



Changing organizational structures of jihadist networks in the Netherlands



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ABSTRACT

This paper uses Social Network Analysis to study and compare the organizational structures and division of roles of three jihadist networks in the Netherlands. It uses unique longitudinal Dutch police data covering the 2000–2013 period. This study demonstrates how the organizational structures transform from a hierarchical cell-structure with a clear division of labor to horizontal and dense networks with less clear orientation on tasks. The core member types in the jihadist movement transform from international jihad veterans with clear leadership skills to homegrown radicals with less status and often a lack of expertise.

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1. Introduction

This paper focuses on the jihadist movement in the Netherlands and analyzes unique longitudinal Dutch police data. We use Social Network Analysis (SNA) to capture changes in the organizational features of Dutch jihadist networks and their members' roles during the 2000–2013 period. SNA is ideally suited to uncover the structure, social dynamics, and members' position in a group, including illicit networks.¹ Over the last decade studies have used SNA to illuminate the organizational structures of terrorist groups.² SNA has

been used to visually map structures,³ identify key players,⁴ and uncover organizational developments over time.⁵ These studies have deepened our understanding of terrorist groups, particularly jihadist networks. The current study extends prior research by combining their objectives and discussing several concepts and approaches.

³ Stuart Koschade, "A social network analysis of Jemaah Islamiyah: The applications to counterterrorism and intelligence," *Studies in Conflict & Terrorism* 29, no.6 (2006), pp. 559–575, Shandon Harris-Hogan, "Australian Neo-Jihadist Terrorism: Mapping the Network and Cell Analysis Using Wiretap Evidence," *Studies in Conflict & Terrorism* 35, no.4 (2012), pp. 298–314.

⁴ Ami Pedahzur and Arie Perliger, "The changing nature of suicide attacks: a social network perspective," *Social Forces* 84, no.4 (2006), pp. 1987–2008, Van der Hulst, "Terroristische netwerken en intelligence," Edith Wu, Rebecca Carleton, and Garth Davies, "Discovering bin-Laden's Replacement in al-Qaeda, using Social Network Analysis: A Methodological Investigation," *Perspectives on Terrorism* 8, no.1 (2014), Roberta Belli, Joshua D. Freilich, Steven M. Chermak, and Katharine A. Boyd, "Exploring the crime-terror nexus in the United States: a social network analysis of a Hezbollah network involved in trade diversion," *Dynamics of Asymmetric Conflict* 8, no.3 (2015), pp. 263–281.

⁵ Sudhir Saxena, K. Santhanam, and Aparna Basu, "Application of social network analysis (SNA) to terrorist networks in Jammu & Kashmir," *Strategic Analysis* 28, no.1 (2004), pp. 84–101, José A. Rodríguez, "The March 11 th terrorist network: In its weakness lies its strength," Unpublished manuscript (2005), Justin Magouirk, Scott Atran, and Marc Sageman, "Connecting terrorist networks," *Studies in Conflict & Terrorism* 31, no.1 (2008), pp. 1–16, Javier Jordan, "The Evolution of the Structure of Jihadist Terrorism in Western Europe: The Case of Spain," *Studies in Conflict & Terrorism* 37, no.8 (2014), pp. 654–673. Several of the mentioned studies have combined more than one purpose.

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¹ Steve Ressler, "Social network analysis as an approach to combat terrorism: past, present, and future research," *Homeland Security Affairs* 2, no. 2 (2006), pp. 1–10.

² See e.g. Kathleen M. Carley, Ju-Sung Lee, and David Krackhardt, "Destabilizing networks," *Connections* 24, no. 3 (2002), pp. 79–92, Renée C. Van der Hulst, "Terroristische netwerken en intelligence: een sociale netwerkanalyse van de Hofstadgroep," *Tijdschrift voor Veiligheid* 8, no. 2 (2009), pp. 8–27, Eric Stollenwerk, Thomas Dörfler, and Julian Schibberges, "Taking a New Perspective: Mapping the Al Qaeda Network Through the Eyes of the UN Security Council," *Terrorism and Political Violence* ahead-of-print (2015), pp. 1–21.

Academics and policy analysts have both highlighted the need to pay attention to criminal and terrorist networks' features. The organizational structures of illicit networks are highly affected by the outcome of an *efficiency-security trade-off*. Efficiency refers to the shortest possible way of communication, which is necessary to effectively execute tasks. *Dense* and *decentralized* networks have the most suitable structure to achieve efficiency because they contain many direct communication lines among their members. Conversely, *secrecy* refers to minimal communication between members to avoid exposing the network. A suitable network structure would therefore be centralized and less dense with mainly strong ties, minimizing the level of direct information transfers and maximizing trust between and among members.⁶ In essence, the trade-off means that illicit networks need to balance the need to act collectively and the need to maintain trust and secrecy within collaborative settings to effectively withstand law enforcement interventions.⁷ Allegedly, most terrorist networks choose security over efficiency because they often aim for a one-time, significant action. These networks prefer not to rush their plans and to maximize the likelihood of their one time attack by avoiding frequent communication and maintaining a low profile.⁸ Yet, to achieve their desired aim, they cannot completely dismiss efficiency.

Many therefore conclude that the necessary balance between efficiency and security is the *compartmentalization* of networks, which is based on Granovetter's *weak-and-strong-ties* concept.⁹ Compartmentalizing the network into cohesive sub-cells with strong redundant social ties, that only have weak non-redundant social ties with other sub-cells and/or a network's core, ensures that the entire network will not be exposed if a member or sub-cell is removed by law enforcement interventions. This increases efficiency within the sub-cells, but maintains the security of the network as a whole.¹⁰ Helfstein & Wright, however, argue that this network type may not in fact be used by all terrorist networks.¹¹ This warning against hasty assumptions can be endorsed via the notion that SNA is relatively difficult to apply on illicit networks due to their covertness and fuzzy boundaries.¹² Covertness makes it difficult to determine who belongs to a network. These difficulties highlight the possibility of missing data and incorrect relations,

which can affect the quantitative SNA measures that are highly sensitive for minor adjustments.

Another important point concerns the role and position of a network's key player. It is often claimed that high actor level centrality scores classify individuals' roles. For instance, a subject is considered a *leader* when she/he has many direct contacts (high *degree centrality*), due to their centralized position.¹³ Also, a subject is considered a *broker* when she/he is on the geodesic path (shortest route) between two unrelated subjects (high *betweenness centrality*). In other words, when she connects isolated or distanced compartments within the network.¹⁴ It is often assumed that identifying these key players will result in effective strategies to disrupt the network,¹⁵ although this is disputed. Some claim that the removal of centralized actors only has a temporary effect, often caused by the network's resilience and ability to find an immediate replacement.¹⁶ In addition, the most centralized actors are not always the most important actors,¹⁷ but rather the most visible ones.¹⁸ This could be due to the distinction between social and human capital. Whereas the former reflects the amount of a person's connections, the latter displays personal qualities, such as skills and expertise.¹⁹ These qualities are difficult to capture with centrality metrics. Targeting and removing central actors may not be the silver bullet to counter-terrorism strategies.²⁰ Rather it may be necessary to assess both the actor's social and human capital by relying on centrality metrics and a qualitative analysis, to determine the actor's centralized position and his or her qualities and assets.²¹

Finally, most SNA studies only portray a static picture of clandestine networks.²² These SNA studies highlight how a particular network operates at one specific moment in time, without comparing them to networks from different periods. While focusing on a single time period is useful, it overlooks organizational differences or the transformation of group members' roles, positions, and activities.²³ Moreover, there is only limited attention paid to whether changing organizational features and roles affect each other over time. Identifying dynamic changes could aid policy makers in devising more effective counter terrorism measures.

The discussion thus far demonstrates that findings about illicit network structures and roles are interesting but should be interpreted with caution. This study therefore uses SNA to examine to what extent particular network features and assumptions apply to

⁶ Valdis E. Krebs, "Mapping networks of terrorist cells," *Connections* 24, no.3 (2002), pp. 43–52, Rodriguez, "The March 11th terrorist network," Koschade, "A social network analysis," Aili E. Malm, J. Bryan Kinney, and Nahanni R. Pollard, "Social network and distance correlates of criminal associates involved in illicit drug production," *Security Journal* 21, no.1 (2008), pp. 77–94.

⁷ Carlo Morselli, Cynthia Giguère, and Katia Petit, "The efficiency/security trade-off in criminal networks," *Social Networks* 29, no.1 (2007), p.144.

⁸ Krebs, "Mapping networks," Morselli e.a., "The efficiency/security trade-off." See also Efstathios D. Mainas, "The analysis of criminal terrorist organizations as social network structures: a quasi-experimental study," *International Journal of Police Science & Management* 14, no. 3 (2012), pp 264–282 for an empirical analysis based on police information.

⁹ Mark S. Granovetter, "The strength of weak ties," *American journal of sociology* (1973), pp. 1360–1380.

¹⁰ Wayne E. Baker and Robert R. Faulkner, "The social organization of conspiracy: Illegal networks in the heavy electrical equipment industry," *American sociological review* (1993), pp. 837–860, Julie Ayling, "Criminal organizations and resilience," *International Journal of Law, Crime and Justice* 37, no.4 (2009), pp. 182–196, Pedahzur and Perlinger, "The changing nature of suicide attacks," Jean Marie McGloin, "Policy and intervention considerations of a network analysis of street gangs," *Criminology & Public Policy* 4 (2005), pp 607–636, Xu & Chen, "The topology of dark networks," *Communication of the ACM* 51 (2008), pp 58–65.

¹¹ Scott Helfstein and Dominick Wright, "Covert or convenient? Evolution of terror attack networks," *Journal of Conflict Resolution* (2011), pp 1–29.

¹² Malcolm K. Sparrow, "The application of network analysis to criminal intelligence: An assessment of the prospects," *Social networks* 13, no.3 (1991), pp. 251–274, Morgan Burcher and Chad Whelan, "Social network analysis and small group 'dark' networks: an analysis of the London bombers and the problem of 'fuzzy' boundaries," *Global Crime* 16, no.2 (2015), pp. 104–122.

¹³ Jialun Qin, J.J. Xu, D. Hu, Marc Sageman and H. Chen, "Analyzing terrorist networks: A case study of the global salafi jihad network," *Intelligence and security informatics (Berlin/Heidelberg: Springer, 2005)*, pp. 287–304, Edith Wu, Rebecca Carleton, and Garth Davies, *Discovering bin-Laden's Replacement in al-Qaeda, using Social Network Analysis: A Methodological Investigation*, *Perspectives on Terrorism* 8, no.1 (2014), Stollenwerk e.a., "Taking a New Perspective".

¹⁴ E.g. Saxena e.a., "Application of social network analysis," Van der Hulst, "Terroristische netwerken en intelligence," Carlo Morselli, and Julie Roy, *Brokerage qualifications in ringing operations*, *Criminology* 46, no.1 (2008), pp. 71–98.

¹⁵ McGloin, "Policy and intervention considerations," Koschade, "A social network analysis," Morselli and Roy, "Brokerage qualifications".

¹⁶ Sam Mullins, "Social network analysis and counter-terrorism: measures of centrality as an investigative tool," *Behavioral Sciences of Terrorism and Political Aggression* 5, no.2 (2013), pp. 115–136, Paul AC Duijn, Victor Kashirin, and Peter MA Sloot, "The relative ineffectiveness of criminal network disruption," *Scientific reports* 4 (2014).

¹⁷ Carley e.a., "Destabilizing networks," Mullins, "Social network analysis".

¹⁸ Marilyn B. Peterson, *Applications in criminal analysis: A sourcebook* (Westport, CT: Greenwood Press, 1994).

¹⁹ Duijn, e.a., "The relative ineffectiveness".

²⁰ Helfstein & Wright, "Covert or convenient?".

²¹ Van der Hulst, "Terroristische netwerken en intelligence," p.24, Duijn, e.a., "The relative ineffectiveness," p.3.

²² Sam Mullins and Adam Dolnik, "Terrorist Networks and Small Group Psychology," *The Faces of Terrorism—Multidisciplinary Perspectives* (West Sussex: John Wiley & Sons Ltd, 2009), pp. 137–150.

²³ Mullins, "Social network analysis," Xu & Chen, "The topology of dark networks".

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