals a hierarchical organizational structure. However, do everyday interactions confirm this public image? Outside the legal order, secured by the state monopoly of violence, an organization cannot be constructed by officially valid contracts. Thus, maintaining authority of 'official' leadership cannot be enforced by recourse to the third party of a court as (at least ultimate) resource for securing compliance with contractual duties. So does daily interaction factually confirm this picture of a strict hierarchical organization?

3.3 Methodology: Operationalization of Research Question

In this section, we first briefly outline the methodological approach using indicator-based network analysis. A systematic analysis of networks covers the analysis of the overall network structure, identify important nodes (e.g. key players), identify strong/weak links between nodes etc. This is basically achieved through the usage of key indicators of a network, which describe certain formal network characteristics (e.g. number of ingoing and outgoing links of a node etc.). But at the same time, they can be interpreted as attributes of an actor in a social network (e.g. how well is she/he connected). Based on these key indicators, social network analysis tools usually offer more comprehensible analysis methods, like identification of clusters, cliques etc. (Bright et al., 2015). Next, we outline how these techniques enable answering the research question, i.e. its operationalization and how the indicators and analysis techniques can be used for information extraction.

The latent variable to by investigated is the degree of organizational differentiation of the criminal gang. Organizational differentiation implies the existence of role differentiation between the members. One central element of role differentiation is a differentiation of status. Status, however, may be gained by individual prestige as well as being ascribed to social positions (Dahrendorf, 1956; Luhmann, 1964). Peter Blau (1977) described social structure as the distribution of a population among social positions and the social relations among these positions. Positions are different from persons: inhabitants of positions can be replaced without changing the structural relations between the positions. For instance, the president of the USA (e.g. George W. Bush) can be replaced by a successor (e.g. Barack Obama) which are certainly different individuals. Nevertheless, both persons are president of the USA, a position that implies certain structural relations to other positions. Thus, status ascribed to social positions refers to Weber's ideal type of bureaucratic power (Weber, 1972). The ideal type of a bureaucratic organization is a hierarchical structure. Developing such structural differentiation in a criminal organization is a central element of Varese's (2010) concept of illegal governance. In fact, the 'official' picture drawn by the police of resembles to a large degree this ideal type of a hierarchical command structure. Moreover, the 'official' picture reveals a further element of professional organizations: a differentiation into specialized functional roles such as sergeant of arms or officer of finance etc. This resembles a functional differentiation into professional tasks delegated to individuals with specialized accountabilities and eventually specialized competencies (Sparrow, 1991; Morselli, 2009a). The development of functionally differentiated organizational units in a criminal organization is an essential element of Varese's (2010) concept of illegal enterprise. Thus, it will be investigated whether the analysis of the network structure reveals the enacting of a) status differentiation as indicator for managerial power in a hierarchical organization and b) a division of labour as indicator for a functional differentiation into specialized organizational units.

3.3.1 Hierarchical Structure

For examining status differentiation, the concept of social capital (Bourdieu, 1982; Sparrow, 1991; Lin, 20001) can be utilized. Whereas physical capital such as property or money can be used in transactions and cultural capital such as education might promote social mobility, the concept of social capital describes the resources that an actor can mobilize. This ability depends on the positioning of an actor within a social group. Therefore, the concept of social capital is closely related to network analysis (Lin, 2001). For instance, a CEO of a large company has a high amount of social capital because the CEO has a huge amount of important contacts, i.e. large and influential social network. This holds for criminal networks as well: "Like legal business, criminal networks depend to a large extent on social contacts" (Duijn, Kashirin & Sloot, 2014, p. 2). Thus, a high amount of social capital indicates a powerful position. This can be measured by the centrality of an actor within a network. A most simple measure for power in a network is degree centrality. Degree centrality denotes the number of ties of a node. Thus, it is a measure on the level of the individual actor. A high degree of centrality indicates influence and power of the actor. In a directed network (as in the case of phone calls when it can be distinguished who calls another person and who had been called) degree centrality comes in two ways: in-degree (i.e. being called) indicates the popularity of an actor, out-degree (i.e. calling) indicates if an actor is influential in the network (Jansen, 1999). For examining whether the gang exhibited structural properties of a hierarchical organization the power difference in the network is important. High centrality of an actor corresponds to strong access to resources that characterizes influential and powerful positions within a network. Thus, in contrast to decentralized flat networks without hierarchical structures that should not exhibit strong differentials in degree centrality, status differentiation should be characterized by high differences in degree centrality.

A different centrality measure is betweenness-centrality: Betweenness-centrality measures whether an actor is positioned within the shortest path between groups of actors (Jansen, 1999). This enables control of the flow of information or resources within a network. For this reason, betweenness-centrality is associated with a broker position. As indicator for a broker position placed between cliques a high betweenness-centrality does not necessarily come along with a high position in a hierarchy. Nevertheless, we measure betweenness-centrality because the centrality measures are typically associated with the concept of social capital (Bourdieu, 1982; Sparrow, 1991; Duijn, Kashirin & Sloot, 2015). High centrality, whether degree- or betweenness-centrality, indicates high social capital which is again an indicator for social power.

3.3.2 Division of labour

Division of labour is a central feature of a rational organization of activities in an organization. Therefore, investigating the division of labour is an important indicator for the professionalism of the gang, i.e. if they factually are more like a leisure club or more involved into professional criminal activities which require specialized skills and tasks.

The first step is an identification of clusters in the network. These are subgroups with strong internal ties but only weak links to the other parts of the network. These can be identified by an indicator-based cluster analysis supported by graphical visualization using the Clauset-

Newman-Moore (or Girwan-Newman)[2] algorithm. Existence of clusters is an indicator that the overall group is divided in separate units comparable to departments of a company.
However, existence of clusters is not sufficient to prove division of labour. They might also indicate for instance rivalling subgroups. Therefore, we applied additionally a coding scheme developed by Campana and Varese (2013) for examining whether subgroups are concerned with different tasks. Relying on an established coding scheme, rather than developing a new one from scratch, increases comparability of the analysis. Classification of the purpose of each contact by analysing the content of the surveyed communication had been undertaken manually. Following the classification from Campana and Varese (2013) the division of labour is characterised by the following four categories:

- EI: Economic Investment
  (i.e. discussions on business investments carried out in the legal and illegal economy)
- GM: Group Management
  (i.e. conversations on the day-to-day management of the group, including the activities of monitoring, intimidation and punishment of the group's members)
- PA: Protection Activity
  (i.e. efforts to supply illegal protection and control markets as e.g. the doorman scene)
- RA: Resource Acquisition
  (i.e. discussions about the acquisition of specific input to run the groups, including drug acquisition)

4. Results

This section provides the results of the analysis. The section begins by calculating and discussing overall network indicators. Then centrality measures of the actors are analyzed and clusters in the network are identified. This is followed by an analysis of division of labour in the group. The analysis is supported by interactive visualization which increases transparency of the results. Finally, the results of the analysis enable a comparison of the formal hierarchy with the informal communication.

4.1 Overview of Key Indicators

The analysis starts with a top down characterisation of the overall network, described both by appropriate key indicators and the corresponding graphical representation. Table 1 shows the basic graph indicators.
These characteristics of the data provide useful information for answering the question of organizational differentiation:

- Among the total number of 495 edges, 414 are edges with *duplicates* and only 81 unique edges, i.e. interaction partners that have only been called once. The over-

[2] *Clauset-Newman-Moore (or Girwan-Newman)* is a hierarchical cluster algorithm, in which the distance concept to merge nodes hierarchically is the shortest number of edges (*edge betweenness*) between nodes.

whelming number of interactions consists of repeated interactions. Thus the communication reveals a high degree of stability. This indicates that the network reveals stable interactions.

- The *Reciprocated Edge Ratio* is more than 50 % (0.521), which means that a substantial amount of reciprocated calls between pairs of people were conducted. Together with the very high number of *Edges with Duplicates* (414 of 495) this suggests that this network presumably reveals an organisational type of communication.
- However, the *Maximum Geodesic Distance* (5) nearly follows the classical statement that everybody is connected with everybody else in 6 steps (Milgram, 1967), on Facebook even less (Backstrom et al., 2012). In contrast to that, the *Average Geodesic Distance* (2.751) is much smaller. This difference between maximum and average distance calls for an explanation. In comparison, the 9/11 hijackers are a well-known example for the thesis that terrorist networks tend to be only loosely connected networks in favour of security over efficiency. Krebs found a mean distance of 4.75 and a maximum distance of 6. He commented this finding that he "was amazed at how sparse the network was" (Krebs, 2002, p. 46). The fact, that here the maximum distance is nearly equal, but average distance much smaller suggests that the network examined here might be divided in clusters, cliques etc. with substantial shorter distances. However, the clusters might be strongly separated as for instance in the interaction between different companies. Thus it might be a network of groups which might have organizational characteristics within.
- G*raph Density* value (0.016) is very low, which indicates that the graph is far away from a fully connected graph and that there might exist more or less isolated subgraphs which lower the graph density. Confirming research that states that criminal networks tend to be of low density (Baker & Faulkner, 1993; Enders & Su, 2007). However obviously, low graph density values are not uncommon for bigger graphs in general.

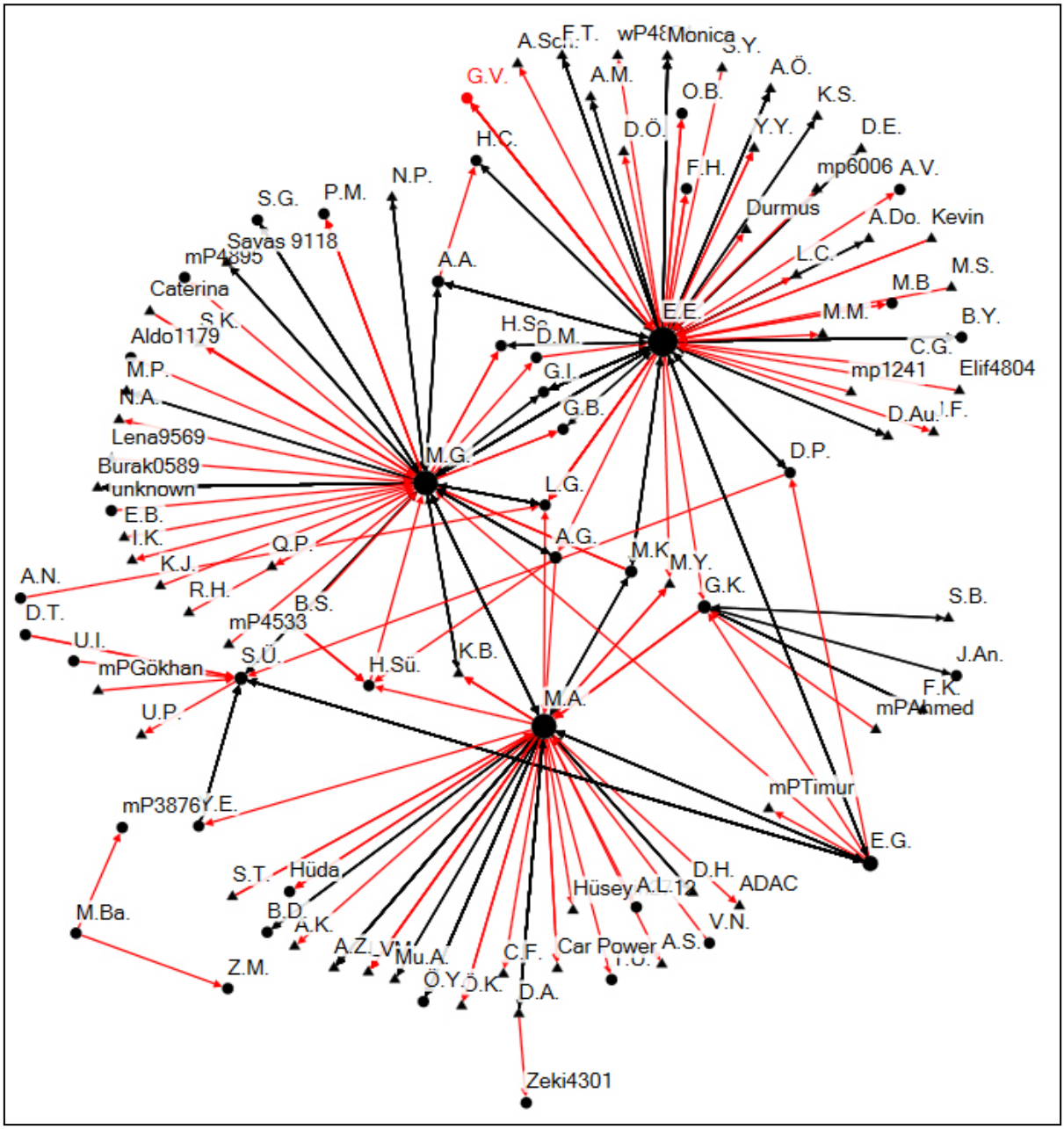
Table 1. Summary of key indicators of the network

Graph type	Directed
Unique edges	81
Edges with duplicates	414
Total edges	495
Reciprocated edge ratio	0.52
Maximum geodesic distance	5
Average geodesic distance	2.75
Graph density	0.016

Thus, *duplicates* and *Reciprocated Edge Ratio* on the one hand and *Geodesic Distance* and G*raph Density* on the other hand provide mixed evidence. For this reason, the key indicator-based analysis is expanded by the graphical representation of the overall network: This is shown in figure 2. Reciprocal communication is represented by edges in red, and gang members have the node shape circle, whereas non-members have the node shape triangle. The amount of activity of the actors, measured by the number of outgoing edges, is visualised by the node size (node size = key-indicator "out-degree"). Figure 2 more or less supports the previous statements about the general graph structure (high number of reciprocal edges (in red), short length of calling sequences of edges between two nodes, graph nodes are obviously not

fully connected). But furthermore, the graph gives some additional information about the general network structure, which again leads to ideas for subsequent analyses.
For example, the network contains people who are obviously much more active in calling others (*E.E., M.G., M.A., G.K., S.Ü., E.G.*). These are members of the outlaw gang (node shape = circle). This finding is of course also influenced by the concrete surveillance measures, which had been concentrated on persons suspected of criminal activities. But it might be interesting to analyse if the communication activity of a person matches his position/importance in the formal hierarchy of the outlaw gang.

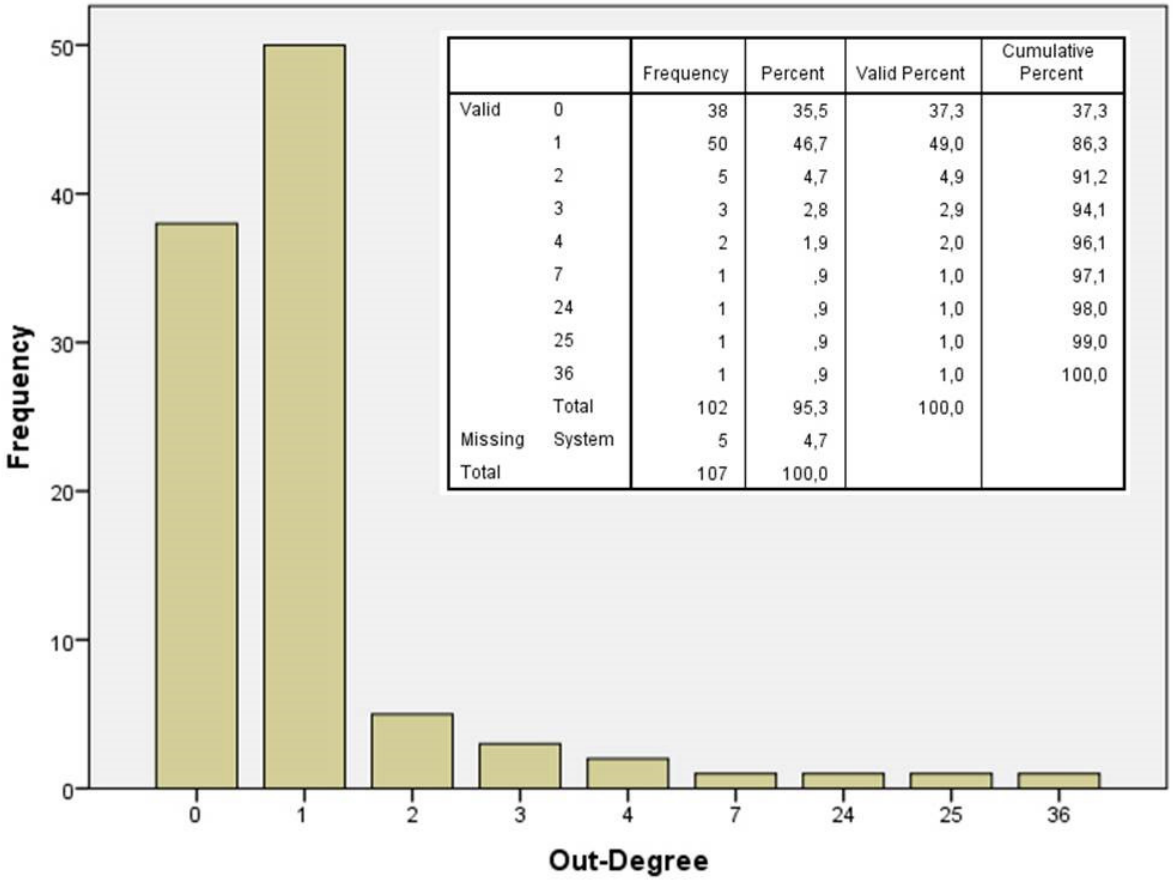
Figure 2. Overall Network



4.2 Centrality measures: analysis of hierarchical structure

The indicators of the properties of the overall network suggest that there are only a few nodes with a particular importance. First, we investigate the frequency of the out-degree distribution to get an impression of how much communication is covered by individual actors.
Figure 3 shows the properties of the overall network: namely the frequency distribution of the out-degrees. The frequencies of out-degree values of the overall network sharply decrease with increasing out-degree, i.e. only few actors have high values of out-degree. There are 50 actors with a value of 1 and 38 with a value of 0 (i.e. they have only been called but did not make a call). However, there is only one actor with a value of 36, 25, 24, and 7. Only 6 members have an out-degree value of 4 and more. Thus, the network is highly centralized. This indicates a strong status differentiation among the communication partners. Communication is concentrated to a few hubs in the network. This should be more substantiated by the following analyses of individual actors, based on the three centrality measures *in-degree, out-degree*, and *betweenness*, which indicate – among other indicators – the importance of a node in a network. Following the insight of figure 3 we concentrate on degree indicators of the top actors. Following figure 3 these are between 4 and 6 actors, so we decided to have a closer look at the top 5 actors. Table 2 shows that the outlaw gang member E.E. has a leading role in all three categories and that only 6 gang members are in the top 5 ranking. Likewise, M.G. and M.A. are at rank 2 and 3.

Figure 3. Frequency distribution of out-degree values



		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	38	35,5	37,3	37,3
	1	50	46,7	49,0	86,3
	2	5	4,7	4,9	91,2
	3	3	2,8	2,9	94,1
	4	2	1,9	2,0	96,1
	7	1	,9	1,0	97,1
	24	1	,9	1,0	98,0
	25	1	,9	1,0	99,0
	36	1	,9	1,0	100,0
	Total	102	95,3	100,0	
Missing	System	5	4,7		
Total		107	100,0		

M.G. is at rank 2 with regard to in-degree and betweenness, M.A. performs slightly better than M.G. only in the out-degree. As the central actors are outstanding with respect to both degree- as well as betweenness-centrality they accumulate high social capital, which reveals a strong concentration of power in the network. Thus, the factual communication indeed indicates a strong power imbalance that suggests a hierarchical structure. However, the rather high maximum geodesic distance and low graph density calls for an explanation. For this reason, we proceed with an analysis of clusters.

Table 2. Node Ranking

Centrality/ Ranking	**1**	**2**	**3**	**4**	**5**
in-degree	**E.E.** (26)	**M.G.** (23)	**M.A.** (13)	**S.Ü.** (7)	**G.K.** (6)
out-degree	**E.E.** (36)	**M.A.** (25)	**M.G.** (24)	**E.G.** (7)	**S.Ü**. (4)
Betweenness	**E.E.** (5192.0)	**M.G.** (4360.4)	**M.A.** (3768.2)	**G.K.** (955.4)	**S.Ü.** (827.2)

A potential pitfall however, firstly needs to be discussed: Even though centrality measures seem to be rather robust related to data limitations through criminal justice files such as surveillance transcripts (Berlusconi, 2013), when measuring network centrality, the problem becomes apparent that those suspects might become the nodes of the overall network that have been surveilled simply *because* they have been surveilled. Therefore, a closer look at subjects of the surveillance will be undertaken here: the 9 gang members that had been subject of wiretapping will denoted here as M.A., E.E., M.G., S.Ü., G.K., Z.S., H.S., E.G., M.T. Note again that only communication relevant for the court trial had been included in the documents. It can be seen, that in fact only tapped suspects are among the central actors. However, it also becomes obvious that not all tapped gang members are among the central actors. Figure 4 shows that the 6 members with an out-degree value of 4 and more are less than the 9 members under surveillance. This provides a certain credibility that the surveillance in fact identified the central actors and not – differently – the tapped members became central just because their communication had been recorded.

4.3 Identification of clusters

The low overall *graph density value* (0.016) and the identification of just a few important nodes in the section before suggest, that there might be subgraphs, clusters or groups in the communication network. Figure 4 shows the extraction of 7 clusters by the *Clauset-Newman-Moore* algorithm, with the corresponding nodes (and edges) coloured differently (blue, light blue, green, light green, red, black (2)). It can be concluded that different sub-units exist in the group. The two black clusters might be ignored here because of their small size. The remaining 5 clusters reflect the structure of the overall network (figure 2) quite well, which means that the important actors based on their centrality measure (*E.E., M.G., M.A., G.K., S.Ü., E.G.*) are also the dominant members in each of the clusters. This explains their degree centrality. In particular, the three actors that are most important according to their centrality *(E.E., M.G., M.A.)* are in the center of big clusters (green, blue and light blue). G.K. is the star of the smaller

red cluster, whereas the role of S.Ü. und E.G. is not that clear. The fact that except from the cluster in light green all clusters have a star like shape with one actor in the center suggests that these central actors might have a kind of managerial authority within 'their' cluster, as the actors on the periphery of the clusters are only rarely cross-linked. This indicates the existence of separate organizational units.
Moreover, it is striking that the different clusters are connected particularly through the central actors (strength of links is graphically indicated by the thickness of the edges). M.A., M.G., E.E., G.K. and E.G. are connected with each other[3]. However, only few ties exist between the clusters except from these central actors. This explains the betweenness-centrality of these actors: They have a broker position. For instance, the red cluster can only be reached via its star G.K. Also between the green and light blue clusters only two links exist (via M.K. and K.B.) except from their stars M.A. and M.G. and only one link between the blue and the green cluster (via M.K.) that bypasses direct communication between the stars of these clusters. Thus the clusters are quite separated from each other. Only the blue and light blue clusters are more densely connected but nevertheless quite apart from each other.

4.4 Division of labour

The existence of clusters within the overall network is a precondition that different sub-units exist. These might be related to different tasks, as it is the case with different departments within an organization. Examining whether the network reveals structures of a professional rationalization of workload management, calls for investigating the division of labour in the network. The analysis so far is based on data which was extracted directly from the surveillance protocols. To analyze further questions like "how the labour in the outlaw gang is managed and distributed", it was necessary to classify the purpose of each contact by analyzing the content of the surveilled communication manually. As outlined in section 3.3.2, the classification developed by Campana and Varese (2013) had been applied for this purpose. Thus communication had been classified as either about economic investment (EI), group management (GM), protection activity (PA), or resource acquisition (RA). If the communication could not be assigned to one of these classes, the phone calls had not been excluded from the analysis but the category has been left blank (i.e. 0). It is assumed that the communication can be regarded as 'private'. The relative frequency of private versus professional communication provides information about the degree of professionalism of communication.
Figure 5 shows the frequencies of these four categories. As not all communication activities could be categorized (e.g. do not cover the categorization scheme, private communications between relatives) edges without a category (0) do not appear in the figure. Furthermore, there are some edges without a clear categorization. To keep the clarity of the graph, in these few cases the most accurate category was chosen. Nevertheless, nearly 70 % (343) of the activities could be classified. Thus, communication is mostly about organizational issues and does not contain much private messages. This shows a rather high degree of professional activities. Not surprisingly as shown in figure 5, Group Management, described above mainly as day-to-day activities, are most (49.3 %) frequent, which indicates high degree of organizational manage-

[3] The role of S.Ü. is slightly different. This actor is similar to a star in the light green cluster. However, S.Ü. is not connected to the central actors of the overall network. This communication goes via E.G.

ment activities. Communication of group management reveals a hierarchical command structure as indicated in the following example: "Meeting today at 7 pm. Participation is mandatory" (own translation). Group management is followed by Resource Acquisition (27.4 %), Protection Activity (14.3) and Economic Investment (9.0 %).

Figure 4. Cluster Graph

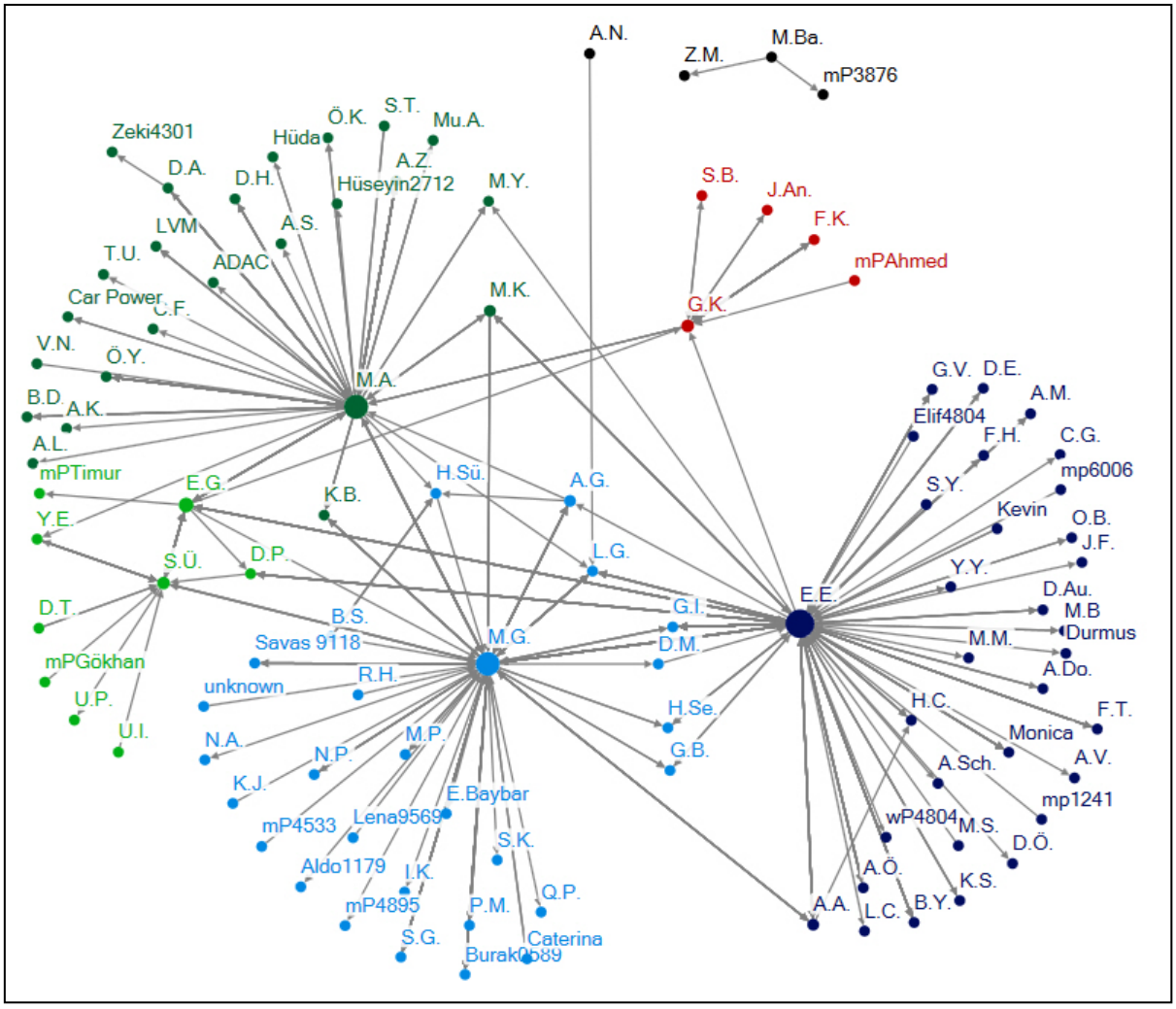
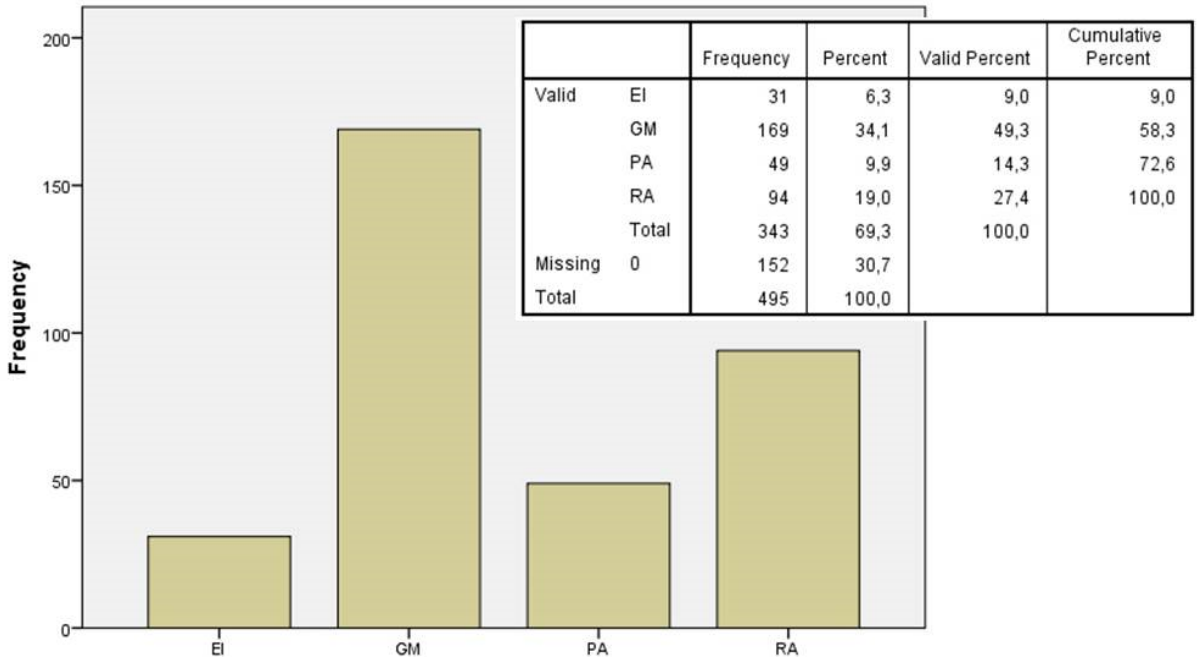


Figure 6 shows how actors are related by professional communication. Blues edges denote group management, green edges resource acquisition, red edges economic investment and black ones, protection activities. As the private communication is deleted in this network, it is smaller and does not correspond clearly to the clusters identified above. Thus, the clusters do only partially correspond to organizational sub-units that would indicate a rationalization of workflow management. Nevertheless, the distribution of the four categories among the groups member in figure 6 shows that M.G. and G.K. are mostly engaged in *group management* (GM) activities (blue), whereas MA more concentrates on *resource activity* (RA) (green). In particular, M.G. seems to be responsible for internal affairs and keeping the group together. Thus, the professional communication clustered around M.G. reveals similarities to a department for human resource management, whereas M.A. seems to be responsible for organizing economic

maintenance of the group. Thus a certain degree of division of labour can be identified. However, for E.E. no special focus is visible, which might again be an indication for a specific role within the organisation as a general dogsbody. Likewise, the communication of S.Ü. does not support the assumption of a strict division of labour assigned to distinct managerial units of an organization. In summary, not fully but partially a functional differentiation can be observed (in particular regarding the clusters around M.G. and M.A.) that may characterize an organization in the making.

Figure 5. Division of labour classification



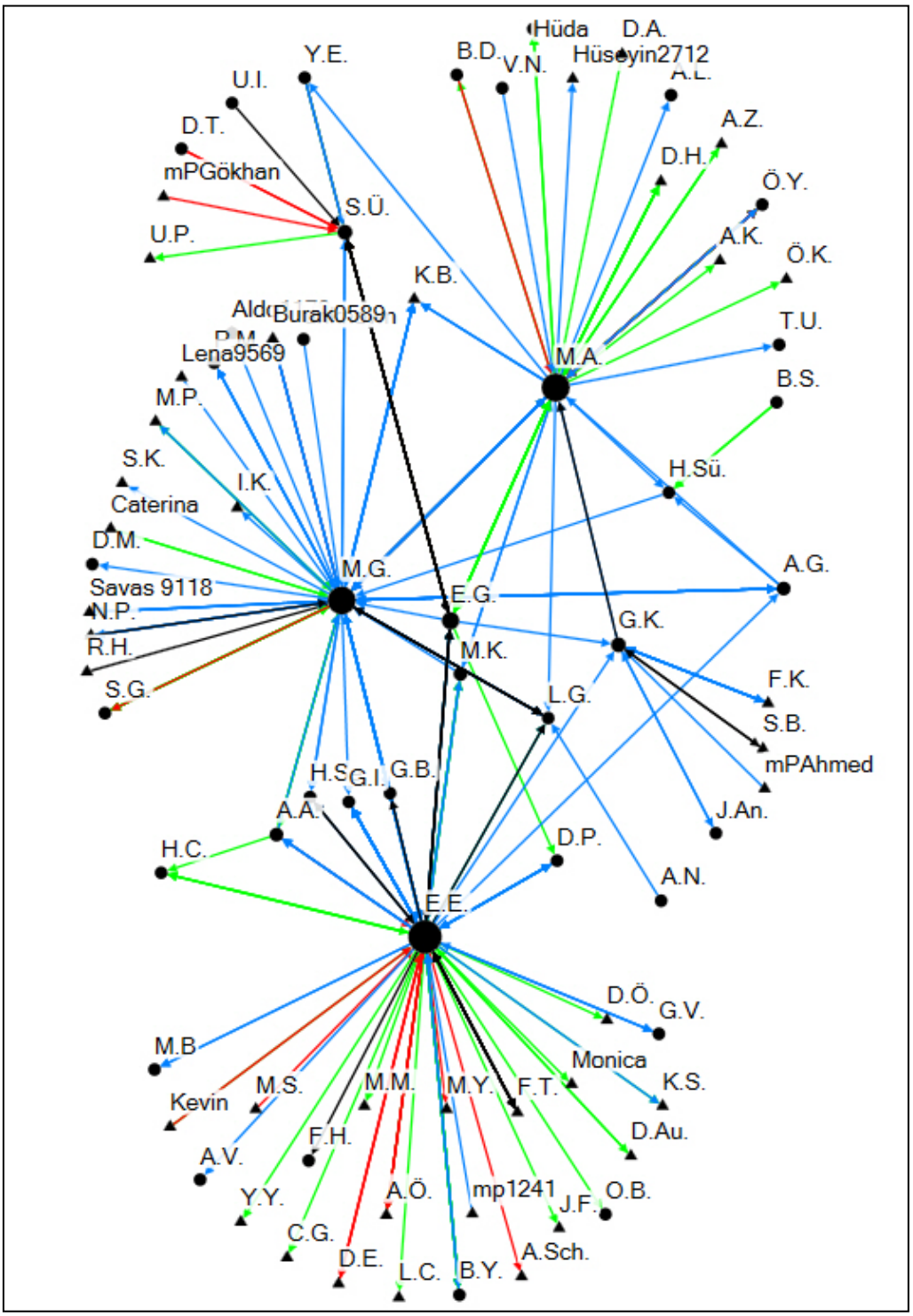
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	EI	31	6,3	9,0	9,0
	GM	169	34,1	49,3	58,3
	PA	49	9,9	14,3	72,6
	RA	94	19,0	27,4	100,0
	Total	343	69,3	100,0	
Missing	0	152	30,7		
Total		495	100,0		

5. Discussion: Findings and Limitations

Obviously, not all organisational aspects of an outlaw gang can be described by analysing only the communication network. But nevertheless, the structure of the communication network can reveal useful information regarding the concrete (informal) organisational structure, which can be compared with the official (formal) organisation. Moreover, an analysis of a single case does not allow for generalizations. For instance, Rostami and Mondani (2019) investigated co-offending network structures of different outlaw gangs in Sweden and found quite different structures in different outlaw gangs. Nevertheless, for this specific case we are now able to examine the relation between structure and action by comparing day-to-day interactivity to the formal structure as outlined in figure 1. The official image asserts that below the national president, the local charter is directed by a president, assisted by a vice president. Subordinated to these CEOs the leadership of the charter is organised by an officer of members, an officer of finance, a sergeant of arms, an officer of prospects, and an officer of supporters. At the times of the police investigations allegedly these positions had been filled by M.A. (president), M.G. (vice-president), G.K. (Officer of members), B.D. (Officer of finance), Ö.Y. (Sergeant of arms), E.E. (Officer of prospects), and Z.S. (Officer of supporters), whereas K.B. acted as nationwide president. Comparing the organisation chart in figure 1 with the results of the

communication network analysis, the following general conclusions can be drawn as summarized in table 3. First thing to note regarding the relationship of this charter to the CEO for Germany is that while some kinds of guidelines seem to have existed (as wiretapping reveals

Figure 6. Division of labour network



that the local president assured to "have done his homework") communicative ties of the nationwide president to the local charter are only sparse and only via the formal (local) president

and vice-president. This does not allow for control of ground level operations. The local charter seemed to operate rather autonomously. Thus, the nationwide gang corresponds to a franchising model.

Table 3. Comparison of formal and informal role (roles in brackets consist of only one edge)

Formal position	**Individual**	**Out-degree**	**In-degree**	**Betweenness**	**Functional role**
Nationwide president	K.B.				
Local president	M.A.	25	13	3,768.2	R.A.
Vice president	M.G.	24	23	4,360.4	G.M.
Officer of members	G.K.		6	955.4	G.M. (P.A.)
Officer of finance	B.D.				(E.I.)
Sergeant of arms	Ö.Y.				(G.M.)
Officer of prospects	E.E.	36	26	5,192	mixed
Officer of supporters	Z.S.				

Concerning the structure of the local charter, most of the people identified as important in the communication network analysis (M.A., M.G., G.K, E.E.) also appear in leading management positions in the structural description of the group. Formal structure is partly enacted in communicative activities. However, the table shows also that 3 of the 7 formal positions are not enacted by strong communicative activities. Some group members in management positions (Ö.Y., B.D., Z.S.) do not appear among the top actors in the communication network, which indicates a minor importance either of the person or the status of the position. On the other hand, the leading role of E.E. in the communication network (highest indicator values, biggest cluster, work regarding to the Varese classification most distributed) is not reflected in their formal role as responsible for future members (prospects) of the outlaw gang[4]. Likewise, S.Ü. and E.G. are not part of the top management of the outlaw gang in the corresponding period whereas they are among the top 5 central actors in the network. It can be concluded that beyond the CEOs (M.A. and M.G.) the formal positions seem to be rather fictitious. Some positions are not enacted whereas E.E. has greater factual importance than indicated by the formal position. S.Ü. and E.G. do not have a formal position at all. Thus, there exist considerable divergence between ('official') structure and action. In fact, the findings of this specific case study are in line with the findings of Morselli, Paquet-Clouston and Provost (2017) who found that the performance of Hells Angels in Quebec in the local drug market are less dependent on their membership in the organization but on the characteristics of the individuals. Thus, according to the case investigated by Morselli, Paquet-Clouston and Provost (2017) individuals are not mere puppets predetermined by their organizational role but do have considerable individual flexibility. This can also be found in the case investigated here, which increases the significance of both case studies.

[4] It has to be noted however, that the police arrested most of the leading members as result of the investigations, most importantly M.A. and M.G., the president and vice-president. After their arresting E.E. became the new president of the local charter. Thus the reputation that he gained as documented in the informal communication network, became manifest in the formal structure. This seems to indicate a process of consolidation of informal patterns in formal positions: a transition from networks to organizations (rather than installing a person into a position by e.g. elections or job advertisements).

Regarding professionalism and division of labour evidence is mixed. On the one hand, a closer look at the content of the communication reveals that status in the group had been indicated less by professional competence (as von Marshall, 1997, claimed for criminal networks). Rather status indicators found in the data had been seating-arrangement, e.g. sitting in the meetings beside the vice-president, or the sound of the cars. For instance, the president complaints at a mechanic that he "makes all cars louder than his one, although he is the president" (paraphrase of excerpts from wiretapping, own translation). This casts doubt on the professionalism and in fact, these doubts have also been articulated by group members themselves, as indicated by the content of the wiretapping: "They always say that they are not a kindergarten club. … Meanwhile I think they are a kindergarten club" (own translation). A specialization based on professional skills cannot be found. Thus the appearance of the outlaw gangs remains ambiguous between a leisure club and a professional organization and different members put different emphasise on the different aspects as for instance one member complaint "… that they as a club don't go out together" (own translation).

On the other hand, indicators for a division of labour can be found in the role differentiation between M.A. and M.G. This indicates the emergence of positions, even though eventually better described as human resource and financial resource manager than as president and vice-president. Likewise, G.K.s role as officer of members is confirmed by the activity of group management. However, even though weapons such as truncheons had been confiscated by the police, in the data there is no evidence of activities comparable to arms trade. This makes it unlikely that positions of an officer of arms had been enacted. Likewise, even though the data includes communication about money such as fees for being member or leaving the organization there is only one edge that links the sergeant of finance to the activity of economic investment. This is only a weak indicator for a position of a sergeant of finance.

However, the differentiation of the leading roles provides also a source for tensions. In fact, evidence exists that indicate a power struggle. For instance, in a phone call M.A. stated that "from today on M.G. has no right of command any more until I abrogate. … . Nothing will be done that comes from him" (M.A. own translation). On the other hand, M.G. commanded that "it is no longer allowed to call M.A. …. I'm the president and there is no vice president anymore" (M.G. own translation). This power struggle had been observed outside, as indicated in the following transcript: "I heard that you resigned presidency. M.A. negated" (own translation). Nevertheless, the tensions seemed not to lead to a complete split of the group. With regard to the question how they seem to have managed to re-arrange their relations insight can be provided by the analysis of the network structure: In particular, the different clusters in the group shown in figure 4 and 6 provide hints of what ties the overall group together. The overall group appears to be strongly divided in clusters that are only loosely tied together. However, this separation is also a feature of the network structure that generates binding forces: namely, the top figures remain mutually dependent on each other as only leaders of the sub-groups have access to their supporter network. They have a broker position towards each other. Thus, the relations between the cliques can be described as partnership of convenience[5].

[5] It is tempting to compare this network structure to Durkheim's dichotomy of mechanic versus organic solidarity (Durkheim, 1893): The network is not very differentiated with regard to specialized skills and human capital which provides a basis of organic solidarity according to which different specialists are mutually dependent on each other. Rather, different central actors possess social capital by means of monopolistic access to their supporter network. In Durkheim's terms this corresponds to a mechanic solidarity enforced by repression.

6. Conclusion

Certainly the 'brand' of this particular outlaw gang exists. However, behind the scenes the picture of a monolithic organization becomes blurred. The analysis of the communication network based on key indicators (coming from Social Network Analysis), and additionally supported by the graphical experimentation reveals insights if and inasmuch the formal structure is enacted in factual communication.

Based on the centrality measures (in/out-degree, betweenness) some central actors could be identified. A cluster analysis shows that the network consists of several clusters that are only loosely tight together. The central actors are also the dominant members of the corresponding clusters. They have high degree centrality because of a personal supporter network and high betweenness-centrality because they have privileged access to their supporters and the other central actors. The key players possess broker positions with regard to each other and for this reason remain dependent on each other. Power is based on exploitation of social capital. This mechanism provides binding forces that ties the network together. However, while the network is differentiated in clusters this does not indicate a functional role differentiation of a professional organization.

For this reason, a deeper analysis of the division of labour has been undertaken that allows comparison of formal and informal organisation structures. To undertake the analysis, the data set was enhanced by information, extracted manually from the content of the communication protocols. In fact, the central actors of the formal structure (president and vice-president) mainly focussed on different communication purposes, namely group management and resources acquisition. This reveals in fact a role differentiation that may indicate the emergence of organizational structures. However, the most important outlaw gang member (E.E.), who is active for different purposes, although he has no major position in the official hierarchical gang structure, provides a remarkable exception and others who possess a formal position do not play a central role in the communication. The identified communication structure reveals some similarities with the formal hierarchy but also significant differences. Except for the two central actors no role differentiation could be found. Human capital (specialized skills and competencies) did not play any role. These findings show that the group cannot be considered as a fully differentiated organization. As first elements of functional role differentiation can be found it may be an organization in the making. It may be noted however, that the lack of human capital provides severe obstacles for functional differentiation and organizational rationalization. On the other hand, the stability of the brand of the gang provides good chances for recovering structures after the crack-up by the police.

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References

Archer, M. (2003). *Structure, Agency, and the Internal Conversation*. Cambridge: Cambridge University Press.

Backstrom, L., Boldi, P., Rosa, M., & Ugander, J. (2012). Four Degrees of Separation. *WebSci 12. Proceedings of the 4th Annual ACM Web Science Conference*, 33–42. doi:10.1145/2380718.2380723

Baker, W., & Faulkner. R (1993). The Social Organization of Conspiracy: Illegal Networks in the Heavy Electrical Equipment Industry. *American Sociological Review 58*(6), 837–860.

Barker, T. (2014). *Outlaw Motorcycle Gangs as Organized Crime Groups*. Wiesbaden: Springer.

Berlusconi, G. (2013). Do All the Pieces Matter? Assessing the Reliability of Law Enforcement Data Sources for the Network Analysis of Wire Taps. *Global Crime, 14*(1), 61-81. doi:10.1080/17440572.2012.746940

Bjørgo, T. (2019). Preventing Organised Crime Originating From Outlaw Motorcycle Clubs. *Trends in organized crime, 22*(1), 84–122. doi:10.1007/s12117-017-9322-7

Blau, P. (1977). A Macrosociological Theory of Social Structure. *American Journal of Sociology, 83*(1), 26-54. doi:10.1086/226505

Bley, R. (2014). *Rockerkriminalität. Erste empirische Befunde*. Frankfurt/M.: Verlag für Polizeiwissenschaft.

Blockland, A., van Hout, L., van der Weest, W., & Soudijn, M. (2019). Not Your Average Biker; Criminal Careers of Members of Dutch Outlaw Motorcycle Gangs. *Trends in organized crime*, *22*(1), 10–33. doi:10.1007/s12117-017-9303-x

Bouchard, M. and Ouellet, F. (2011). Is Small Beautiful? The Link Between Risks and Size in Illegal Markets. *Global Crime*, *12*(1), 70–86. doi:10.1080/17440572.2011.548956

Bourdieu, P. (1984). *Distinction. A Critique of the Judgement of Taste*. Cambridge: Harvard University Press.

Bright, D.A., Greenhill, C., Reynolds, M., Ritter, A., & Morselli, C. (2015). The Use of Actor-Level Attributes and Centrality Measures to Identify Key Actors: A Case Study of an Australian Drug Trafficking Network. *Journal of contemporary criminal justice*, *31*(3), 262–278. doi:10.1177/1043986214553378

Campana, P., & Varese, F. (2013). Cooperation in Criminal Organizations: Kinship and Violence as Credible Commitments. *Rationality and Society*, *25*(3), 263–289. doi:10.1177/1043463113481202

Cohen, S. (1973). *Folk Devils and Moral Panics*. St Albans: Paladin.

Cressey, D.R. (1969). *Theft of the Nation: The Structure and Operations of Organized Crime in America*. New York: Harper & Row.

Cressey, D.R. (1972). *Criminal Organization: Its Elementary Forms*. New York: Harper & Row.

Dahrendorf, R. (1956). *Homo Sociologicus. Ein Versuch zu Geschichte, Bedeutung und Kritik der Kategorie der sozialen Rolle*. Opladen: Westdeutscher Verlag.

Dickie, J. (2007). *Cosa Nostra: A History of the Sicilian Mafia*. London: Hodder & Stoughton.

Diesner, J., & Carley, K. (2010). Relationale Methoden in der Erforschung, Ermittlung und Prävention von Kriminalität. In Stegbauer C, Häusling R (eds). *Handbuch Netzwerkforschung* (pp. 725–738). Wiesbaden: Springer VS. doi:10.1007/978-3-531-92575-2_64

Felson, M. (2006). *Crime and Nature*. Thousand Oaks: Sage.

Duijn, P.A.C., Kashirin, V., & Sloot, P.M.A. (2015). The Relative Ineffectiveness of Criminal Network Disruption. *Nature: Scientific reports* 4.

Erickson B (1981). Secret Societies and Social Structure. *Social Forces, 60*(1), 188–210. doi:10.1093/sf/60.1.188

Durkheim, E. (1893). *De la division du travail social: Étude sur l'organisation des sociétés supérieures*. Paris: Félix Alcan.

Enders, W., & Su, X. (2007). Rational Terrorists and Optimal Network Structure. *Journal of Conflict Resolution*, *51*(1), 33-57. doi:10.1177/0022002706296155

Flyvbjerg, B. (2006). Five Misunderstandings about Case Study Research. *Qualitative Inquiry, 12*(2), 219–245. doi:10.1177/1077800405284363

Giddens, A. (1984). *The Constitution of Society. Outline of the Theory of Structuration*. Maldon: Polity Press.

Hobbs, D. (1995). *Bad Business: Professional Crime in Modern Britain*. Oxford: Oxford University Press.

Hobbs, D. (2001). The Firm: Organizational Logic and Criminal Culture on a Shifting Terrain. *British Journal of Criminology, 41*(4), 549–560. doi:10.1093/bjc/41.4.549

Holmes, R., Tewksbury, R., & Higgins, G. (2012). *Introduction to Gangs in America*. New York: Taylor & Francis.

Jansen, D. (1999). *Einführung in die Netzwerkanalyse. Grundlagen, Methoden, Forschungsbeispiele*. Opladen: Leske & Budrich.

Klerks, P. (2001). The Network Paradigm Applied to Criminal Organizations. *Connections*, 24(3), 53-65.

Krebs, V. (2002). Mapping Networks of Terrorist Cells. *Connections*, *24*(3), 43–52.

Kühl, S. (2011). *Organisationen. Eine sehr kurze Einführung*. Wiesbaden: VS Verlag.

Crozier M., & Friedberg, E. (1979). *Macht und Organisation. Die Zwänge kollektiven Handelns*. Berlin: Äthenäum.

La Spina, A. (2005). *Mafia, legalità debole e sviluppo del Mezzogiorno*. Bologna: il Mulino.

Lamm Weisel, D. (2002). The Evolution of Street Gangs: An Examination of Form and Variation. In W.L. Reed, S.H. Decker (eds.), *Responding to gangs: evaluation and research* (pp. 26-65). Washington DC: National Institute of Justice.

Lin, N. (2001). *Social Capital. A Theory of Social Structure and Action*. Cambridge University Press, New York.

Luhmann, N. (1964). *Funktionen und Folgen formaler Organisation*. Berlin: Duncker & Humblot.

Luhmann, N. (1973). *Zweckbegriff und Systemrationalität*. Frankfurt a.M.: Suhrkamp.

Morselli, C. (2009a). *Inside Criminal Networks*. New York: Springer.

Morselli, C. (2009b). Hells Angels in Springtime. *Trends in Organized Crime, 12*(2), 145–158. doi:10.1007/s12117-009-9065-1

Morselli, C., Giguère, C., & Petit, K. (2006). The Efficiency/Security Trade-Off in Criminal Networks. *Social Networks, 29*(1), 143–153. doi:10.1016/j.socnet.2006.05.001

Morselli, C., Paquet-Clouston, M., & Provost, C. (2017). The Independent's Edge in an Illegal Drug Distribution Setting: Levitt and Venkatesh revisited. *Social Networks, 51*, 118-126. doi:10.1016/j.socnet.2017.04.003

Milgram, S. (1967). The Small World Problem. *Psychology Today*, *1*(1), 61–67.

Natarajan, M. (2000). Understanding the Structure of a Drug Trafficking Organization: A Conversational Analysis. In Natarajan, M., & Hough, M. (eds.), *Illegal Drug Markets: From Research to Prevention Policy* (pp. 273–298). Monsey, New York: Criminal Justice Press.

Natarajan, M. (2006). Understanding the Structure of a Large Heroin Trafficking Network: A Quantitative Analysis of Qualitative Data. *Journal of quantitative criminology*, *22*(2), 171–192. doi:10.1007/s10940-006-9007-x

Neumann, M., Cowley, S. (2015). Modelling Social Agency Using Diachronic Cognition: Learning From the Mafia. In Secchi, D., & Neumann, M. (Eds.), *Agent-based Simulation of Organizational Behavior. New Frontiers of Social Science Research* (pp. 289-310). New York: Springer.

Paoli, L. (2003). *Mafia Brotherhoods. Organized Crime, Italian Style*. Oxford: Oxford University Press.

Quinn, J., & Koch, D.S. (2003). The Nature of Criminality Within One-Percent Motorcycle Clubs. *Deviant Behavior, 24*(3), 281–305. doi:10.1080/01639620390117291

Reuter, P. (1983). *Disorganized Crime: The Economics of the Visible Hand*. Cambridge: MIT Press.

Rostami, A., & Mandani, H. (2019). Organizing on Two Wheels: Uncovering the Organizational Patterns of Hells Angels MC in Sweden. *Trends in Organized Crime*, *22*(1), 34–50. doi:10.1007/s12117-017-9310-y

Salt, J. (2000). Trafficking and Human Smuggling: A European Perspective. *International Migration, 38*(3), 31–56. doi:10.1111/1468-2435.00114

Salt, J., & Stein, J. (2002). Migration as a Business: The Case of Trafficking. *International Migration*, *35*(4), 467–94. doi:10.1111/1468-2435.00023

Schimank, U. (2000). *Handeln und Strukturen. Einführung in die Akteurtheoretische Soziologie*. München: Juventa.

Shaw, M. (2006). Drug Trafficking and the Developoment of Organized Crime in Post-Taliban Afghanistan. In Buddenberg, D., & Byrd, W. A. (eds.), *Afghanistan's Drug Industry: Structure, Functioning, Dynamics, and Implications for Counter-Narcotics Policy* (pp. 189–214). Vienna: United Nations Office on Drugs and Crime.

Simmel, G. (1908). *Soziologie. Untersuchung über die Formen der Vergesellschaftung*. Berlin: Duncker & Humblot.

Sparrow, M. (1991). The Application of Network Analysis to Criminal Intelligence: An Assessment of the Prospects. *Social Networks*, *13*(3), 251–274. doi:10.1016/0378-8733(91)90008-H

Van Alstyne, M. (1997). The State of Network Organization: A Survey in Three Frameworks. *Journal of Organizational Computing and Electronic Commerce*, *7*(2&3), 83–151. doi:10.1080/10919392.1997.9681069

Van Koppen, V., de Poot, C.J., Kleemans, E.R., & Nieuwbeerta, P. (2010). Criminal Trajectories in Organized Crime. *British Journal of Criminology*, *50*(1), 102–123. doi:10.1093/bjc/azp067

Varese, F. (2010). What is Organized Crime? In F. Varese (Ed.), *Organized Crime: Critical Concepts in Criminology* (pp. 1–33). London: Routledge.

von Lampe, K. (2013). Was ist organisierte Kriminalität? *Aus Politik und Zeitgeschichte*, *63*(38–39), 3-8.

von Lampe, K. (2015). Big Business: Scale of Operation, Organizational Size, and the Level of Integration Into the Legal Economy as Key Parameters for Understanding the Development of Illegal Enterprises. *Trends in Organized Crime, 18*(4), 289–310. doi:10.1007/s12117-015-9255-y

von Lampe, K. (2016). The Ties that Bind. A Taxonomy of Associational Criminal Structures. In Antonopoulos G. (ed), *Illegal Entrepreneurship, Organized Crime and Social Control* (pp. 19-35). Studies of Organized Crime, Vol. 14. Wiesbaden: Springer.

Weber, M. (1972). *Wirtschaft und Gesellschaft. Grundzüge einer verstehenden Soziologie*. Tübingen: Mohr.

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