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**RE-SPATIALIZING GANGS IN THE UNITED STATES: AN ANALYSIS OF MACRO-
AND MICRO-LEVEL NETWORK STRUCTURES**

by

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ABSTRACT

RE-SPATIALIZING GANGS IN THE UNITED STATES: AN ANALYSIS OF MACRO- AND MICRO-LEVEL NETWORK STRUCTURES

Ryan J. Roberts
Old Dominion University, 2021
Director: Dr. Jesse Richman

Despite the significant contributions from location-based gang studies, the network structure of gangs beyond localized settings remains a neglected but important area of research to better understand the national security implications of gang interconnectivity. The purpose of this dissertation is to examine the network structure of gangs at the macro- and micro-level using social network analysis. At the macro-level, some gangs have formed national alliances in perpetuity with their goals and objectives. In order to study gangs at the macro-level, this research uses open-source data to construct an adjacency matrix of gang alliances and rivalries to map the relationships between gangs and analyze their network centrality across multiple metrics. The results suggest that native gangs are highly influential when compared to immigrant gangs. Some immigrant gangs, however, derive influence by “bridging” the gap between rival gangs. Mexican Drug Trafficking Organizations (MDTOs) play a similar role and feature prominently in the gang network. Moreover, removing MDTOs changes the network structure in favor of ideologically-motivated gangs over profit-oriented gangs. Critics deride macro-level approaches to studying gangs for their lack of national cohesion. In response, this research includes a micro-level analysis of gang member connections by mining Twitter data to analyze the geospatial distribution of gang members and, by proxy, gangs, using an exponential random graph model (ERGM) to test location homophily and better understand the extent to which gang members are localized. The findings show a positive correlation between location and shared

gang member connections which is conceptually consistent with the proximity principle.

According to the proximity principle, interpersonal relationships are more likely to occur in localized geographic spaces. However, gang member connections appear to be more diffuse than is captured in current location-based gang studies. This dissertation demonstrates that macro- and micro-level gang networks exist in unbounded geographic spaces where the interconnectivity of gangs transpose local issues onto the national security consciousness which challenges law and order, weakens institutions, and negatively impacts the structural integrity of the state.

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I dedicate this dissertation to the people in my life that never gave up on me. To my loving parents, Jim and Carol Roberts, whose guidance over the years taught me to persevere. Without their unwavering support, I would not be the man I am today. To my wife, Rachel Roberts, who saw to it that I remain steadfast in achieving this success. Know that you are my greatest adventure. Finally, to my brother, Kyle Roberts. I can't imagine growing up in a house without you. Never let it be underestimated what our bond means to me.

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CHAPTER 1

INTRODUCTION

In his book *The Transformation of War*, Martin van Creveld (1991) predicts the changing landscape of military combat. “In the future, war will not be waged by armies but by groups whom we call terrorists, guerrillas, bandits, and robbers” (p. 197). His claim preceded the 2001 attack on the World Trade Center that ignited the ‘global war on terror.’ Unlike previous wars where battle lines and enemy combatants were easily identifiable, the distinction between soldiers and civilians will be more obscure. The challenge to the state is confronting a more diffuse enemy that operates in multiple territories and, in some cases, involves native-born citizens carrying out attacks in their country of origin. Colonel Thomas Hammes, USMC (2004) agrees that the theater of war is changing. According to him, combatants blend into civilian populations and cultivate networked structures to pursue their goals and objectives. As a result, conflict zones are no longer confined to remote parts of the world. John Arquilla and David Ronfeldt (2001) refer to this phenomenon as netwar. “The term netwar refers to an emerging mode of conflict (and crime) at societal levels, short of traditional military warfare, in which the protagonists use network forms of organization and related doctrines, strategies, and technologies attuned to the information age” (p. 6).

William Reno (2009) points out that these networks are not isolated to the criminal underground. According to him, criminal networks have begun merging with the state apparatus. He points to Liberia, where Jewel-Howard Taylor and Adolphus “General Peanut Butter” Dolo were elected to the Senate despite serving under former warlord Charles Taylor. “Fusion regimes... combine the façade of formal state bureaucratic institutions and the trappings of international sovereignty with the control of resources in illicit markets. These regimes use their

control over both of these realms of politics to channel resources and distribute access to economic opportunities to their supporters” (p. 68). Following the Arab Spring, Michael J. Totten, David Schenker, and Hussain Abdul-Hussain (2012) highlight that fifty percent more Egyptians voted for the Muslim Brotherhood and Salafists in parliamentary elections bringing radical Islamic groups to the forefront of state politics; Bin Ladenists won a third of that vote. Other forms of fusion regimes include Iran as a state-sponsor of terrorism. Being militarily weak, Tehran uses terrorist groups as proxies to project power and achieve its strategic objectives (Byman, 2005). In North Korea, Bureau 39 was established to oversee the sale of military arms to terrorist groups to circumvent the global sanctions levied against them. Vice Foreign Minister Kim Gye-gwan went as far as issuing an ominous warning to the United States about transferring nuclear-capable weapons to terrorist groups if threatened (Chestnut, 2007). The integration of state institutions and criminal networks forms the basis of what Moisés Naím (2012) refers to as the “mafia state” where mutual exclusivity between the state and criminal organizations is indistinct.

Intrastate conflicts are on the rise, along with the proliferation of non-state violent actors. Max Roser (2019) documented that there were 488 intrastate conflicts between 2000 and 2016. Compared to the 702 reported cases during the two and a half decades following World War II, the rate at which intrastate conflict occurs is becoming more frequent. While supporting the assertions made by van Creveld and Hammes, these figures, however, insufficiently represent conflicts involving non-state violent actors. As Max Manwaring (2005) points out, the problem is that non-state violent actors are primarily defined in military terms instead of their threat to national security. This typically limits the analysis of non-state violent actors to terrorists, insurgents, or other groups actively seeking to overthrow the state. In the international studies

literature specifically, criminal groups such as mafias, cartels, and gangs are either treated as peripheral entities operating parallel to states, or their significance is altogether ignored (Friman, 2009). At the macro-level, the exclusion of criminal organizations underrepresents the prevalence and distorts the perception of the severity of non-state violent actors, dilutes analytical rigor by keeping the focus on less-developed countries where intrastate conflict and state fragility are pervasive, and treats developed countries as having immunity from intrastate conflict (domestic terrorism notwithstanding). In other words, it is intellectually misleading. Jake Adelstein (2010) demonstrates that criminal organizations can have an impact on political outcomes. When faced with the potential of anti-mob legislation, the Japanese Yakuza conspired to influence voting behavior in the 2007 and 2009 elections, which led to the removal of the Liberal Democratic Party (LDP). With the exception of 1993 and 1994, the LDP had been the primary ruling party in Japan since the end of WW-II. This is more impactful, considering that it is uncommon for voters to change their political allegiance in Japan (Ikeda, Liu, Aida, & Wilson, 2005).

Government agencies have been proactive in understanding criminal groups. They seek to make informed policy decisions through intelligence data and expert analysis to address security threats. After reviewing the necessary research conducted on the American Mafia, President Richard Nixon signed into law the Racketeer Influenced and Corrupt Organizations (RICO) Act of 1970. RICO identified organized crime as a “collective criminal enterprise” (Overton, 2008). Rather than charging an individual for committing a crime, leaving the leadership of these crime families insulated from prosecution, RICO held the entire network accountable. This included mob bosses and their business entities, both illegal and legal. Globally, the United Nations established the Convention against Transnational Organized Crime

(UNTOC) to mitigate the expansion of organized criminal groups by multilaterally attacking their profit centers in human smuggling, narcotics, firearm trafficking, and other illicit activities. There are currently 147 signatories to the Convention, which assembles states to meet "a global challenge with a global response" (United Nations, 2004, p. i). Other disciplines, such as criminal justice, provide additional source material with which to analyze organized crime. Outside the purview of law enforcement, however, criminology places less emphasis on the role of the state.

In addition to terrorists and organized crime, gangs are a third group within this criminal nexus that has failed to receive national or international recognition as a security threat. Gangs are arguably the most ubiquitous category of global criminal group, maintaining a presence in virtually every country (Covey, 2010). At the state level, the existence of gangs has either been dismissed or relegated to local authorities. In academia, criminologists have been at the forefront of gang research. Although they provide valuable insight into gangs, the criminogenic lens limits our understanding of a strategic stratum aimed at prevention, intervention, and suppression (Bjerregaard, 2015). The centrality of social disorganization theory as a causal factor of gang formation, for instance, limits the gang phenomenon to a specific context within a designated timeframe (Venkatesh, 2014). This can subsequently lead to anachronistic decision-making, limiting the efficacy of gang deterrence. Suffice it to say, the complexity and variability of gangs and their transformation requires further investigation. The purpose of this dissertation is to assess the network structure of gangs in the United States at the macro- and micro-level. At the macro-level, gangs have expanded their criminal enterprise by entering alliances with other gangs and criminal groups. Micro-level connections between gang members, on the other hand, have facilitated the geographic expansion of gangs.

Network structures, highlighted by Hammes, Arquilla and Ronfeldt, and Reno, are a prominent feature of the modern gang making this an important yet under-researched area of gang studies that can improve our understanding of gangs in the United States (Sierra-Arevalo & Papachristos, 2015). Phil Williams (2001) describes several benefits that network structures provide for criminal groups. One benefit is the “defensive structure” of the network. Networks can be divided into a core and a periphery. This division insulates both core members and flows of information. When one peripheral sector is infiltrated or disrupted, it can be discarded without adversely impacting the entire network. Williams attests, “Criminal networks compartmentalize knowledge and information, making it difficult for law enforcement to have more than localized effects on their operations” (p. 75). The internal flexibility of the network structure is another benefit that allows criminal groups to form temporary alliances. Limited cooperative agreements serve two purposes. First, once a goal or objective has been completed, the ties between groups can be severed and relationships dissolved without negatively impacting the core network, making criminal investigations more difficult. More importantly, they create synergistic effects by allowing different groups access to support structures they otherwise would not have. This includes access to information and the ability to exploit communication technologies. Encryption techniques, for example, makes detecting criminal activity more challenging for law enforcement. Third, criminal networks are not bound by geography. They can remain localized, but some expand regionally, nationally, or transnationally. Expansion is often predicated on the way the criminal organization defines its goals and objectives (Sullivan, 1997, 2001). This is especially applicable for gangs seeking to increase control of the drug market where supply chains often originate in foreign countries. A fourth benefit for criminal networks is that they can fill the interstitial space between illicit and licit economies. They can exploit the “social capital”

of relationships that connect the two to gain a competitive advantage (Burt, 2000). Williams concludes, “In sum, criminal networks provide moving and elusive targets that operate across enemy lines, infiltrating law enforcement agencies and governments, avoiding confrontation in favor of cooption and corruption. They are resilient – although not impervious – to damage and have qualities that facilitate recuperation and regeneration” (p. 82).

Where Arquilla and Ronfeldt refer to the impending conflict as netwar, Hammes, speaking in military terms, has called dealing with network structures, the fourth generation of warfare (4GW). He argues, "It uses all available networks – political, economic, social, and military – to convince the enemy's political decision-makers that their strategic goals are either unachievable or too costly for the perceived benefit... 4GW makes use of society's networks to carry on its fight... via the networks, it directly attacks the minds of enemy decision-makers to destroy the enemy's political will" (p. 208). Although Hammes references al-Qaeda and other terrorist groups at great length when describing 4GW, the same concept can be applied to gangs. Max Manwaring (2005) describes gang members as “social actors.” As a result, their network affiliations integrate licit and illicit channels such as the military and law enforcement, with which they can benefit the gang.

According to Jennifer M. Hazen and Dennis Rodgers (2014), there is currently little interdisciplinary communication on gang research despite the valuable insights that could be gained from the cross-fertilization of ideas. My research considers this point by integrating concepts from criminology and international studies. On the one hand, gang studies in criminology offer a panoply of factors and conditions related to the formation, behavior, continuity, and evolution of gangs. This ontological view is useful in explaining the existence of gangs but fails to address their impact on national security. In fact, gangs in the criminal justice

literature are often described as small, local groups of friends whose involvement in the gang is temporary (Decker & Van Winkle, 1996; Howell, 2012; McGloin, 2005; Peterson, Taylor, & Esbensen, 2004; Thrasher, 1927, 2013; Thornberry, Krohn, Lizotte, & Chard-Wierschem, 1993).

On the other hand, whether it be a direct or indirect level of analysis, central to international studies, is the state. The rise of the American Mafia and Islamic-inspired terrorism in the United States led to legislation aimed at mitigating the national threat of these two distinct criminal groups. Although gang activity continues to adversely impact the state's political, economic, and social landscape, gangs have garnered significantly less national attention. A 2011 National Gang Intelligence Center (NGIC) survey shows that gangs in the United States account for 48 - 90% of violent crime in districts across the country. From a more local perspective, in 2012, there were approximately 150,000 gang members in the city of Chicago (Hubbard, Wyman, & Chicago Crime Commission, 2012). That same year, the homicide rate was 18.5 per 100,000 people. Put another way, Chicago's homicide rate was more than double that of conflict zones like Afghanistan and Iraq. By comparison, the per capita homicide rate for Afghanistan and Iraq was 6.5 and 8.0, respectively (United Nations, 2013). Committing crime, however, is not a requirement for gang membership (Decker, Pyrooz, Sweeten, & Moule, Jr., 2014; Esbensen, Winfree, He, & Taylor, 2001; Thornberry, Krohn, Lizotte, Smith, & Tobin, 2003). Max Manwaring (2005) describes crime, violence, and instability as symptoms of gang activity where the threat of gangs is measured by the extent to which they challenge law and order, weaken institutions, and impact the structural integrity of the state. I contend that unbounded gang networks provide the foundation of the gang threat defined by Manwaring at the national level.

There are three reasons I focus my dissertation on gangs in the United States. First, gangs have a significantly longer recorded history in the United States than in other parts of the world. Although the first major study on gangs did not occur until 1927 with Fredric Thrasher's *The Gang: A Study of 1,313 Gangs in Chicago*, reported gang activity has been occurring since the late 18th century (Cannata, 2009). Over the past couple of decades, there has been a renaissance of sorts on gang research as publications have more than doubled (Pyrooz & Mitchell, 2015). However, global data on gangs is scarce (Covey, 2010). Second, the history of gangs in the United States provides an extensive timeline to comparatively analyze gangs, a segment of gang research that Brenda C. Coughlin and Sudhir Alladi Venkatesh (2003) argue needs to be developed further. Finally, the United States is considered an exporter of gang culture. It is common for gangs in other countries to adopt U.S. gang culture in name, appearance, and identity (Valenzuela, 1988; van Gemert, 2005). One of the drivers behind the exportation of gang culture is rap music. The rap genre romanticizes the 'gang,' using lyrics that resonate with groups and individuals facing abject conditions (Hagedorn, 2005). In Sierra Leone and Guadalcanal, there are militia groups and gangs inspired by deceased American rapper Tupac Shakur (Utas, 2014). They borrow names from the lyrics of his songs or adopt other monikers like the West Side Boys and Tupac Outlaws. For other groups, Tupac t-shirts are worn as uniforms in places like the Democratic Republic of the Congo and Ivory Coast. Gangs in Paris, France, are beginning to resemble the gangs of Los Angeles, California (Kroeker & Haut, 1995). Moreover, the Eurogang Paradox reinforces this association between U.S. gang culture and global gangs. In Europe, if gangs do not conform to Hollywood archetypes represented in such films as *Boyz n' the Hood* or *Menace II Society*, then authorities deny their existence (Klein, 1996; Klein, Kerner,

Waxson, & Wietekamp, 2001). Although my research focuses on gangs in the United States, the concepts I use can be applied globally.

In the next chapter, I conduct a longitudinal analysis to discuss the history and transformation of gangs. This approach, proposed by Coughlin and Venkatesh (2003), seeks to improve our understanding of modern gangs by comparing them to past gangs. How have gangs changed, and what distinctions can be made between gangs from different time periods? While there were similar factors across the United States that contributed to the gang phenomenon, there were other, but ultimately inconsequential, regional constraints that mitigated gang formation (Howell, 2015). Because documented gang activity occurred disproportionately across the United States, I borrow from James Howell (2015) in explaining gang emergence through a regional context starting in the Northeast in the 1780s and ending in the South in the 1970s. In addition to providing background information on gangs, I make two important observations of the modern gang compared to historic gangs. One is the market-orientation of gangs after “hard drugs” were introduced in the 1970s and 1980s that made gang participation more economically lucrative (Block & Block, 1993; Coughlin & Venkatesh, 2003; Fagan, 1993; Hagedorn, 1994). The other is the organization of gangs into network structures to facilitate unmitigated criminal activity across geographic spaces.

Despite the long history of gangs in the United States, there is no universally accepted gang definition. In Chapter 3, I provide background on this debate. Some definitions can be too broad and include groups not typically associated with gang activity such as fraternities or other social organizations. Other definitions can be too narrow and neglect important details of the ‘gang.’ One such controversy is whether to include input from law enforcement agencies leading to what John Hagedorn (1988) refers to as “courthouse criminologists.” Moreover, I differentiate

gangs from terrorist and organized crime groups. Generally speaking, terrorists are ideologically motivated to invoke political change, organized crime is motivated by profits to acquire power and influence, and gangs are territorially motivated to achieve profits. Unlike terrorists who target civilian populations as their *modus operandi*, organized crime and gangs are less likely to carry out violence against civilians. This helps them avoid detection from law enforcement and maximize profits by selling illicit goods to the community.

Additionally, terrorists are more likely to directly attack the state while organized crime and gangs prefer to avoid confrontation (Malone & Malone-Rowe, 2014). Although there remain some distinction between criminal groups, gangs are more nuanced than is covered by current definitions. Rather than taking a position on this debate, I argue that considering gang typologies can provide additional context towards a more robust gang definition. They can be sub-divided by generation and culture. According to John P. Sullivan (1997, 2001, 2006; see also Sullivan & Bunker, 2007), there are three generations of gangs. The most basic is first-generation (1-G) gangs. “*First-generation* (turf) gangs are limited in political scope, are localized (often by city blocks), and are not highly sophisticated” (Sullivan, 2001, p. 103). Second- (2-G) and third-generation (3-G) gangs, on the other hand, involve institutionalized gangs that aggressively seek to control the drug market and are politically motivated, respectively. According to Julie Ayling (2011), “When a gang evolves into a fixture in a community, it can be regarded as institutionalized. Participation in the underground economy and gang subculture becomes “normal” for its members; the presence of the gang is regarded as part and parcel of community life by residents” (p. 7). Whereas 1-G gangs are temporary as members leave to pursue careers and raise families, 2-G and 3-G gangs are more permanent. Ayling argues that most gangs involve loose connections among friends but acknowledges the national security implications of

those gangs that emerge to become a criminal enterprise. These typically include 2-G and 3-G gangs. Cultural gangs include street, prison, and Outlaw Motorcycle Gangs (OMGs). Whereas street and prison gangs are defined in terms of origin (neighborhood and the prison system, respectively), OMGs are considered nomadic gangs where territory is transactional, and operating a motorcycle is required for membership. Within generational and cultural typologies, I discuss the alliances and rivalries between some of the largest gangs in the United States, laying the foundation for Chapter 4.

In distinguishing gangs from other criminal organizations, Scott Decker and David Pyrooz (2011) suggest organizational structure as a mitigating factor. Membership, consisting primarily of a young demographic, reflects a lack of leadership and temporary affiliation uncommon in organized crime and terrorist groups. Therefore, the influence of gangs is contained within a local radius, a place that has meaning to the gang's identity, and whose goals have "symbolic" ends. Since networked structures are prevalent to the modern gang on a larger scale compared to the localization of historic gangs, I focus Chapter 4 on the relationships between national gangs. I borrow the framework used in the Big Allied and Dangerous (BAAD) dataset that uses network analysis to map the largest terrorist organizations in the Middle East. Despite the theoretical application of social network analysis to study gangs, current research neglects the national interconnectedness of different gang types. Network structures have re-spatialized the relationships of the modern gang more than any other point in history, allowing gangs broader influence over the political, economic, and social landscape of the United States. This has led to greater coordination between gangs, increased cohesion within the gang, changed the identity of some gangs, and has provided access to previously unavailable resources and

know-how. The result of which challenges law and order, weakens institutions, and undermines the structural integrity of the state at a national-level.

In Chapter 4, I examine macro-level gang connections using social network analysis. Jennifer Xu and Hsinchun Chen (2005) highlight the importance of using this methodology, “Effective use of SNA techniques to mine criminal network data can have important implications for crime investigations. The knowledge gained may aid law enforcement agencies fighting crime proactively” (p. 106). Michael Sierra-Arevalo and Andrew Papachristos (2015) reinforce Xu and Chen by arguing that gang studies can benefit from the application of social network analysis, but currently lags behind other disciplines. I use my training as a security threat group intelligence officer for the North Carolina prison system and various secondary data sources to create an adjacency matrix to show the relationship between gangs in an undirected graph. In total, I consider 126 nodes with 638 edges connecting the positive (ally) and negative (rival) ties between the different gang types. Additionally, I include Mexican Drug Trafficking Organizations (DTOs) in the graph because intelligence data has shown these organizations feature prominently in the gang network (NGIC, 2011).

While some studies have focused on local gangs within a specific city (McGloin, 2005) or the relationships within a gang (Fox, 2013), I aim to answer several macro-level questions regarding the gang network structure. In general, what does the structure of the gang network look like? How are gangs clustered? Which gangs are central, bridges, or isolates? How central are Mexican DTOs to the gang network? Mara-Salvatrucha, better known as MS-13, continues to be headlined in public discourses regarding immigration. Are gangs formed by immigrants more, less, or equally influential to the gang network than gangs formed by native groups? I answer these questions by constructing three separate graphs and calculating five common centrality

measures to investigate the network influence of gangs. One graph I use is a baseline model that includes gangs and Mexican DTOs but does not distinguish the relationship between allies and rivals. The other two graphs establish the relationships between gangs by identifying their connection as an alliance or rivalry. I label these graphs as gang nexus model 1, which includes gangs and Mexican DTOs, and gang nexus model 2, where I remove Mexican DTOs from the graph. Out of the three graphs, gang nexus model 1 is the best representation of the world as it currently exists. I compare the baseline model to this model to determine how the relationships between gangs impact the network structure. Similarly, I compare gang nexus model 2 to gang nexus model 1 to determine the extent to which Mexican DTOs influence the network structure of gangs. I calculate five common network centrality measures to determine a gang's network influence and compare the results of each model. They include degree, closeness, betweenness, and eigenvector centrality, and PageRank, a branch of eigenvector centrality. Because each metric provides a different perspective in determining network centrality, and their scores are scaled differently, I use the average Z-score as another method to analyze the gang network structure. The Z-score generates a standardized metric describing a value's relationship to the mean of a group of values, allowing comparison between different centrality measures.

One criticism in using social network analysis to examine gangs at the macro-level is that gangs, with their decentralized leadership, lack national cohesion. James Howell (2012) argues that the extent to which gangs are connected throughout the country is limited to their namesake. Although they share a similar gang identity, Bloods in Los Angeles operate independently from Bloods in New York. Therefore, gang objectives, alliances, and rivalries are thought to be a manifestation of local conditions. Chapter 5 acts as an extension of Chapter 4 in that I conduct a social network analysis of individual gang members at the micro-level. I collect data using a

workflow process similar to Swati Agarwal and Ashish Sureka (2016) (See also Agarwal & Sureka, 2015), who detect extremist communities on Tumblr. Instead of using Tumblr, the data source I use in this chapter comes from Twitter.

In constructing the micro-level gang network, I use a four-step process. First, I detect gang members by capturing Twitter streaming API using a combination of words and phrases common to gang culture. Cocaine, for instance, is sometimes referred to as “Aunt Nora” or “yayo.” I also consider words and phrases that are gang specific. “Five in the sky, six must die,” for example, is a common phrase used by the People Nation to indicate revenge. Two other methods I use to detect gang members include using the Twitter search function and following Twitter profile recommendations. The second step involves manually validating that the Twitter users I detected in the first step are gang members and identifying the gang they belong to. I use a set of established criteria such as self-admission, gang colors, gang signs, and other symbols affiliated with gang culture to make this determination. After collecting several initial seeds in step 2, I use a snowball sampling approach to continue my discovery process by inspecting their list of *followers*. In the final step, I construct the graph of social connections between gang members. Throughout this process, I also document the location of gang members by city, state, and country.

Other relevant research has been conducted by Lakshika Balasuriya et al. (2016) to detect and analyze Twitter language and the use of emojis between gang and non-gang members. More relevant to this chapter is the work conducted by Sanjaya Wijeratne et al. (2015) that identified gang member connections in ten neighborhoods in Chicago. Another important study relevant to this chapter involves the use of Twitter to analyze the digital footprint of sex trafficking along the U.S.-Mexico border. Julian Way and Robert Muggah (2016) inadvertently discovered the

existence of a transnational human smuggling network extending from Central and South America to major cities throughout the United States. My research differs in that I attempt to study the extent to which gangs are localized. According to the proximity principle, localized interaction leads to a greater likelihood of forming interpersonal relationships (Newcomb, 1960). I examine the micro-level gang network using an exponential random graph model (ERGM) to test the location homophily of gang member connections. If the consensus on gang localization holds, then one would expect to see a high correlation between gang member location and their connection to other gang members. In other words, the structure of the micro-level gang network would cluster around singular locations as opposed to multiple locations. I test four models and hypotheses that consider nodal attributes of city, state, and gang affiliation, and an edge attribute using the distance (miles) between nodes.

In the final chapter, I discuss the implications of this dissertation. Gangs do not exist as a monolith of the criminal landscape, but differ in their level of complexity and sophistication. Although some gangs remain localized, others function in unbounded geographic spaces. At the macro- and micro-levels, gang networks transpose local gang security threats onto the national consciousness. Studying the network structure of gangs provides an empirical-analytic tool to examine the extent to which gangs challenge law and order, weaken institutions, and impact the structural integrity of the state.

CHAPTER 2

HISTORY, TRANSFORMATION, AND THE THREAT OF GANGS

Some of the earliest recorded gang activity in U.S. history can be traced to the 19th century. The Five Points, for instance, produced some of the bloodiest conflicts among rival gangs in New York City. One of the more infamous gangs to have emerged in this area, The Five Points Gang, was composed of Italian immigrants and launched the careers of Charles “Lucky” Luciano, patriarch to the Genovese crime family, and Al Capone, who later established the Chicago Outfit. Both men played an important role in establishing the American Mafia. In the Southwestern region of the United States, William H. Bonney, better known as Billy the Kid and leader of The Rustlers, followed a markedly different path than The Five Points Gang. Rather than forming along ethnic lines, The Rustlers were a gang of cattle rustlers and thieves that took part in the Lincoln County War. Following the deaths of their core members, The Rustlers disbanded in 1880.

At first glance, it seems apparent that manifestations of ‘the gang’ are rooted in local conditions. Negative environmental stimuli push individuals and groups onto trajectories that allow them to best satisfy their wants and needs. While most people remain law-abiding citizens, others resort to crime or choose to join gangs. Once formed, however, the gang becomes a stressor within the community, which changes the dynamic of the local landscape. Although there is evidence to demonstrate that gangs vary across space and time, gangs have gone through a series of transformative phases, contributing to a functional equivalence of behavior that has culminated in the modern gang. For example, violence remains the gang *modus operandi*, but stealing cattle has become a nonextant criminal activity among gangs. This chapter involves a longitudinal comparison of historic and modern gangs in the United States by analyzing the

history and transformation of gangs. According to Brenda C. Coughlin and Sudhir Alladi Venkatesh (2003), the longitudinal comparison of gangs is an under-researched topic that can improve our understanding of the gang phenomenon. Specifically, how have gangs changed over time, and what sets modern gangs apart from other historical variations? One misconception in gang studies is the perception that gangs are limited in both scale and scope, which supports a consensus that they are localized actors motivated by territory (Venkatesh, 2000). Upon further review, however, there are two main distinctions of the modern gang. Coughlin and Venkatesh explain, after 1970, the commercialization of narcotics such as cocaine and heroin changed the motivation of gangs from territory to a market-orientation, which inadvertently led to changes in the structural organization of some gangs. Additionally, the network structure of gangs has become more sophisticated. The connectivity of gangs has re-spatialized their relationships with other gangs and criminal organizations, has contributed to the hybridization of some gangs through the integration of extremist ideologies (Anti-Defamation League, 2016), and has allowed gang members to infiltrate state institutions (Eyler, 2009). I contend that both attributes of the modern gang challenge the location-based gang perspective and situate them onto the national security consciousness.

Despite the existence of gangs early in American history, the first gang study was not conducted until 1927. Frederic M. Thrasher's *The Gang: A Study of 1,313 Gangs in Chicago* focused on immigrant groups. He explains, "The Gang... is one manifestation of the disorganization incident to the cultural conflict among diverse nations and races gathered in one place and themselves in contact with a civilization foreign and largely inimical to them" (p. 220). Since his important contribution to the field, the gang phenomenon has become more complex. While racial and ethnic divisions continue to play a major role in the formation and cohesion of

gangs, other environmental factors have emerged that influence an individual's preference to join or remain in a gang. The method of conceptualizing gangs, however, has remained stagnant. For instance, the term 'gang' is often used synonymously with 'youth' or 'juvenile' group. Gang members are considered young, their time in the gang short, and their influence localized, typically not extending beyond a street corner or neighborhood (Decker & Van Winkle, 1996; Howell, 2012; McGloin, 2005; Peterson, Taylor, & Esbensen, 2004; Thrasher, 1927, 2013; Thornberry, Krohn, Lizotte, & Chard-Wierschem, 1993). A longitudinal comparison provides a means to critically analyze the origins and transformation of gangs. The average age of gang members, for example, has increased over time, making the current demographic description anachronistic.

This chapter argues that two developments separate historical gangs from the modern gang. One is the economic orientation of gangs, and the other involves network structures. When cocaine and heroin became popularized in the 1970s and 1980s, for example, this created more lucrative market opportunities for gangs and their members (Coughlin & Venkatesh, 2003). Since then, other "hard drugs" such as crystal meth, ecstasy, and fentanyl have flooded the market. Additionally, innovations in narcotics have made detection more difficult, which has increased the accessibility of illicit drugs. K2 spice, or synthetic marijuana, marijuana wax, and suboxone, for instance, are increasingly being smuggled into prisons across the country due to their inconspicuous appearance. The diversification of narcotics and ease at which they can be obtained has changed the cost-calculus of gang participation by incentivizing the longevity of an individual's membership (Drug Enforcement Agency, 2018; National Gang Intelligence Center (NGIC), 2011, 2013, 2015). As I will demonstrate using intelligence data released by the Federal Bureau of Investigations, there is a positive correlation between the economic benefits of

narcotics and gang activity. Chiefly, the proliferation of gangs and the number of active gang members after the introduction of cocaine. Individuals are maintaining their gang affiliation for extended periods of time, as evidenced by an increase in the number of adult gang members (Curry & Pyrooz, 2014).

The other difference between historical gangs and the modern gang is the network structures that connect gangs to other gangs, gangs to criminal organizations, has led to the integration of extremist ideologies and the hybridization of gangs, and has allowed gangs to benefit from participating in state institutions while, at the same time, contributing to the delegitimization of these institutions. Especially those that are responsible for security and public safety. It is crucial to understand the extent to which network structures make gangs more sophisticated and dangerous today than they have been in the past. Advances in communication technologies have enabled the rapid exchange of information across long distances allowing coordination at the local, state, national, and international levels. Not only can gangs and their members coordinate long distances, but modern technology facilitates the exchange of ideas that can be used to influence others. This strategy is commonly used by terrorist organizations such as ISIS and al-Qaeda to recruit new members and disseminate their ideology (Silber & Bhatt, 2007).

The purpose of this chapter not only illustrates how gangs have changed over time, but it is meant to provide the reader background on the institutionalization of gangs in the United States. The first section, explains gang formation from the perspective of environmental conditions and the subsequent preferences and choices that contribute to an individual's decision to join a gang. Being subjected to similar conditions can generate different outcomes. Although certain conditions can increase the likelihood of gang participation, the decision to join a gang or

not ultimately lies in the agency of the individual. Agency is a concept often neglected when discussing why people join gangs. Urban areas across the country have become synonymous with gang activity. Los Angeles, for example, is considered the gang capital of the United States (Los Angeles Police Department, 2019). However, it would be impractical to assume that all Angelenos belong to a gang.

In the second section of this paper, I borrow from James C. Howell (2015) to discuss the history and transformation of gangs. He describes gang formation as proliferating disproportionately across the Eastern, Western, Midwestern, and Southern regions of the United States in a non-linear pattern. Although he falls short of a direct comparison between gangs, I expand on Howell's work by highlighting the similarities and differences between historical manifestations of the gang and the modern gang. Most notably, the economic incentives of gang participation and their increased connectivity. The final section outlines the contemporary gang landscape. In this section, I show how the modern gang is more dangerous than historic gangs by challenging the location-based approach to address gangs. I include additional information from the NGIC and FBI that highlights the economic, political, and social impact of gangs.

2.1 Theories on Gang Participation

Despite their propensity for violence and crime, gangs continue to recruit new members successfully. It can be inferred by the geospatial distribution of gang activity, that the number of gangs and gang members is higher today than they were in the 18th and 19th centuries. Once considered an urban phenomenon, this delineation has become obscure as gangs continue to expand into suburban and rural communities (Office of Juvenile Justice and Delinquency Prevention, 1997). In areas where gangs are new, small-scale operations can have a significant impact (Weisheit & Wells, 2001). More broadly, gangs did not begin to appear in the Southern region of the United States until the 1970s (Howell, 2015).

Environmental conditions and individual preferences can explain theories on gang participation. Although one can reinforce the other, it is helpful to analyze each category in isolation to better understand the extent to which categorical factors impact an individual's decision to join a gang, given the range of other available alternatives. If someone joins a gang for economic reasons, why not get a job instead? If someone joins a gang for protection, why not take legal action to remove the threat? One field of study that has extensively searched for answers to these questions and others is criminology. Being a criminal is not a requirement for joining a gang, however, being a gang member exposes people to a criminal culture that can influence their behavior (Bernburg, Krohn, & Rivera, 2006). In fact, gang members commit crimes, especially violent crimes, at a disproportionately higher rate than non-gang members (U.S. Department of Justice, 2018). Within the criminology literature, there are significant parallels between the study of crime and gang participation. For this reason, I turn to criminogenic theories to explain how environmental factors condition individual preferences for gang participation. These include theories on social disorganization, differential association/social learning, general strain theory, environmental/routine activity, and race-relations in criminology.

Social disorganization theory is one of the most fundamental concepts regarding the impact of the environment on criminal behavior. The basis for this theory falls under the umbrella of "'neighborhood-effects' research, where a neighborhood effect is defined as an emergent property of neighborhoods, net of neighborhood differences in population composition (that) has its roots in early Chicago school theorizing on the influence of urban environments, but it stresses the social processes or mechanisms that act as engines for *how* neighborhoods influence a given phenomenon or behavior" (Papachristos & Kirk, 2006, p. 67). According to

social disorganization theory, “Disorganized communities cause crime because informal social controls break down and criminal cultures emerge. They lack the “collective efficacy” to fight crime and disorder” (Cullen, Agnew, & Wilcox, 2014, p. 6). When applied to gang membership, Sudhir Alladi Venkatesh (1997) expands on social disorganization theory using the cluster concept posited by Giovanni Sartori (1969). “Specifically, the gang partially fills the void left by other community-based institutions. *Adaptation* is the central trope... for underclass researchers to explain a range of phenomena: for example, the gang can be a substitute for poorly functioning familial structures; its value orientation offers a moral chart for those youths excluded from mainstream cultural systems” (p. 89). In other words, a weakening of the institutions responsible for mitigating deviant behavior within the community increases the likelihood of gang participation. Geoffrey Hodgson (2006) defines institutions as “durable systems of established and embedded social rules that structure social interactions... In short, institutions are social-rule systems” (p. 13). Gangs can exploit dysfunction within this system of social controls (e.g., family, education, and legal), typically found in poor neighborhoods. Once established, the gang provides an outlet for the disenfranchised and exacerbates the establishment of control structures for future generations. Whether out of fear, or some other negative stimuli, informal control mechanisms devolve under the presence of gangs (Anderson, 1999; Lane & Meeker 2003; Skogan 1990). Further, formal controls suffer as policing these areas becomes increasingly difficult. “Spotters” alert gang members to the presence of police units and witnesses to gang activity are often reluctant to assist with criminal investigations (Miethe & McCorkle, 1997).

Another theoretical framework to consider when explaining gang participation is environmental/routine activity. The theory on routine activity incorporates probability theory and

possesses three fundamental characteristics that Lawrence Cohen and Marcus Felson (2014) refer to as ‘direct-contact predatory violations’; an offender, a target, and the absence of protection. Accordingly, the higher the frequency of exposure to criminal elements in the neighborhood, the more likely is victimization. Considering the predatory nature of gangs, and their predisposition towards criminal activity, the applicability of this criminogenic theory makes sense when explaining gang participation. You can either remain a victim, alter your behavior (e.g., stay indoors more often), join a gang, or form your own gang. Whereas social disorganization theory treats the environment as capable of mitigating deviant behavior under normal conditions, routine activity identifies criteria for victimization.

One group that immediately comes to mind when thinking about direct-contact predatory violations are migrants. Migration occurs both within and between state borders. An important factor that has been identified in the cost-calculus of migrating involves economic circumstance. When the cost of remaining in place exceeds the benefit of seeking economic opportunity elsewhere, people migrate (Martin, 2015). Migration leads to another urban-centric explanation of gang participation, like social disorganization theory. If, for instance, the motivation to migrate is job availability, then migrants are likely to settle in areas recognized for a high capacity of industry and commerce. These tend to be larger cities such as Los Angeles, New York, and Chicago, to name a few. The movement of people becomes increasingly problematic when mass migration creates a labor surplus leaving a significant percentage of the population in a concentrated area unemployed, making direct-contact predatory violations more acute. Under these conditions outlined by Cohen and Felson, migrants represent a vulnerable group of people. They provide gangs an ample supply of victims, recruits, and, in some cases, challengers.

Sonja Wolf (2012) provides insight into how environmental/routine activity led to the formation of Mara Salvatrucha (MS-13) in the 1980s. Salvadoran migrants, escaping the civil war in their home country, fled to the United States for asylum (some legally, others illegally). Arriving with limited means, they settled in the Los Angeles area but were soon victimized by some of the established gangs. Chiefly, the Bloods and the Crips. MS-13 formed in response to this threat and increased its membership as more Salvadorans migrated to the area. Similarly, in the 1970s, the Cambodian genocide carried out by Pol Pot and the Khmer Rouge, caused a mass exodus from the country. As Cambodian immigrants arrived in the United States, they experienced similar outgroup pressures from U.S. gangs as Salvadoran immigrants. In response to the threat, Cambodian refugees formed the Tiny Rascal Gang (TRG), currently the largest Asian gang in America. I elaborate on MS-13 and the TRG in Chapter 3 when I provide a more in-depth discussion on gang-specific origins.

While the absence of social controls can contribute to gang participation, social disorganization theory is predicated on the ethnography of single urban neighborhoods in Chicago (Papachristos & Kirk, 2006). Similarly, one of the assumptions of environmental/routine activity is that the living conditions within a neighborhood facilitate crime, another indication of an urban-centric bias when explaining why people join gangs. As a result, the core propositions of these theories fail to explain gangs in rural and suburban settings. Two theories that better account for cultural gaps between geographic areas include differential association/social learning and anomie/general strain theory. Both theories emphasize decision-making as a reflection of socially constructed preferences. The former theory posits that criminal behavior, or gang participation, is learned through social interaction (Sutherland & Cressey, 2014). As the adage goes, “birds of a feather flock together.” People tend to seek out and

associate with others that share their values and interests (Tajfel & Turner, 2004). Additionally, the higher the social interactions with an individual or group, the more convergent interests become (Vigil, 2004). Most gangs, at least during their inception, begin as a group of closely-knit friends whose interests align (Ayling, 2011). General strain theory, on the other hand, describes gang participation as consequential to the barriers of achieving socially constructed goals. Speaking in criminogenic terms, Francis Cullen, Robert Agnew, and Pamela Wilcox (2014) summarize the central thesis of this theory, “When individuals cannot obtain success goals, (e.g., money or social status), they experience strain or pressure... The strains... may be linked to goal blockage (or deprivation of valued stimuli) but also to the presentation of noxious stimuli and the taking away of valued stimuli” (p. 7). Income, protection, social status, and group acceptance are some commonly identified reasons for joining a gang. “Goal blockage” or “noxious stimuli” impede an individual’s ability to achieve one or more of these goals satisfactorily. The magnitude of stressors from the perspective of an individual contributes to their decision to join a gang rather than achieving goals through other available means. While the environment, as described by social disorganization theory, can exacerbate these stressors, general strain theory focuses on an individual’s interpretation given the context of their circumstances and how they set and prioritize their goals. Thus, what they cannot achieve on their own, they can do so by proxy of the gang.

Finally, along the spectrum of individual preference are criminogenic theories on race relations. Crime is “due to unique structural conditions (e.g., concentrated disadvantage, living in isolated and segregated neighborhoods) and to cultural beliefs rooted in those conditions... Among some... racial discrimination might also be an added criminogenic risk factor” (Cullen, Agnew, & Wilcox, 2014, p. 9). Whether clustering is the result of easily identifiable physical

traits, cognitive similarities, shared experiences, and worldview, or the historical context of a specific time period, race and ethnicity can be tied to the origin of most gangs. White supremacist gangs, for instance, are typically rooted in Nazism. By borrowing the symbols, values, and ideals espoused by Adolf Hitler, racially motivated attacks manifest in 'othering.' Specifically, that non-whites are inferior and disposable. In gangs where racial division remains part and parcel to the group's *modus operandi*, racial/ethnic divisions continue to factor prominently in gang membership.

On the whole, the transformation of gangs has made them more inclusive. Ethnicity is not as useful in understanding American gangs as it once was (Johnson, Webster, & Conners, 1995). One of the criteria for joining MS-13 used to require members be from El Salvador. Now they accept members of various Hispanic origins such as Honduras, Guatemala, and Mexico. Scott Decker and David Pyrooz (2011) add, "Theories explaining gang emergence do not translate fluidly to explaining gang membership" (p. 153). The Folk Nation, one of the largest gangs in the United States, began as an African American gang. Their alliance now includes gangs whose members are White and Hispanic. Similarly, the Crips, a splinter group of the Black Panther Party, originated as an African American gang, but currently allow membership from Pacific Islanders such as the Sons of Samoa and the Tonga Crips.

Although there is merit to the impact of environmental conditions and the social construction of individual preferences on gang participation, there is a significant weakness to both approaches. Chiefly, the role of agency in the decision-making process. Richard Maclure and Melvin Sotelo (2004) summarize the concept of 'structured individualization' introduced by Peter Rudd and Karen Evans (1998):

Accordingly, while the life chances of young people are strongly affected by factors of the local environment and by dominant ideological, political, and socio-economic forces,

it is nonetheless important not to forget the individualized aspects of youth development and decision-making. Whatever their circumstances, young people interpret their experiences and strive to make sense of the influences that affect them in unique ways. Where opportunities are limited or non-existent, they will often endeavor to establish social groupings and undertake collective actions that compensate for lack of resources and environmental support. (p. 420)

Determining how an individual interprets their experiences, and mobilizes is difficult for researchers to test. In that regard, theories on environmental conditions and socially constructed preferences facilitate a more straightforward method of analysis. Another approach, however, is to analyze the interaction of different theories. James Diego Vigil (1999, 2002, 2003) uses a dynamic approach to explain gang participation with his multiple marginality theory. Rather than a single factor, Vigil posits that there is a connection between the explanatory risk factors that contribute to the marginalization of individuals, making them susceptible to join a gang. These factors are often indistinguishable. In low-income neighborhoods, for instance, conditions of poverty, unemployment, and single-family households are all present. As individuals seek out alternatives to improve their circumstances, the viability of gang participation satisfies the multiplicity of adverse conditions facing the individual. Like social disorganization theory, gang norms replace weakened social controls aimed at mitigating deviant behavior.

James C. Howell (2015) uses a more process-oriented approach to explain gang formation and the subsequent participation of its members. He clusters different factors into five phases. In the first phase, there is social disorganization due to a combination of migrant concentration, residential instability, and concentrated disadvantage. Phase two involves a weakening of the neighborhood, family, and subsequent social controls. Similar to Vigil's multiple marginality theory, the characteristics of the second phase include low neighborhood control, family disorganization, youth alienation, and racial-ethnic conflicts. Under the conditions of the first two phases, youth subculture and gangs begin to emerge. This third phase,

influenced by gangsta rap, includes the formation of conflict groups and youth gangs. Phase four involves various facilitators that strengthen the gang as a unit. These include large-scale public housing, prison population growth, economic restructuring, and guns and drug trafficking. The fifth and final phase sees the transformation of gangs and the embeddedness of the individual's role in the gang. Street gangs and prison gangs emerge after achieving phase five. Moreover, this involves the institutionalization of gangs and their permanence in the community. The gang offers an alternative for those who are displaced, an observation that supports similar conclusions made by Thrasher (1927). Once established, gangs not only compete for control with other gangs, but they contend with the state for the right to continue establishing and enforcing the rules. This conflict leads to a further deterioration of local conditions as gangs solidify their position.

2.2 History and Transformation of Gangs

A longitudinal analysis can improve our understanding of gangs by observing how gangs have changed over time. These changes can be descriptive (the characteristics of the gang and its members), functional (how gangs organize and operate), or transactional (how gangs interact in society to achieve their goals and objectives). This separation helps to conceptualize gangs within a contemporary context rather than relying on outdated constructs of the gang phenomenon. Brenda Coughlin and Sudhir Alladi Venkatesh (2003) explains, “Since its inception, street-gang research has been wed to the notion that gangs are highly local actors motivated by the need to protect territory and claim turf. This location-based perspective remains at the core of much research, despite evidence that local gangs have nonlocal members and that gangs migrate and/or expand into new territories” (p. 56).¹ The characteristics with which gangs

¹ This quote is a summary taken from *American Project: The Rise and Fall of a Modern Ghetto* by Sudhir Alladi Venkatesh (2000).

are described is one way researchers localize gangs. For example, 'youth' is a common demographic descriptor used in gang definitions (I provide a thorough discussion on defining gangs in the next chapter). Therefore, it can be inferred that the age of a gang member determines the extent of their mobility where younger individuals are more restricted to local geographic spaces. The use of 'youth gang,' however, is misleading as data from the National Gang Intelligence Center (2012) shows 65% of gang members in 2011 were 18 years of age or older. According to this survey, the percentage of adults to youths is steadily increasing. Approximately three out of every five gang members is an adult, an increase of 15% from 1996 when the ratio of adult to youth gang members was 1:1.

Gangs have emerged disproportionately across space and time. Most scholars attribute economic conditions to the growth of gangs (Decker, van Gemert, & Pyrooz, 2009). Other scholars point to abrupt social change. G. David Curry and Scott Decker (2002) identify the 1890s, 1920s, 1960s and 1990s as four significant periods of gang growth. Although stopping short of comparing gangs throughout U.S. history, James Howell (2015) presents a detailed description of their history and transformation. Like Curry and Decker, Howell ascribes gang growth to social and economic transition in the country at various points in time. His approach differs in that he recognizes the culmination of factors that led to the non-linear regional emergence of the modern gang.

Howell begins in the Northeastern region with an emphasis on New York City. For Howell, unlike Curry and Decker, the first period of gang activity occurred between 1783 and the 1860s. Mass migration from Europe exceeded the city's ability to accommodate the substantial increase in population (Anbinder, 2001). The influx of people, which incapacitated the city, led to a concentrated disadvantage. "The isolation and marginalization of very poor

immigrants in the rapidly growing New York City prompted them to establish a small secure area where group control of resources and spaces could provide a buffer against the uncertainty, chaos, and dangerousness of many city streets” (Howell, 2015, p. 2). During this time, two of the earliest gangs in the United States appeared, the Forty Thieves and Kerryonians. Both gangs were formed by Irish immigrants. Gang formation in Boston and Philadelphia followed a similar path as New York.

The second phase of gang growth occurred between the 1860s and 1930s. Two events during this period inadvertently resulted in gang consolidation. The first was the Civil War draft riots that began in New York and spread to Cleveland, Pittsburgh, and Baltimore. The violence of these riots targeted both the city and the Black population living within the city. The aftermath of the draft riots resulted in the absorption of smaller gangs. Additionally, there was a shift in the ethnicity of gangs. The decrease in European immigrants and the successful assimilation of the previous generations reduced the number of ethnically white recruits. As a result, the ‘gang’ began to disintegrate and was replaced by violent youth groups (Sante, 1991).

The third and final period of gang growth in the Northeastern region of the United States, described by Howell, took place between the 1930s and 1980s. The "great migration" between World War II and the 1970s was primarily economic-driven. Blacks and Hispanics from the South migrated north for better employment opportunities. The availability of jobs, however, were insufficient to meet demand, and, like the first phase of gang formation, cities were unable to accommodate population growth. One attempt to “fix” the problem in New York led to segregated housing and concentrated disadvantage. More importantly, this strategy brought together gangs previously dissociated from one another. In addition to the concentration of residents by race and ethnicity, there was an ethnic shift in the composition of immigrants, which

further exacerbated racial tensions by creating a culture clash. Unlike the initial waves of immigrants that originated from Europe, more citizens from Latin America and the Caribbean began entering the region. These domestic and international migratory patterns fueled conflicts from Boston to Philadelphia and throughout the rest of the Northeast region.

City officials recognized the impending threat of gangs to local communities and the city at-large. Two programs implemented in the 1960s aimed to disrupt the cycle of gang violence and retaliation in New York (Schneider, 1999). The Mobilization for Youth (MFY), which addressed the issue of social disorganization (Greene & Pranis, 2007), and the Lower Eastside Neighborhood Association (LENA) that contributed to a brief truce, reduction in gang activity, and the de-securitization of gangs in New York. The progress made to reduce gang activity lasted until cocaine and heroin became popularized. Which, ironically, gangs mobilized to push these drugs out of their community (Greene & Pranis, 2007). Since the proliferation of drugs in poor urban neighborhoods, gangs have assumed control over much of the drug trade in the United States. Nearly sixty percent of law enforcement agencies indicate that street-level drug sales represent a high-level threat in their jurisdiction, with another twenty percent that consider the threat moderate (National Gang Intelligence Center, 2015).

Insofar as gang growth occurred during different periods, two of the other regions discussed by Howell, the Midwest, and the West, experienced similar patterns of mass migration, concentrated disadvantage, marginalization, and racial tension. In the Midwestern region, Howell focuses his analysis on Chicago. The first phase of gangs emerged between the 1860s and 1920s. Like New York, Irish gangs were the first to emerge in this region and contributed to racial tensions. In response to hostilities from Irish gangs and whites in general, Black gangs began to form in the early 1900s (Adamson, 1998). Riots from racial conflicts persisted between 1900 to

1949, with 38 occurring in 1919 during the “Red Summer.” Three factors within this timeframe contributed to the animus between white and Black communities. After World War I, veterans returning home from the war discovered their employers had replaced them with Black men who emigrated from the South. Social Athletic Clubs (SACs), the first record of institutionalized gangs, continuously firebombed Black neighborhoods. Finally, the lynching of a Black teen caught swimming in the “white’s only” section of Lake Michigan set off a series of riots throughout the region.

The second period of gang growth in the Midwest occurred from the 1920s-1940s when gangs occupied the spaces between residential and commercial areas. Even as white gangs began decreasing, politicians played a role in the institutionalization of SACs. Despite white gangs being “a one-generation immigrant ghetto phenomenon” (Moore, 1998, p. 68), SACs perpetuated racial hostilities. Additionally, there was significant population growth in minority communities. The availability of jobs in the Midwest attracted an influx of Mexican migrants displaced by the revolution in their country of origin. Following the second period of gang growth, the Black population doubled from 278,000 to 500,000, and the migration of Hispanics after WW II continued unabated. The ethnic transition contributed to what Christopher Adamson (2000) refers to as ‘defensive localism.’ In this context, people were responding to changes in local identity with violence. Throughout metropolitan areas, gangs were mobilized to target Blacks and Hispanics. This outgroup aggression provided cohesion for Black and Hispanic gangs, in addition to the establishment of low-income housing by the Chicago Housing Authority that supplied a location for gang operations (Venkatesh, 2000). “In short order, the public housing high-rises became gang incubators and drug turf battle-grounds” (Howell, 2015, p. 22). After 1960, wars over territory, reputation, recruitment, and identity led to gang expansion (Block and

Block, 1993). With the presence of white gangs shrinking, Howell provides further insight into how minority gangs coalesced and maintained unification. “Gang lore in Black and Mexican-American gangs never let members forget the failure of law enforcement and the criminal justice system to protect them from the early Irish gangs” (p. 23).

In the West, gang formation originated from the self-segregation of Hispanic populations between the 1890s to 1930s. The close bonds between juveniles raised in Hispanic enclaves, referred to as *palomilla*, replaced the social controls of family, school, and church. Similar to the Midwest, and due to the region’s proximity to the southern border, Hispanic immigration continued unabated. Two events, the Sleepy Lagoon Murder, and Zoot Suit Riots served to unite Hispanic gangs and, at the same time, built narratives surrounding the conflict culture of Mexican youths. Unlike the emergence of Hispanic gangs, Black gangs emerged as juvenile groups in the 1920s and 1930s to protect against violence from whites. By the 1940s they had transitioned into conflict groups, and by the 1960s they consolidated in segregated housing units.

Black migration westward and the civil rights movement highlight the third phase of gang growth in the West. Two of the most notorious gangs in the United States to have emerged during this period are the Bloods and Crips. Following the Watts riots of 1965, members of the Black Panther Party splintered. According to Howell, there was frustration over the lack of progress in ensuring rights for African Americans, and disagreement over the most effective path moving forward. The Bloods and Crips began as social activists but quickly transformed into criminal street gangs. It has been suggested that Blood stands for "Brotherly Love Overrides Oppression and Destruction" while Crip means “Community Revolution In Progress” (Marie’, 2015). It was within the space between social activism and deviant behavior that the Bloods and

Crips flourished, and have expanded across the country. Their rivalry is one of the longest in American history, spanning nearly fifty years.

Unlike the other three regions of the United States, gang growth in the Southern region did not occur until the 1970s. Howell presents four explanations that set the South apart from the other three regions; there was no white ethnic immigration, the South was an agrarian society until after WW II, the “Great Migration” pushed population growth into the other three regions, and Southern culture emphasized non-secular views and the family unit. Howell explains, "Racial/ethnic tensions were minimal as the Blacks had migrated northwards, and the Mexicans assimilated easily into the Southern culture" (p. 42). The closest group to resemble a gang during this time was the Ku Klux Klan (KKK). According to Howell, the KKK formed in response to federal soldiers deployed to the South to enforce the Emancipation Proclamation. After 1877, however, membership dropped significantly when the Reconstruction Acts were repealed.

During the 1970s, the South began experiencing similar conditions that led to gang formation in the East, West, and Midwest, but in a much shorter period. The Immigration and Nationality Act of 1965 ended immigration quotas, which fueled defensive localism in the South. Immigrants from Latin America, the Caribbean, and Asia began settling in the region and changing the ethnic composition. Additionally, low-income high-rise apartments were constructed that consolidated gangs and led to concentrated disadvantage. In Howell's words, "The South region became a wellspring of gang growth from the 1970s through 1995 as this region led the nation in the number of new gang cities" (p. 42). Walter B. Miller (2001) supports Howell's observation. There were new gang cities in 32% of the cities across the South compared to 26% in the Midwest, 6% in the Northeast, and 3% in the West. Moreover, between 1970-1995, South Atlantic cities reported a 44% increase in gang activity.

Howell does not include a discussion on global gangs, but the same conditions he describes as contributing to the formation of gangs in the United States occurred in countries around the world. Insofar as the U.S. is considered ‘ground zero’ for the gang phenomenon, the analysis of global gangs can inform our observations and conclusions (Campbell & Muncer, 1989; Covey, 2010; DeFleur, 1967). In Russia, *Perestroika* changed the social, political, cultural, and economic landscape. As part of Mikhail Gorbachev’s *glasnost* policy, economic reform included transitioning from a command- to a market-economy. One of the unintended consequences of his policy led to the collapse of institutions, creating a void that was filled by gangs (Gilinsky, 2006; Stephenson, 2008). Don Pinnock and Dudu Douglas-Hamilton (1997) detail the rise of gangs in post-apartheid South Africa. According to them, gangs formed in response to forced migrations and peer pressure. South African gang members became role models, providing leadership, organization, and protection in a hostile environment. Their role as community leaders legitimized gangs as institutions. Gang formation, in other, more developed countries, has also been observed. Fourteenth and fifteenth-century England experienced gangs as society transitioned from agrarian to industrial (Sheldon, Tracy, & Brown, 2001). Further, the vulnerability of children has become commonplace in almost all areas of the world that experience gang activity. In Brazil, young kids are targeted for recruitment because the law prohibits the prosecution of minors (Dimenstein, 1991). In Finca Santa Tomás, Guatemala, parents, unable to provide for their children, abandon them on the streets, providing an ample supply of gang recruits (Moorehead, 1990). Sarah Thomas de Benitez (2007) summarizes the cycle of gang participation among global youths, “Street gang hierarchies both protect and inflict violence. Intimidation is the order of the day. Younger children are at the mercy of violent

behavior, risking losing earnings and possessions to older, bigger boys. As they grow, they, in turn, socialize new children into street-based hierarchies and rules enforced by violence” (p. 38).

2.3 Modern Gangs and the Contemporary Landscape

Two distinctions between the modern gang when compared to historical gangs make them more dangerous today than at any other point in history. Before the 1970s, gang involvement in the illicit economy was considered anecdotal (Chein et al., 1964; Moore, 1991; Keiser, 1969; Spergel, 1964). Instead, gangs concentrated on defending their territory from rivals. Security was prioritized as the delineation of territory along city blocks established a gang’s domain. Protecting territory prohibited rival gangs from exercising control over neighborhoods, often at the expense of local residents. Although territory continues to be important, the commercialization of cocaine and heroin after 1970 pushed gangs into a more market-oriented direction (Coughlin & Venkatesh, 2003; Jankowski, 1991; Spergel, 1995; Venkatesh, 2000). Selling drugs provided a sustainable income, especially for the disenfranchised living in poor neighborhoods. This contributed to structural changes manifested in the modern gang (Coughlin & Venkatesh, 2003).

Foremost is the idea that gangs are bounded to a specific location and organize to protect territory. In a survey conducted by Jerome Skolnick (1990), a Blood respondent from Los Angeles explains, “They got homeboys... you know, Crips?.. It’s got to the point where they’re in every state now. Nine times out of ten, when I get out of town, I know somebody that’s out there” (p. 8). In a separate interview, a member of the Crips corroborated that location is not a factor for gang operations. “Everywhere you go, you know what I’m saying, anywhere you go, you’re gonna see some people from L.A. If they got, you know, a dope house out there, or a dope street out there, you gonna see somebody... you’ll run into somebody on that street from L.A.” (p. 8). These admissions challenge two other conceptions regarding the gang composite. One is

that gangs involve a group of tight-knit friends, and the other is that gang membership is short (Ayling, 2011). The genesis of gang formation may involve close acquaintances, but as gangs grow, these characteristics begin to fade. Due to their market-orientation, gang expansion is analogous to a growing business. It may begin as owned and operated by family and friends, but as the business expands, these close bonds are insufficient to sustain the growth. As a result, people from outside the "inner circle" integrate into the business. Moreover, establishing dope houses, and the subsequent oversight required indicates a sense of permanence in gang membership.

Adjectives such as 'youth' or 'juvenile' are often used interchangeably with the term 'gang' where youth is considered a "salient feature" of gang participation (Covey, Menard, & Franzese, 1992; Huff, 1989; Lasley, 1992). Little has changed since the early work of Frederic Thrasher where 'youth gang' is the focal point of gang research. The lexical emphasis on 'juvenile delinquents' is the bedrock of the Eurogang definition, which has garnered a growing consensus among researchers (Curry, 2015). According to the Eurogang definition, "a street gang is any durable, street-oriented youth group whose involvement in illegal activity is part of its group identity" (Klein & Maxson, 2006, p. 4). Even with as detailed as Howell is in his explanation on the transformation of gangs, he qualifies gangs as 'youth groups.' The modern gang, however, is concentrated around adult members (Curry, 2000), an omission that has led to false conclusions about gang behavior. The National Gang Intelligence Center (NGIC) (2012) released a report showing the distinction between juvenile (under the age of 18) and adult (age 18 and older) gang members. In 1996, the age of gang members was split evenly, with 50 percent being juveniles and 50 percent being adults. However, the age composition of gangs has increasingly included members over the age of 18. By 2011 adults represented 65 percent of

gang membership while juveniles accounted for 35 percent. In 2014, gang members between the ages of 18 to 25 accounted for 66 percent of all validated gang members in the state of North Carolina. Another 28 percent were between the ages of 26 to 35, an increase of 8 percent from 2011 (North Carolina State Highway Patrol, 2014). David Pyrooz (2014) conducted a longitudinal analysis of gangs and discovered that 40% of individuals with a gang history occurred during adulthood. “Research that focuses only on juveniles misses out on a very large portion of the population of gang members” (Curry, 2015, p. 13). In short, the emphasis on gangs as juvenile groups undermines several critical observations regarding the modern gang.

An important question that this data raises is, what has caused a shift in the age composition of gang members? Although it is beyond the scope of this chapter, one explanation is the market-oriented gang that emerged after 1970 (Coughlin & Venkatesh, 2003). According to the NGIC (2015), nearly 60 percent of law enforcement agencies reported street-level drug distribution as the highest degree of criminal gang activity in their jurisdiction. Large-scale drug distribution was nearly 30 percent, with another 25 percent considering this criminal activity to be moderate. Skolnick explains that gangs shifted from a “cultural gang” where individuals coalesced around social status and protection, to an “entrepreneurial gang” focused on economic opportunity. Once gangs made this transition, migration became incentivized. Increased competition and market saturation in local areas suppressed drug prices, which led gangs to seek alternative sources of revenue outside their neighborhoods and cities. An important implication revealed by Skolnick is that the street corner gang and the extraterritorial gang exist in the same space.

The other distinction of the modern gang is their network orientation, making them more connected than historic gangs. It is within this framework that we can examine the extent to

which gangs influence the political, economic, and social landscape. George Tita and Steven Radil (2011) spatialize the social network of gangs using bivariate and multivariate analyses to reach several important conclusions about the gang phenomenon that coincide with observations made by Howell and Skolnick. First, they conclude that urbanization is the most significant predictor of gang activity. This finding quantitatively supports the genesis of gangs forming in urban areas. Similarly, Tita and Radil conclude that urban residents in rural areas are a significant predictor of gang activity outside large cities. Economic conditions, according to them, are responsible for gang diffusion between metropolitan and non-metropolitan areas. They explain that gangs form in poor urban neighborhoods and expand into rural areas experiencing economic growth.

Conceptually, the network structure of gangs raises two critical issues. Chiefly, localizing the gang neglects the ability of gang members to operate outside their immediate proximity, and ignores the public perception and capabilities of local authorities in these areas. Interviews conducted by Ralph Weisheit and L. Edward Wells (2001) supports the latter sentiment. One law enforcement agent identified as ID#179 explains, “In a small town like this, our little gangs, to the people, are serious. But, to the big city, this would be minor” (p. 7). Another, identified as ID#151, adds, “Well, again, the problem is significant for us, but I suppose if you were comparing it to an urban environment, it would be minimal” (p. 7). Coming from law enforcement officials in smaller American towns suggests that the impact of gangs is distributed disproportionately across the country. Urban centers, where gangs originated and have a long history, are better equipped to respond to gang activity than rural areas where gangs are a new phenomenon. They often lack the resources, capabilities, and specialized gang units of larger cities, a fact that gangs continue to exploit (Weisheit & Wells, 2001).

In addition to the economic explanation provided by Tita and Radil, Weisheit and Wells offer two other factors that have contributed to gang diffusion and the establishment of gang networks. One factor is displacement by criminal offenders who exploit the jurisdictional limitations of law enforcement agencies. As one observer explains, "We have a lot of drug activity, and I think a lot of the problem is that the gangers from Washington and Oregon, you know, head over this way to evade the law over there" (part 2, p. 17). The other factor is urban flight. Urban flight involves leaving the conditions of the urban environment to remove oneself from a territory controlled by gangs. Interviews conducted by Weisheit and Wells, however, reveal that an unintended consequence of gang members moving to escape gang life has led to rural communities importing gang culture.

The United States is considered the progenitor of the gang phenomenon (Covey, 2010). With their extensive history and continued expansion, gangs have established themselves as an American institution. As Howell, Skolnick, and Tita and Radil have demonstrated, what originated as an urban phenomenon has cascaded across the country. Gangs now maintain a presence in all fifty U.S. states. Their transformation, however, has entered a new stage through the application of network structures. The connection between gangs at the macro-level have become stronger and, in some cases, have abated the racial tensions prevalent in historic gangs (Chapter 3 provides a description of gang alliances and I conduct a macro-level analysis of gangs in Chapter 4). More importantly, a 'network of ideas' has integrated extremist ideologies into the identity of some gangs and has influenced the process through which decisions are made by re-shaping their worldview. When the United Blood Nation (UBN) formed in 1993, Omar Portee and Leonard McKenzie integrated gang culture with the anti-oppression ideology espoused by the Black Panther Party (BPP) (NDIC, 2003). The incorporation of the BPP into the identity of

African American gangs, however, is nothing new. Although they are considered a gang in their own right (NGIC, 2011), in the 1960s, when members of the BPP splintered to form the Bloods and the Crips, they inherently transferred their ideology to them. More concerning is the potential connection between gangs and terrorist organizations. Joseph Rogers (2007) argues that a gang-terrorist nexus is unlikely, a common consensus in gang research. His assertion is predicated on the divergent interests between gangs and terrorists. Rogers defends his position in economic terms, "If the gang-terror link proved true, and another attack on the US was successful, the gangs would, in essence, destroy some of the customers (drugs) and victims (robbery, auto theft) on which they depend to make money." He continues by pointing out their ideological differences, "gang members in the US are Roman Catholic, not members of the Islamic Radical Groups who engage in terrorist activities. At this level of analysis, the gang members are as much an enemy of the *jihad* as the rest of US society" (p. 24). The lack of empirical evidence supports Rogers' argument. However, the foundation from which this argument relies on has several weaknesses. First, the interpretation of terrorism as Islamic-inspired attacks takes too narrow a view. Any viewpoint that perpetuates violent action can be considered radical. In addition to religious zealotry, acts of terrorism have been committed by environmentalists, animal rights groups, and various other left-wing and right-wing groups. Put another way, it is not uncommon for white supremacists to also belong to a white gang. Neither group is considered an incubator for radical Islam. Second, Rogers ignores the fact that organized criminal groups are becoming functionally similar. To finance their operations, terrorist groups have begun manufacturing counterfeit goods, fake credit cards, and narcotics (Flanigan, 2012). Gangs are being used as distribution channels to sell these illicit products; a similar strategy used by cartels to sell narcotics.

Although U.S. intelligence data indirectly confirms the argument made by Rogers, pointing out the conjecture surrounding a gang-terrorist nexus, there have been a few well-documented cases that raise the possibility of this connection. In 2002 Jose Padilla, a member of the Latin Kings, was convicted under the Patriot Act for conspiring with al-Qaeda to detonate a dirty bomb on U.S. soil. Rogers attempts to invalidate Padilla's gang ties and dismisses this as the actions of an individual rather than a concerted effort of the Latin Kings. Over a decade earlier, however, Jeff Fort, leader of the gang El Rukn, was propositioned for \$2.5 million by a Libyan terrorist group to carry out a terrorist attack in the United States. A similar plot unfolded in California in 2005. The main difference between Padilla, Fort, and the incident in California is that the latter attempt was a result of homegrown terrorism, the third point that Rogers misses. Mark Hamm (2007) describes how the 2005 Los Angeles Bomb Plot unfolded. Despite not having a connection to any terrorist group, and while serving prison sentences, Kevin Lamar James, a 76th Street Crip, and Levar Washington, a Rollin' Sixties Crip, planned a coordinated set of terrorist attacks that targeted military and religious sites across Los Angeles. James, a practicing Sunni Muslim, started *Jamiyyat Ul-Islam Is-Saheeh* (JIS). Through his gang, he began disseminating the JIS Protocol throughout the California penal system. A second doctrine entitled "Blueprint 2005" was a call to arms against the state. "The Blueprint was modeled after the Qaeda training manual which instructs al-Qaeda operatives to set up "Islamic programs" if they are incarcerated and try to recruit "candidates" who are "disenchanted with their country's policies" (p. 43). The implications of the bomb plot highlighted the vulnerability of U.S. correctional institutions in mitigating the exchange and crystallization of extremist norms (Roberts & Collins, 2020). Moreover, it revealed that communicate between gangs and terrorists is not a sufficient condition for the radicalization of gang members. Rather, it is the message

espoused by radical groups that matter. Both James and Washington belonged to rival gangs, yet they were able to set aside their differences for a common goal. It is within this network of ideas between gangs and terrorists that get neglected when trying to determine the likelihood of a gang-terrorist nexus.

The integration of extremist ideologies into the gang ethos has become normalized as part and parcel to their transformation. Motivated by territory and profits, gang culture has evolved to incorporate extremist worldviews contributing to the hybridization of gangs, or *metagang*. That is to say; the terrorist message is resonating with gangs even though terrorists are not training, funding, or coordinating with them. The Five Percenters and Gangster Disciples, for example, have incorporated teachings from the Nation of Islam into their identity. “Since its founding in 1930, the Nation of Islam (NOI) has grown into one of the wealthiest and best-known organizations in black America. Its theology of innate black superiority over whites and the deeply racist, antisemitic and anti-LGBT rhetoric of its leaders have earned the NOI a prominent position in the ranks of organized hate” (The Southern Poverty Law Center, 2016). Founded in 1964, the Five-Percent Nation of Gods and Earths (Five Percenters), an offshoot of the Nation of Islam, believe in the “innate divinity of the black man... and the idea that the white man is a devil who was created through a process of genetic grafting by a mad scientist named Yakub 6000 years ago” (Andrews, 2013, p. 12). The cornerstone of their teaching rests on the idea of Supreme Mathematics and the Supreme Alphabet, which are ways for followers to interpret numbers and symbols in shaping their worldview. One lesson, borrowed from the NOI, claims that 85 percent of the population lives in ignorance imposed by 10 percent of the population who seek to keep the world subservient and under their control. The name Five Percenters comes from the idea that they are the enlightened few (5 percent of the population) who are determined

to teach the rest of the world the truth. This transcendence, however, is reserved for Black men whom the founder of the Five Percenters, Clarence Edward Smith (aka Clarence 13 X, aka Allah the Father) claimed was “God personified, and that each black man could cultivate and eventually realize his godliness through meditation, study, and spiritual and physical fitness” (Johnson, 2006). Smith established the Five Percenters after leaving the Nation of Islam. His teachings emphasize that Black people were the original inhabitants of Earth, also referred to as the fathers and mothers of civilization. The Gangster Disciples and Almighty P. Stones, among others, practice a similar ideology emphasizing Black nationalism. In short, “Black street and prison gangs borrowed principles emphasizing Black nationalism and Black consciousness from the Nation of Islam, Black Power, and Black Panthers” (Cureton, 2009, p. 359). Some White street and prison gangs have followed a similar path through a revivalist movement of Odinism and the integration of white supremacist ideology.² “Odinism is a religion of race and of blood. The return of the gods is posited as the culmination of an apocalyptic End Time drama that liberally blends elements of Christian eschatology with the Norse Ragnarök tradition. The return of the Golden Age pantheon is a much-longed-for event in these dark days, for the return of the gods will mean a return to the days of racial purity. Of harmony, and of universal happiness” (Kaplan, 1997, p. 85). The return to Odinism promotes a sense of familial bond in the imaginary of its members, a means of unification in blood and combat (Center on Extremism, 2016). It is the network of ideas that connects radical extremism with gang culture, creating *metagangs*. The threat that emerges combines the criminal motives of territory and profit from gangs with an

² The main distinction between white gangs and white supremacists is that the operations of the former group functions regardless of race. For example, they are willing to cooperate with Black, Hispanic, and Asian gangs. Additionally, they distribute narcotics to anyone willing to buy from them, including whites. Selling drugs to white communities is considered an affront to the vision of white supremacists, whose primary goal is to preserve and expand the white race.

attempt to evoke political change through terrorism. Additionally, the language, symbols, and customs used by extremist groups aim to unify gang members as a cohesive unit. The animus directed toward the white race taught by the Nation of Islam and integrated into the Five Percenters and white gangs that adhere to a Norse mythos that directs followers to take up arms for the sake of racial purification are two examples.

A final connection of significance is the established networks between gangs and the state. The transformation of gangs has inherently evolved in parallel with the state, and, as ‘social actors,’ gang members occupy legitimate spaces of public service. Of particular concern, is the integration of gang networks with security institutions. That is to say, institutions whose primary objective is to enforce the law and mitigate public safety threats, both domestic and foreign, are being subverted to advantage gangs. According to an NGIC (2013) survey, 43% of law enforcement respondents reported gang member involvement in the military, 35% in corrections, 15% in law enforcement, and 7% in the judiciary and courts. A separate NGIC (2011) report shows that 1-2% of total military personnel are gang-affiliated. Their authority ranges from low-level soldiers to ranking officers (NGIC, 2007).

There is, however, some disagreement on the magnitude of gangs in the military. At least one branch of the military challenges the findings by the NGIC. The Criminal Investigation Command (CID) (2007), the division responsible for investigating felonious crimes within the Army, states, “Overall, the assessment of the threat of gang activity in the Army is low” (p. 9). To support their claim, the CID regularly lists the number of gang-related infractions in the Army. These crimes have included murders at separate military bases in Fort Hood, TX, Schofield Barracks, HI, and Fort Wainwright, AK carried out by Gangster Disciples, La Familia, and Bloods, respectively. The murder at Fort Wainwright targeted members of the Crips, the

largest rival to the Bloods. Other crimes reported by the CID involving gangs included assault, narcotics, and destruction of property. On the whole, the CID concludes that non-gang member military personnel commit crimes at a higher rate than military-connected gang members.

Despite attempts by the CID to assuage concerns over gangs in the military, “Law enforcement officials are concerned about gang-affiliated soldiers transferring their acquired training and weapons back to communities to facilitate the commission of crimes. When such transfers of knowledge and supplies have occurred, communities have suffered, and law enforcement officials have fared poorly” (Eyler, 2009, p. 705). In addition to the tactical training and know-how that military-connected gang members provide to gangs, there have been several cases of military-grade equipment smuggled onto the streets (NGIC, 2007). This theft has included night vision gear, body armor, and assault weapons (Smith, 2011). Findings by Carter Smith (2015) support the claims made by the NGIC and Gustav Eyler. Smith conducts surveys between law enforcement officials in Texas and Tennessee regarding military-trained gang members (MTGMs). Gang investigators from both states were asked a series of questions related to gang activity in their jurisdiction. Respondents included gang specialists from military and law enforcement officials. In Texas, they reported an 85% increase in gang activity, 89% of gang members in their jurisdiction were active-duty military, and 100% of MTGMs were gang-affiliated before entering the military. Gang investigators in Tennessee also reported a significant increase in gang activity (77%), but active-duty gang members (25%) and gang affiliation before joining the military (31%) were lower than in Texas. A member of the Tennessee Gang Investigators’ Association provides context for the increasing pattern of gang participation in the military:

The current generation of gang members are the first in a very long time to grow up during a time of high military activity. As a result, more gang members are now joining

military service for a wide variety of reasons and are returning to the (civilian community) jurisdiction with basic military training at the very least. I have seen gang members in the military encourage others in their gang to enlist as well. The percentage of military-trained gang members will continue to rise for the foreseeable future. (Smith, 2015, p. 23)

Table 2.1 shows felonious and non-felonious crimes committed by gang members in the military as the CID and NCIS have investigated them. The results of which contradict earlier reports by the CID that the threat of MTGMs is low.

Table 2.1 Gang-Involved Criminal Investigations for the Army (CID) and Navy (NCIS)

Agency	Year									
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
CID Felony	7	5	5	10	16	17	27	34	11	NA
CID Non-Felony	22	8	4	13	44	62	92	109	102	NA
NCIS Felony	NA	NA	NA	NA	NA	NA	12	64	78	79
NCIS Non-Felony	NA	NA	NA	NA	NA	NA	67	130	120	115

(Source: Carter Smith, 2015)

One area that the NGIC and CID agree on is the vulnerability of military personnel and their families to gang recruitment. It is not uncommon for service members to relocate multiple times throughout their careers. Frequently relocating or having one (or both) parent(s) on deployment for extended periods creates a sense of isolation and instability with their children (Eyler, 2009). For family members, each transfer involves assimilating into their new surroundings. This period of adjustment provides recruitment opportunities for gangs similar to the social disorganization present in poor communities. Some military personnel are targeted because they share an affinity for motorcycles similar to Outlaw Motorcycle Gangs (OMGs). A 2016 CID flier issued to military personnel warns service members to exercise caution when attending motorcycle events because OMGs frequently attend. They socialize, target, and befriend members of the military.

On the threat of gangs in the military, Eyster concludes that a gang presence in the military undermines the efficacy of achieving military objectives by jeopardizing unit order and security, diminishing professionalism, and increasing the threat to local communities. He also draws parallels between the military and school. Both institutions provide gangs fertile grounds for recruitment. “Approximately 80 percent of survey respondents indicate gangs are present in the public-school systems within their jurisdiction, with 54 percent reporting that gangs in their school system pose a moderate or serious threat” (p. 38). From this information, the inference here is that the less selective the institution, the easier it is for gangs to infiltrate. The process for entering the military, for instance, is more restrictive than the criteria required for entering the public school system.

Gangs have also infiltrated law enforcement institutions. Chiefly, correctional institutions designated for the punishment and rehabilitation of criminal offenders, and institutions responsible for policing its citizens and apprehending those that violate the established laws of society. When analyzing gangs in correctional institutions, I speak from a position of authority in having worked as a correctional officer in security threat group intelligence responsible for mitigating gang activity. Given the mass shortages of correctional officers across the country, it is common for gang members with no criminal history to gain employment. Once inside, they begin supplying their gang with information about the facility, staff, and standard operating procedures. The information they obtain is then used to smuggle in contraband, corrupt or coerce employees, and transfer information in and out of prison. One of the more infamous cases involved the abduction of North Carolina’s Assistant District Attorney (ADA), Colleen Janssen’s father, Frank Arthur Janssen (details of this case can be found in *The United States of America v. Kelvin Melton (2014)*). Janssen prosecuted Kelvin Melton, a 1-8-Trey gang leader of the United

Blood Nation, in 2012 for murdering his ex-girlfriend's boyfriend (a case description can be read in *State of North Carolina v. Melton (2014)*). In 2014, while serving his sentence in the high-security maximum control unit (HCON)³ at Polk Correctional Institution, Melton ordered the abduction of ADA Janssen for his incarceration. The assailants had the wrong address, and Janssen's father was taken by mistake. After five days of captivity, federal authorities rescued him in Atlanta, GA. After a Department of Justice investigation, it was discovered that correctional officers Gregory Dustin Gouldman and Jason Dean were responsible for providing Melton with a cellular phone, a felony crime in the state of North Carolina (North Carolina Department of Justice, 2017). In addition to attempted murder, Melton made over 100 phone calls from his cell in the HCON unit. When gang members gain unrestricted access to their associates on the street, this jeopardizes the integrity of correctional institutions and challenges its legitimacy in the eyes of the public. The implications from such events heighten the security risk to communities by allowing gangs and their leadership to control operations regardless of the strict regulations and observation of the state.

Gangs are not always as deliberate as the case involving Kelvin Melton when attempting to corrupt law enforcement institutions. Sometimes designees of the state, responsible for apprehending criminals, succumb to the gangster lifestyle. In most large cities, for instance, specialized gang divisions are used as tactical units to suppress gang activity. The unintended consequence of these units leads to "decoupling," which generates a sense of isolation from officers, reduced oversight and accountability, and creates a counterculture at odds with the overall police organization (Katz & Webb, 2006). Renford Reese (2003) provides two other

³ HCON is reserved for high-profile inmates and those who pose a security threat to the institution. Standard operating procedures require that these inmates be separated from the regular population, prohibited from having visitors such as family and friends, and limited in their number of personal belongings. Their only contact comes from correctional staff who carefully monitor the inmates for sanitation, recreation, and feeding.

theories to explain why police officers join gangs. One is the 'rotten apple theory' that claims corruption is a result of a few bad actors in the department. The other theory focuses on the environment cultivated by city leaders. From this perspective, there is a trickle-down effect. The criminal behavior exhibited by officers is a consequence of the culture created by corrupt politicians and high-ranking officers in the police department.

Charles M. Katz and Vincent J. Webb (2006) summarize one of the most notorious cases involving officer corruption in the Rampart District of Los Angeles, where officers began behaving like a gang in their own right. In addition to corruption, allegations of civil rights abuses led to what has become known as the Rampart Scandal. An investigation into the district primarily revealed malfeasance in the anti-gang unit CRASH (Community Resources Against Street Hoodlums). CRASH was established in the 1980s to combat the rise of gang violence in the city. Although CRASH was lauded for a decrease in gang-related crimes, an internal affairs investigation later determined that their methods were unlawful and, in several cases, involved civil rights abuses. Randall Sullivan (2002) documents the impetus for the Rampart Scandal. One LAPD Rampart officer, Raphael Perez, testified that the officers in CRASH behaved like the gangs that they were targeting. In addition to engaging in criminal conduct, their mannerisms, use of symbols, and established norms resembled that of a gang. Another notable CRASH officer engaged in criminal conduct, David Mack, was convicted of robbing a Bank of America. Some of the money from the robbery was allegedly meant as a payoff to Harry Billups (aka Amir Muhammed) for the murder of American rapper Christopher Wallace (aka The Notorious B.I.G., aka Biggie Smalls). The feud between the Notorious B.I.G. of Bad Boy Records, and Tupac Shakur, another American rap artist, of Death Row Records, is well-documented, and their murders remain unsolved (Sullivan, 2002). However, it was the shooting death of Kevin Gaines

by Detective Frank Lyga of the Hollywood Division that led to the investigation into the Rampart District. Gaines, a CRASH officer close to Perez and Mack, had ties to the Bloods and worked off-duty at Death Row Records for the owner and CEO Marion “Suge” Knight (a member of the MOB Pirus, aligned with the Bloods) until being shot and killed by Lyga who was assigned to investigate and solve the murders of Shakur and Wallace. Before the shootout with Lyga, Gaines was allegedly flashing gang signs. Through his investigation into the murders of Tupac and Biggie, Lyga inadvertently discovered the abuses and gang connections of Perez, Mack, and Gaines. The subsequent Rampart Scandal unveiled these abuses throughout the division.

The fallout from the Rampart scandal supports the theory by Katz and Webb. “Decoupling” led to officers exhibiting gang-like behavior and, in some cases, joining gangs like the Bloods. Although there are “rotten apples,” or bad actors as Reese suggests, the corruption in the Rampart District was widespread. The investigation into the scandal identified roughly 70 officers, most of whom were members of the anti-gang unit CRASH. Further, the role of the political environment in cultivating a culture that condones corruption is unsubstantiated in this case. One can argue that elections are won when politicians are responsive to their constituents. A strategy to win political favor is to identify corrupt police officers publicly. Especially when those officers are abusing the residents within their district. It seems more plausible that a lack of oversight, accountability, and transparency in addition to the continued interaction between officers and gang members contributes to the establishment of norms that reflect a conflict culture, similar to the process of gang formation described by Howell.

2.4 Conclusion

Early in U.S. history, domestic conditions fueled the rise and institutionalization of gangs in America. Although gangs emerged disproportionately across different regions of the country,

similar patterns of weak social controls, concentrated disadvantage, goal blockage, and mass migration have created an environment conducive to the formation of gangs. In turn, the environment helps shape individual preferences, making the benefits of joining a gang more attractive than other available alternatives; economic reasons, to improve social status, protection, or to satisfy thrill-seeking behavior, to name a few. As Howell (2015) demonstrates, what begins as collective action against adverse conditions, develops into a subculture of conflict groups. The final stage of this transformation culminates with the formation of gangs, whereby gangs replace the social controls typically taught by family and school, resulting in the normalization of deviance and criminality within communities.

Although gangs began as an urban phenomenon, they have permeated throughout the country. Historically, gangs have been characterized as groups of loosely affiliated youths whose time in the gang is short, and influence confined to a city block or small neighborhood. As a result, the primary motivation of gangs is to protect their territory. The inference from this description is that they lack the necessary organization and sophistication to be a national threat. The modern gang, however, operates in urban, suburban, and rural communities, and, in some cases, has transnational ties. This expansion can be explained through a longitudinal analysis comparing historic gangs to the modern gang. Although some of their characteristics are similar, the modern gang differs from historic gangs in two significant ways. First, the modern gang is more market-oriented than historic gangs. The commercialization of cocaine and heroin after 1970 has made gang participation a more lucrative enterprise. The ability to control market share in the illicit economy has altered the gang composite by attracting adult members, incentivizing gang participation for longer durations of time, and increasing the longevity of gangs. One of the earliest gangs in the United States, for example, The Five Points Gang, lasted roughly 30 years

compared to modern gangs such as the Bloods and the Crips that have been around since the 1960s and show no signs of disappearing. The other distinction between the modern gang and historic gangs involves the creation of sophisticated network structures. The market orientation of the modern gang is partially responsible for gang expansion. In order to improve their market position, gangs seek partnerships and distribution channels outside of their home territory; a point made by Tita and Radil (2011) when comparing the economic conditions that contribute to gang activity in urban and rural communities. Gangs occupy both spaces, but for different reasons. They form in urban centers but gravitate towards areas in rural America where economic opportunities are greater. To facilitate this growth, they manage their supply chain by cultivating connections to other locations. Moreover, they have the advantage of functioning unbounded, whereas bureaucratic processes and jurisdictional barriers act as operational constraints for local law enforcement.

In addition to greater gang-to-gang cooperation at the national level, gangs have begun adopting terrorist ideologies. This ‘network of ideas’ has contributed to the hybridization of some gangs as they integrate extremist beliefs into the gang culture. Combining these two systems of beliefs aims to unite gang members and elevate their focus onto a larger scale. For the Five Percenters, this means fighting a historical injustice perpetrated by white people that have subjugated Black communities and deprived them of their rightful place atop the social hierarchy. For some white gangs, this means resurrecting a Norse consciousness that aims to purify the races — an inevitable conflict with apocalyptic undertones.

A final connection that separates the modern gang from historic gangs involves state institutions. Specifically, gang members that occupy the spaces responsible for security from both domestic and foreign threats. These include connections to the military and law

enforcement agencies. Gangs corrupt and undermine their operational efficacy, deteriorate public trust, and provide cover for illicit gang activity. Moreover, the specialized training gang members receive has been used to commit crimes in U.S. communities throughout the country. Unlike historic gangs that were primarily local, the network orientation of modern gangs present significant challenges to law and order, weakens institutions, and negatively impacts the structural integrity of the state by transposing local gang activity onto the national security consciousness.

CHAPTER 3

WHAT IS A GANG? THE ROLE OF GANG TYPOLOGIES IN DEFINING GANGS

There is no universally accepted definition of ‘gang’ (Huff & Barrows, 2015). A point of contention within this debate is disagreement on the scope of what constitutes a gang. Too broad, and non-gang affiliated groups like fraternities can be categorized as gangs. Too narrow, and definitions miss categorically important features of gangs. Another argument points to the tautology of including crime in gang definitions, electing instead to conceptualize gangs as performative manifestations. From this perspective, gangs are defined in terms of their environment and the social context with which they form. Similarly, input from law enforcement agencies has been rejected as being influenced by politically motivated agendas, an “unscientific” approach where gangs are defined by disparate criteria across the country. Some states have adopted the federal definition of gangs, and others have written their own. States such as Hawaii, Maine, New Mexico, Rhode Island, Vermont, and West Virginia have no official gang definition (Huff & Barrows, 2015). It can be inferred that differences between jurisdictional authorities responsible for providing meaning to the term ‘gang’ reflect a localized interpretation, undermining a universal gang definition from emerging. In the first part of this chapter, I highlight the debate on defining gangs.

G. David Curry (2015) effectively reconciles the differences between broad and narrow gang definitions, arguing that law enforcement sources compliment sociological perspectives by integrating environmental group factors with current gang data. However, the debate on defining ‘gang’ neglects gang typologies, which leads to an amorphous definition of the term. This is important because some gangs, although forming under similar conditions, follow different trajectories which complicate our conclusions on the criteria that distinguish gangs from other

criminal groups. John Sullivan (1997), for example, describes gang transformation occurring along an evolutionary scale that involves three generations of gangs. First-generation gangs are the most ubiquitous, primarily focused on protecting territory while second-generation gangs are market-oriented and demonstrate greater cohesion towards advancing group objectives. Second-generation gangs began emerging after the introduction of narcotics in the 1970s by providing lucrative economic opportunities and stability (Coughlin & Venkatesh, 2003). Finally, third-generation gangs aim to influence political outcomes and often use terrorism or quasi-terrorism to achieve their goal. Including evolutionary gang typologies in gang definitions help to collate them with organized crime and terrorist organizations. The former is comparable to the profit-motivations of second-generation gangs, while the latter shares the ideologically-driven attributes of third-generation gangs. Thinking about gang evolution helps address similar questions asked by Scott Decker, Tim Bynum, and Deborah Weisel (1998). What qualifies as a gang, and when does a gang transition to an organized crime syndicate or terrorist organization? In addition to generational gang types, there are cultural gang types divided into street, prison, and outlaw motorcycle gangs. While street gangs originate in neighborhoods, prison gangs originate in the prison system. Outlaw motorcycle gangs (OMGs), on the other hand, are more nomadic than street or prison gangs, and share an affinity for motorcycle subculture. It is not my intention to argue a position on defining gangs but to provide additional consideration for a more eloquent gang definition. In the second part of this chapter, I emphasize the origins and history of some of the more prominent gangs in the United States. Not all gangs are similar, making the examination of gang typologies an important contribution to developing a gang definition that reflects their shared similarities and differences. Especially in the context of other criminal groups.

3.1 Defining Gangs

It is best to start with Frederic Thrasher (1927) when attempting to understand the debate on defining gangs (Curry, 2015). In his seminal study of Chicago gangs, Thrasher defines the gang as “an interstitial group formed spontaneously and then integrated through conflict” (p. 57). Although the absence of social controls plays a role in gang formation *and* conflict contributes to gang cohesion, defining gangs by early twentieth century standards over-simplifies the modern complexity of gangs. Because gangs are fluid, any robust definition of gangs should address temporality (Curry, 2015). As an alternative to Thrasher, Malcolm Klein (1971) defines gangs as, “Any denotable group of youngsters who (a) are generally perceived as a distinct aggregation by others in their neighborhood, (b) recognize themselves as a denotable group (almost invariably with a group name), and (c) have been involved in a sufficient number of delinquent incidents to call forth a consistent negative response from neighborhood residents and/or enforcement agencies” (p. 13). However, Walter Miller (1975) is quick to highlight ambiguity in the term ‘youth,’ and provides his definition of (youth) gangs as “a self-formed association of peers, bound together by mutual interests, with identifiable leadership, well-developed lines of authority, and other organizational features, who act in concert to achieve a specific purpose or purposes which generally include the conduct of illegal activity and control over a particular territory, facility, or type of enterprise” (p. 121). Robert Bursik and Harold Grasmik (1993) point out that fraternities and other non-gang affiliated groups fit the gang definition proposed by Klein, a similar weakness found in Miller’s definition.

G. David Curry (2015) builds on Richard Ball and Curry (1995) in re-visiting the logic of defining gangs. He delineates the contrasting viewpoints among scholars that have prohibited a universally accepted definition of ‘gang’ from materializing. One part of the debate involves the use of crime in official gang definitions as a redundant, if not unnecessary, descriptor that

propagates a moral panic (Shute & Medina, 2014). Although Klein and Miller explicitly integrate criminal behavior in their definitions, Scott Decker et al. (2014), Finn-Aage Esbensen et al. (2001), and Terrence Thornberry et al. (2003) remind us that criminal activity is not required to join a gang. James F. Short, Jr. (1996) avoids using a criminogenic lens when he posits, “Gangs are groups whose members meet together with some regularity, over time, on the basis of group-defined criteria of membership and group-defined organizational characteristics; that is, gangs are non-adult sponsored, self-determining groups that demonstrate continuity over time” (p. 5). Other scholars avoid using ‘crime’ by defining gangs as social constructs (Brotherton, 1997), symbolic of “street life” (Conquergood, 1997), resistant to their social status and reject established centers of authority (Garot, 2010), and best understood in the same context as social movements (Katz & Jackson-Jacobs, 2004).

Although committing crimes is not a prerequisite for joining a gang, gang culture encourages, if not incentivizes, criminal behavior (Bernburg, Krohn, & Rivera, 2006). This can be in the form of peer pressure, inherited traits through socialization, or for promotional opportunities. One of the most effective ways to gain the trust of other gang members, and demonstrate one's loyalty, is by carrying out a criminal act, especially through violence (Federal Bureau of Investigations, 1982). A 2011 National Gang Intelligence Center survey indicates that 48 – 90% of violent crime in districts across the country were committed by gang members. Because violent crime is a salient feature of gang behavior, some scholars such as Judith Aldridge, Juanjo Medina, and Robert Ralphs (2012) question why this is not more prominently featured in gang definitions. Some prison gangs, for example, require their members to assault correctional officers as part of their recruitment process, or to advance in rank. Not all crimes, however, require an assault or homicide. Less malicious criminal activity involves “spotting” to

alert other gang members of a police presence, or “tagging” that mark gang-controlled territory. In most cases, the more serious the crime, the greater the opportunity for advancement. I provide gang-specific examples when discussing the typology of gangs later in this chapter.

Another debate in defining gangs, according to Curry, is whether or not to include the lexical terms used by law enforcement. John Hagedorn (1988) refers to scholars that borrow definitions from law enforcement as “courthouse criminologists.” Jack Katz and Curtis Jackson-Jacobs (2004) argue that law enforcement definitions are, by design, manifested in a policy agenda with ready-made solutions that target inimical groups. Differences in gang reporting across space and time lead to different interpretations of gangs, “more often reflecting the organization of social control agencies than empirical realities about gang memberships or gangs” (Fagan, 1990, p. 190). One definition that has gained some momentum is the Eurogang definition. First proposed in Malcolm Klein (2001) and adopted by Klein and Cheryl Maxson (2006), “A street gang is any durable, street-oriented youth group whose involvement in illegal activity is part of its group identity” (p. 4). The full extent of the Eurogang definition identifies durability (differentiating between short- and long-term groups), defines youth (between ages of 12 – 25), and incorporates illicit group behavior (Hiestand, 2018). Although Curry disagrees, the authors claim that the Eurogang definition has drawn a consensus among gang scholars. Aldridge, Medina-Ariz, & Ralphs (2012), however, point out that the Eurogang definition includes groups that convene to use illegal drugs, the same generalization that weakens Klein’s 1971 definition. Despite this criticism, Todd Hiestand (2018) indicates that California Assembly Bill (AB) 90 borrows from the Eurogang definition:

’Criminal street gang’ means an ongoing organization, association, or group of three or more persons, whether formal or informal, having as one of its primary activities the commission of crimes enumerated in paragraphs (1) to (25), inclusive, and paragraphs (31) to (33), inclusive, of subdivision e of Section 186.22 who have a common

identifying sign, symbol, or name, and whose members individually or collectively engage in or have engaged in a pattern of definable criminal activity (p. 5).

The primary differences between the Eurogang definition and AB 90, according to Hiestand, is that the latter operationalizes 'group,' disregards age, acknowledges a common identifier among members, and includes crime as an individual *or* group act. However, the adjustments made to AB 90 in contrast to the Eurogang definition appear to be an abridged version of gangs defined by federal agencies. The National Gang Intelligence Center (2015), a division of the Federal Bureau of Investigations defines gangs as:

(1) an association of three or more individuals; (2) whose members collectively identify themselves by adopting a group identity, which they use to create an atmosphere of fear or intimidation frequently by employing one or more of the following: a common name, slogan, identifying sign, symbol, tattoo or other physical marking, style or color of clothing, hairstyle, hand sign or graffiti; (3) the association's purpose, in part, is to engage in criminal activity and the association uses violence or intimidation to further its criminal objectives; (4) its members engage in criminal activity, or acts of juvenile delinquency that if committed by an adult would be crimes; (5) with the intent to enhance or preserve the association's power, reputation, or economic resources; (6) the association may also possess some of the following characteristics: (a) the members employ rules for joining and operating within the association; (b) the members meet on a recurring basis; (c) the association provides physical protection of its members from other criminals and gangs; (d) the association seeks to exercise control over a particular location or region, or it may simply defend its perceived interests against rivals; or (e) the association has an identifiable structure; (7) this definition is not intended to include traditional organized crime groups, such as La Cosa Nostra, groups that fall within the Department's definition of "international organized crime," drug trafficking organizations or terrorist organizations (p. 4).

Curry finds that using law enforcement methods to define gangs provides valuable insight into developing an operational gang definition. "Even when older definitions have proved acceptable, new definitions often become necessary, either because of changes in the phenomenon itself or changes in the purposes for which the definition is required. As the relative visibility of various phenomenal features changes with research progress, redefinition often becomes necessary" (p. 23). Curry concludes that the methodology used by law enforcement operatives is more precise

than the broad gang definitions developed by Klein, Miller, and Klein and Maxson. Law enforcement agencies use a self-reporting mechanism that is absent in the scholarly research design of survey data. Additionally, law enforcement narrowly target groups of individuals that represent a significant threat to the community. This approach excludes peripheral gang affiliations (e.g., individuals that participate in gang crimes but are not gang members) and superfluous gang descriptors, while including the most recent gang characteristics. For example, G. David Curry (2000) and David Pyrooz (2014) deride “youth gang” as anachronistic. Although juvenile membership may have been more prevalent in the past, both studies agree that the gang problem is centered on adults. As I point out in the previous chapter, using ‘youth’ or ‘juvenile’ to describe gang members ignores the realities of the demographic composition of gangs where adult members play a prominent role. The use of law enforcement sources to define gangs provides observational data on gangs as they evolve (Curry, 2015). Moreover, the attributes used by law enforcement agencies to define criminal groups provide the context necessary to differentiate between them (Abadinsky, 2010). The Organized Crime Control Act of 1970, for example, establishes that organized crime:

1. Engages in the illegal use of force, fraud, and corruption.
2. Derives power through money from illicit activity. This includes gambling, loan sharking, theft and fencing of property, importation and distribution of narcotics, and other forms of social exploitation.
3. Infiltrates and corrupts legitimate businesses and labor unions to subvert the democratic process.
4. Weakens the U.S. economic system by harming investors, interfering with “free” competition, and disrupting global commerce.

Whereas gangs are conceptualized as being territorial, organized crime groups like the mafia and cartels are characterized as being profit-driven. Terrorist organizations, a third

criminal group, on the other hand, are considered ideologically motivated to invoke political change. The U.S. Department of Justice (2009) codifies a terrorist with behavior consistent with committing acts of terrorism in the following definition:

(1) the term “international terrorism” means activities that—

(A) involve violent acts or acts dangerous to human life that are a violation of the criminal laws of the United States or of any State, or that would be a criminal violation if committed within the jurisdiction of the United States or of any State;

(B) appear to be intended—

(i) to intimidate or coerce a civilian population;

(ii) to influence the policy of a government by intimidation or coercion; or

(iii) to affect the conduct of a government by mass destruction, assassination, or kidnapping; and

(C) occur primarily outside the territorial jurisdiction of the United States, or transcend national boundaries in terms of the means by which they are accomplished, the persons they appear intended to intimidate or coerce, or the locale in which their perpetrators operate or seek asylum;

(2) the term “national of the United States” has the meaning given such term in section 101(a)(22) of the Immigration and Nationality Act;

(3) the term “person” means any individual or entity capable of holding a legal or beneficial interest in property;

(4) the term “act of war” means any act occurring in the course of—

(A) declared war;

(B) armed conflict, whether or not war has been declared, between two or more nations; or

(C) armed conflict between military forces of any origin; and

(5) the term “domestic terrorism” means activities that—

(A) involve acts dangerous to human life that are a violation of the criminal laws of the United States or of any State;

(B) appear to be intended—

(i) to intimidate or coerce a civilian population;

(ii) to influence the policy of a government by intimidation or coercion; or

(iii) to affect the conduct of a government by mass destruction, assassination, or kidnapping; and

(C) occur primarily within the territorial jurisdiction of the United States.

That is not to say that gangs, organized crime, and terrorist groups do not share similar characteristics. All three use violence as a means to achieve their ends. The fundamental

difference here is their motivations. Generally speaking, gangs are territorial, organized crime groups are profit-driven, and terrorist organizations focus on influencing political outcomes.

3.2 Gang Typologies

There are two important gang types that deserve attention. One is generational and classifies gangs by their primary motivation of territory, profits, or ideology through evolution. The other is cultural and includes street, prison, and outlaw motorcycle gangs (OMGs). Although cultural gangs exist at various stages of evolution, gang generations and culture are mutually exclusive. John Sullivan (2001, 2006) points out that most street gangs can be categorized as first- or second-generation gangs, but some, such as MS-13, the Gangster Disciples, and Black P. Stone Nation, have transformed into third-generation gangs. Examining gang typologies gives nuance to an otherwise complex debate on defining the gang archetype. Gang generations provide insight into the evolutionary spectrum of gangs where their motivation not only separates gangs from other gangs but distinguishes gangs from organized crime and terrorist groups. Understanding cultural gangs, on the other hand, is important because it highlights the norms, values, and characteristics of different gangs.

Considering gang typologies helps conceptualize gangs in terms of their shared similarities and differences that can move us towards a more unified gang definition. Jack Katz and Curtis Jackson-Jacobs (2004) explain gangs in the context of social activism, but their hypothesis does not account for the profit-orientation of some street gangs. The Crips and Latin Kings, for example, originated as community advocacy groups to protect the rights of African American and Hispanic communities, respectively. However, 'gangs as social activists' neither explains their transition into criminal street gangs when more economically lucrative opportunities emerged, nor does it address the subsequent impact this had on the formation of rival gangs. Gang definitions that use 'youth' or 'juvenile' to describe gangs does not apply to

outlaw motorcycle gangs whose members are typically older. OMGs undermine the gang definition proposed by James F. Short (1996) who considers gangs bereft of adult-sponsorship. Similarly, Dwight Conquergood (1997) conceptualizes gangs as “symbolic of street life,” a colloquialism used to describe urban areas where residents are struggling to survive. This neglects the confinement of prison gangs to correctional facilities and the proliferation of other gang types into rural settings. Several of the largest OMGs in the United States, for example, formed in rural areas that do not fit the “street life” description. The Hells Angels formed in Fontana, California while the Outlaws MC and Sons of Silence formed in McCook, Illinois and Niwot, Colorado, respectively. A common behavior of gangs that Judith Aldridge, Juanjo Medina, and Robert Ralphs (2012) consider important to defining gangs is their propensity to commit crime, particularly through acts of violence. Earning rank in a prison gang requires assaulting other inmates (usually rival gang members) or prison staff. In the Aryan Brotherhood, higher ranks are reserved for those that have committed more serious crimes, up to and including homicide (FBI, 1982). In the following section I provide an overview of gang typologies with an emphasis on the origin and history of some of the largest national gangs in the United States.

3.2.1 Gang Generations

John Sullivan (1997) postulates that the trajectory of gangs can be determined by three dimensions. One is politicization, or the political motivations of a gang, ranging from limited to evolved. The other is internationalization, or the geographic reach of a gang ranging from local to transnational. Third is the level of sophistication a gang demonstrates. Together, these three factors help explain the evolution of gangs and the extent to which they have transformed into *net warriors*. According to Sullivan, there are three generations. The most basic and ubiquitous of the three are first-generation (1-G) gangs or *proto-net warriors*. Sullivan provides the following definition for 1-G gangs:

Traditional street gangs have focused on a narrow slice of violence. Primarily turf-oriented, they operate under loose leadership, with ill-defined roles and a focus on loyalty and turf protection. These gangs engage in a broad range of opportunistic criminal activity and inter-gang rivalry. Individual members may sell drugs. They are localized and not highly sophisticated (p. 95).

Second-generation (2-G) gangs are consistent with the description of gangs identified by Brenda Coughlin and Sudhir Venkatesh (2003) after the introduction of narcotics in the 1970s. They demonstrate greater organization and group dedication to capitalize on market opportunities.

Sullivan refers to 2-G gangs as *emerging net warriors*. He provides the following definition for 2-G gangs:

The more entrepreneurial, drug-centered, gang emerges as a *second generation* type. This gang is interested in market protection, and focuses its criminal endeavors on drugs as a business. Second generation gangs are more cohesive, with greater centralization of leadership. Drug-selling becomes a group rather than individual activity. Drug gangs use violence to control their competition and assume a market rather than a turf orientation. They may embrace a broader political agenda (albeit market-focused), operate in a broader (sometimes multi-state) context, and conduct more sophisticated operations (pp. 95-96).

Once gangs evolve, they begin to share characteristics with other criminal groups. 2-G gangs resemble organized crime where criminal activity functions as a business, and security is gained through market control. Insofar as they use violence similar to 1-G gangs, they aim to protect market share rather than territory. *Third-generation* (3-G) gangs, on the other hand, are more closely related to terrorist organizations by using violence to influence political change. The 3-G gang emerges in what Sullivan refers to as a *net warrior*. He provides the following definition of 3-G gangs:

The *third generation* street gang is a mercenary-type group with goals of power or financial acquisition and a set of fully evolved political aims. Third generation gangs operate at the global end of the spectrum and are more sophisticated in nature. This type of gang may embrace either quasi-terrorism or true terrorism to advance its influence and, as such, are net warriors who truly challenge the nation-state (p. 96).

Intuitively, the continuity of gangs and the circumstances with which they form places them on different trajectories. Some remain localized occupying smaller spaces while others expand as their interests, and means to satisfy those interests, change. In most cases, this involves occupying more territory where network channels help control the flow of information and resources. Although he makes a valid point that different variations of gangs exist simultaneously along an evolutionary spectrum, Sullivan fails to address how gangs fit into these categories. In his subsequent work (See Sullivan 2001 and 2006), he explicitly identifies which gangs fit the 2-G and 3-G descriptions, but without a formal methodology describing his selection process. In other words, how political, transnational, and sophisticated, does a gang have to be in order to be considered a 1-G, 2-G, or 3-G gang? Moreover, he limits his analysis of gang generations to street gangs. This ignores two other important gang types, prison and motorcycle clubs, that I cover in the next section.

3.2.2 Cultural Gangs

There are three gang types, each with their own distinct culture. The largest group are street gangs. Street gangs form on the street and can be subdivided into neighborhood (local) and national gangs. Although they operate in the prison system, prison gangs are a separate gang type, and are sometimes referred to as “supergangs.” Whereas street gangs originate in neighborhoods and are imported into the prison system, prison gangs form in prison and, in some cases, are exported into neighborhoods. Where prison gangs do not have representation outside of the prison, they control street-level operations through proxy gangs. A third cultural gang is outlaw motorcycle gangs (OMGs). Unlike street and prison gangs, OMGs are nomadic and show an affinity for motorcycle sub-culture. In fact, knowing how to operate a motorcycle is required for membership.

3.2.2.1 Street Gangs

According to the NGIC (2015), “Street gangs are criminal organizations that formed on the street and operate in neighborhoods throughout the United States. Neighborhood-based gangs are confined to specific neighborhoods and jurisdictions, with no known leadership beyond their communities. National-level gangs have a presence in multiple jurisdictions” (p. 11). The distinction of neighborhood and national gangs fit nicely with Sullivan's evolutionary theory. Neighborhood-based gangs undoubtedly cover 1-G while national-level gangs more closely resemble 2- and 3-G gangs. Globally, “Street gangs have been more common in the United States than any country in the world. It is also true that American street gangs... have had a profound role in shaping street gangs throughout the world” (Covey, 2010, p.38). The discussion that follows identifies several of the largest street gangs in the United States, along with some of their primary allies and rivals.

3.2.2.1.1 Bloods & Crips

Two of the largest African American street gangs in the United States are the Bloods and Crips. With a rivalry spanning half a century, the first of these two gangs to form was the Crips in the latter half of the 1960s. According to Juan Francisco Esteva Martinez and Marcos Antonio Ramos (2008), there are three competing theories to explain their genesis. One explains their formation as a product of institutional racism and violence directed at southern blacks migrating to Los Angeles. In response to these hostile conditions, the Crips emerged to protect Black communities. Similarly, towards the end of the civil rights movement, another theory suggests the Crips aimed to replicate the Black Panther Party (BPP) as a community organization. Their objective was to provide justice and equality for African Americans. The third theory on the origin of the Crips contradicts the other two, positing that neighborhood criminals began working together to victimize Black communities.

Rather than separate theories, all three describe the origin of the Crips at different stages of their development. The Watts riots of 1965 provide the best starting point. On August 11, 1965, Marquette Frye, a twenty-one-year-old African American, and his brother were pulled over near their home by the California Highway Patrol for driving while intoxicated. According to eyewitnesses, one of the officers assaulted his mother, Rena Price, when she attempted to intervene in the arrest of her son (Horne, 1995). The situation escalated into a melee involving her, her sons, and the officers on the scene sparking outrage from the crowd that had gathered. Rena Price and her two sons were arrested. Backlash from the community resulted in what has become known as the Watts riots, or Watts Rebellion, resulting in 1,000 injuries, 4,000 arrests, and \$200 million in damage (Horne, 1995). Following the riots, the BPP formed to advocate for African Americans and protect Black communities. Their community involvement had a profound impact on Black youths in Los Angeles (Stack, 2003), and, at a time of racially charged conflicts across the country, the Crips formed as an offshoot of the BPP (Howell, 2015). One of the founders of the Crips, Raymond Washington, wanted to emulate the BPP (Alonso, 2010). In fact, he grew up on the same street as Bunchy Carter, one of the leaders of the BPP, and someone he knew personally. This association was a source of pride for Washington (Alonso, 2010). Moreover, some of the original Crip members were involved with the BPP. Dissatisfied with the pace at which the BPP was getting results, they splintered from the group (Howell, 2015). In 1971 when Washington met Stanley "Tookie" Williams at Washington Preparatory High School, the Crips officially formed. Under this alliance, they began consolidating gangs in South Central Los Angeles and emerged as the largest gang in the area. Although the Crips began as a community-oriented group, they quickly pivoted into a criminal organization when gang leaders

realized the lucrative economic opportunities of distributing narcotics and illegal firearms (Howell, 2015).

Gangs not absorbed by the Crips were left alienated and vulnerable. In response to the Crips, the Blood alliance was formed. One of the first gangs to resist the Crips were the Pirus. They declared war against the West Side Crips in 1971, and, within a few years, other gangs such as the Slausons, Brims, Bishops, and Pueblos joined the Bloods (Martínez, 2008). Some of these gangs currently exist as Blood sets, but at the time, they coalesced under a single banner. The presence of the Crips and Bloods have been reported in all fifty U.S. states with others emerging overseas. The extent to which they are connected remains unclear. In addition to the primary gang, several sets and allies exist on both sides. The rivalry among the Crips and Bloods continues today and includes several sets and allies across the country.

Since their formation, several gang sets and subsets have claimed Crip and Blood affiliation. Although most major gang sets preserve their alliances, the splintering of these gangs has also led to internal conflict. One of the main Crip-on-Crip rivalries involves the Neighborhood Crips (aka Rollin Os, aka Deuces) and the Gangster Crips (aka Trays). They were allies until 1979 when a recruit of the Eight Tray Gangsters shot and killed a member of the Rollin' 60s Neighborhood Crips. The Eight Tray Gangsters were unwilling to cooperate and turn over the recruit who had surrendered himself to police custody. In retaliation, the Rollin' 60s killed a member of the Eight Tray Gangsters. A gang war erupted with other area Crip sets being forced to take sides. Their rivalry continues today and has spilled over into other communities. The Rollin' 60s Neighborhood Crips is one of the fastest-growing gangs in the country and has expanded overseas (Rap Dictionary, 2015). One Crip set that attacks other Crip sets is the Grape Street Crips. Located in the Jordan Downs Housing Projects in Watts, they have a long-standing

feud with the PJ Watts Crips located in the Imperial Courts Housing Projects. Both gangs originated in the Watts district of Los Angeles.

Some Blood sets face similar circumstances as the Crips. The Tree Top Pirus (TTP), for example, frequently attack other Piru and Blood sets. Having originated in Compton, the Tree Top Pirus primarily feud with local gangs. They have since expanded throughout the United States with a strong presence in Maryland. Despite their continued hostilities towards the Crips and Blood sets, their main rival is the Compton Varrio Tortilla Flats, one of several Hispanic gangs at odds with the TTP (Rap Dictionary, 2015b). Another Blood set known to attack other Bloods is the Bounty Hunter Bloods. Although their primary rival is the Grape Street Crips, the Bounty Hunter Bloods maintain rivalries with the TTP, Athens Park Bloods, and several other Blood sets. The rivalry with the Grape Street Crips has led to intermittent alliances between the Bounty Hunter Bloods and the PJ Watts Crips. Bounty Hunter Bloods originated in the Nickerson Garden Housing Projects in the late 1960s as the Green Jackets and has since been reported in several cities throughout the country, including Norfolk, Virginia, and Trenton, New Jersey (United Gangs, 2020).

3.2.2.1.2 Folk Nation & People Nation

The rivalry between the Folk and People Nations originated in Chicago and has since spread throughout the United States. Larry Hoover, leader of the Supreme Gangsters, established the Folk Nation alliance in 1978. Rod Emory (1996) explains that continued bloodshed in the streets of Chicago, and the size and strength of the Supreme Gangsters led two of Hoover's rivals, the Black P. Stones and Black Disciples, seeking to align with them. Hoover first approached Jeff Fort, leader of the Black P. Stones, but negotiations broke down. The leader of the Black Disciples, David Barksdale, on the other hand, agreed to merge with Hoover's Gangsters, and the Black Gangster Disciple Nation (BGDN) was formed in 1969. Following

Barksdale's death in 1974, the BGDN eventually split into the Black Disciples, and Gangster Disciples as growing opposition among some Black Disciple members grew over Hoover's push for greater unity between Disciples and Gangsters (Omori & Thompkins, 2008). In 1978, while Hoover was serving a 150-200 year prison sentence in Stateville Correctional Center in Crest Hill, Illinois, for the murder of William Young, he orchestrated a work stoppage among inmates over allegations of abusive conditions at the prison facility. The aftermath of this insurrection inspired unity among various gangs that decided to join the Folk Nation alliance (Chicago Gang History, 2017a). One of the original Folk members was the BGDN. They eventually dropped 'Black' from their name and became the Gangster Disciples (GD) as their rivalry with the Black Disciples (BD) intensified. Despite belonging to the Folk Nation, the BD and GD remain enemies. Some of the main gangs, or sets, that pledge allegiance to the Folk Nation include the Imperial Gangsters, La Raza, Maniac Latin Disciples, and seven others.

In response to the creation of the Folk Nation and his failed attempt at merging with Hoover's Supreme Gangsters, Jeff Fort used his influence as the leader of the Black P. Stones to form his own gang alliance in Chicago, the People Nation. One of the most important members in this alliance is the Latin Kings. Established in the early 1960s by Ramon Santos (aka King Papo) and "White Sal," the Latin Kings have maintained cohesion between members by creating a sense of brotherhood that extends throughout the United States and across the globe (Chicago Gang History, 2017b). As one of the largest gangs in the alliance, the influence of the Latin Kings exceeds the People Nation. This has contributed to internal conflicts with other members of the alliance. In the early 1990s, for example, the Latin Kings went to war with the Latin Counts, Bishops, and Insane Deuces (Chicago Gang History, 2017b). Other notable gangs that

have joined the People Nation include the Vice Lords, Four-Corner Hustlers, the Bishops, and the Gaylords.

One distinction that sets the Folk and People Nations apart from other gangs is their political motivation. Ideologically, they resemble Black nationalist gangs like the Five Percenters. John Sullivan (2001) identifies several gangs in both alliances that have transformed into third-generation gangs. Jeff Fort integrated an Islamic belief system into the Black P. Stones. It was through religion that Fort sought to maintain cohesion among gang members. After being rejected by the Black Muslims and Moorish Science Temple of America, he attempted to align the Black P Stones as a terrorist branch of the Libyan government in 1986 and traveled to Libya during a travel ban to negotiate terms with President Muammar Ghaddafi (Knox, 2008a). A similar situation unfolded in 2002 when José Padilla, a member of the Latin Kings, was arrested under the Patriot Act. He was subsequently convicted for conspiring to commit murder and acts of terrorism by detonating a “dirty bomb” on U.S. soil (*Padilla v Bush*, 2002). Some argue the Padilla case provides anecdotal evidence of a terrorist connection that represents the action of an individual and is not indicative of the gang as a whole. However, George Knox (2010) provides the following threat analysis on the Latin Kings:

The Latin Kings are a Level Three gang organization: they exist as a centralized, authoritarian, violent formal organization complete with a written constitution and by-laws. As a gang, they have often taken advantage of any political corruption they could, but do so on a "case by case" basis: where it helps, they do it for business, and in this sense fit the more classic pattern of organized crime. From a perspective of size of the gang, its penetration of communities outside its epicenter (i.e., Chicago), and its propensity for violence, we would give this gang an 8 on a zero to ten point scale (the higher the number the higher the threat). Making it one of the most threatening gangs in the United States today.

Although Knox's assessment does not include terrorism, he describes the Latin Kings as being a cohesive gang with centralized leadership that has expanded beyond the city borders of Chicago,

where members are bound together by a formal set of rules and resemble the structure of organized crime groups. In fact, the Latin Kings originated as a community advocacy group for Hispanic Americans, and maintain branches throughout the world.

The Gangster Disciples are another politically motivated gang. Behind the scenes, they have built a criminal drug trafficking enterprise while attempting to control their public image through media manipulation (Knox, 2008b). The latter involved a re-branding campaign to change the meaning of GD from Gangster Disciples to “Growth and Development” predicated on six principles: love, life, loyalty, knowledge, wisdom, and understanding (Emory, 1996). Additionally, they launched their own political action group, 21st Century VOTE (Voices of Total Empowerment), to provide funding and campaign support for candidates seeking political office (Omori & Thompkins, 2008).

3.2.2.1.3 Mara Salvatrucha (MS-13) & 18th Street (Barrio 18)

In 1979, a military coup in El Salvador led to the deposition of President Carlos Humberto Romero, setting the stage for a civil war that lasted until 1992. During this time, an estimated 1 million refugees fled the country with a majority resettling in the United States (Valdez, 2000). Among the displaced population of Salvadoran migrants were street gang members and former members of the paramilitary rebel organization Farabundo Martí National Liberation Front (FMLN). Many of them settled in the Rampart District of Los Angeles, California (Adams & Pizarro, 2009). More specifically, Pico-Union, an area characterized by poor living conditions and high crime rates where residents were victimized by white, Black, and Hispanic gangs (Wolf, 2012). To protect themselves, Salvadoran youth either joined the Dieciocho (also known as the 18th Street Gang or Barrio 18), a Hispanic gang established in 1960, or formed their own gang, Mara Salvatrucha (MS-13), (Wolf, 2012). In 1996, the U.S. Government passed the Illegal Immigration Reform and Immigration Responsibility Act to

remove non-citizens convicted of crimes. A move that effectively exported American gang culture to other parts of the world (Covey, 2010). Since a majority of Salvadoran refugees had entered the country illegally, and members of MS-13 frequently broke the law, policing strategies targeted the gang for deportation.

Once MS-13 members were returned to their home country, they began recruiting within communities and among neighboring countries, which fueled their expansion into Central and South America. Their primary rival, the 18th Street Gang, or Barrio 18, followed a similar path. Deportees began recruitment campaigns to maintain their competitiveness with MS-13. Barrio 18 received the nickname “The Children’s Army” for recruiting gang members out of elementary schools (Virginia State Police, 2011). The continued growth of these two gangs and the level of violence created in the wake of this rivalry prompted the Salvadoran government to intervene in 2009. Under the leadership of President Mauricio Funes, a ceasefire was brokered between MS-13 and Barrio 18. In exchange for reducing gang violence and prohibiting recruitment in schools, the government paid MS-13 leaders \$25 million and, in some districts, placed them on the government payroll (Farah & Babineau, 2017). With the ceasefire in place, MS-13 focused on gaining community support, established military training camps, and began integrating into state law enforcement agencies. Additionally, MS-13 began to strengthen its relationship with the Sinaloa Cartel and Los Zetas to train, work, and expand (Cawley, 2013). In the United States, Luis Gerardo Vega was invited into the inner circle of the Mexican Mafia in 2011, which facilitated their foray into distributing methamphetamines (Garcia, 2016). The Mexican Mafia operates exclusively as a prison gang in the United States but is responsible for coordinating street gang activity through the Sureños alliance of which both MS-13 and Barrio 18 are members.

Although the truce between MS-13 and Barrio 18 significantly reduced gang homicides, it also had the unintended consequence of transforming MS-13 to a third-generation gang. By 2014, the negotiated ceasefire deteriorated, and MS-13 leadership began exercising their political clout. The truce showed them that they could get concessions from the government. To that end, MS-13 began leveraging its ties to the community to influence political outcomes. In some cases, political parties were charged a fee to campaign in certain neighborhoods, and in others, they directly financed political candidates. They also intervened in the politics of neighboring countries. In 2017, for example, MS-13 prohibited Honduran President Juan Orlando Hernández from campaigning in San Pedro (Farah & Babineau, 2017). Members of MS-13 threatened to kill anyone that chose to vote for him, forced campaign workers to quit, and prevented the circulation of campaign literature promoting Hernández's candidacy (Farah & Babineau, 2017). They made similar threats in El Salvador against members of FMLN running for public office. Currently, MS-13 is one of the largest gangs in the United States and has been acknowledged and targeted by the U.S. Justice Department. They have been reported in all 50 states, but their strongest presence is in Washington DC, New York, and California (Adams & Pizarro, 2009). The criminal activities of MS-13 and Barrio 18, and their cooperation with Mexican cartels have become tantamount to the debate on immigration reform. In response to the emerging transnational threat, the Federal Bureau of Investigations (FBI) established the Transnational Anti-Gang (TAG) Task Force in El Salvador (2007), Guatemala (2009), and Honduras (2011). The purpose of TAG is to collaborate with host country intelligence agencies in collecting and disseminating information on MS-13 to mitigate the adverse impact their criminal activities have on public safety in the United States (Federal Bureau of Investigations, n.d.). According to a 2018 joint investigation conducted by Insight Crime and the Center for Latin American and

Latino Studies, MS-13 has a clearly defined constitution with rules outlining what is considered appropriate conduct for their members. They are organized as a hierarchical networked hybrid structure. They maintain a hierarchical structure in El Salvador with several *clicas* throughout the United States and Central and South America. These groups range in sophistication and purpose. Some *clicas* engage in petty crimes and involve as little as ten members, while others exceed 100 members and involve more complex criminal activities. MS-13 leaders also attend mandatory meetings to coordinate strategies and discuss disciplinary action against members that violate the rules. The organization of MS-13 demonstrates a national and transnational interconnectedness not captured by the location-based approach to studying gangs.

3.2.2.1.4 Tiny Rascals Gang (TRG)

The same conditions that gave rise to MS-13 led to the formation of the Tiny Rascal Gang (TRG). In 1975, Pol Pot and the Khmer Rouge rose to power in Cambodia, concluding nearly a decade of civil war. His regime was responsible for the Cambodian genocide that left an estimated 1.5 – 2 million people dead between the years 1975 to 1979, and displaced countless others (Valdez, 2000). A significant number of Cambodian refugees sought asylum in the United States. From this immigrant group, the Tiny Rascals Gang formed in California in the mid-1980s. Similar to Salvadoran refugees around the same timeframe, the re-settlement process placed Cambodian families in poor neighborhoods with limited access to resources, leaving them vulnerable. They were frequently victimized by Black, Hispanic, and white gangs. Additionally, Al Valdez (2000) points out that the assimilation process for Cambodian youths led to a conflict between the traditional values espoused by their parents and Western norms. This led to the disintegration of the family unit as many chose to leave home and seek independence on the streets. At first, they formed decentralized youth conflict groups defending small swaths of territory, but over time they coalesced to form the TRG.

One behavioral characteristic that distinguishes this gang from other gangs is that they are nomadic. Members of the TRG remain mobile, viewing territory as transactional rather than permanent (Valdez, 2000). The 2010 California report on organized crime describes the process of joining TRG as "walking in" and then "jumping in." The former refers to committing a crime. This can range from non-violent crimes such as breaking and entering or theft to more serious offenses such as murdering a rival gang member. The latter step requires willingly being assaulted by members of the TRG. Originally, membership was strictly reserved for Cambodians. This requirement has been relaxed over time and membership from other Asian ethnicities is allowed. The TRG is considered the largest Asian gang in the United States (North Carolina Correctional Officer Training, 2016).

3.2.2.2 Prison Gangs

With a tendency to be nationally organized and maintain influence over street gangs, prison gangs are frequently described as outposts of "supergangs" (Knox, 1994; Sanchez Jankowski, 1991; Venkatesh & Levitt, 2000). Studies conducted of Chicago gangs have shown that "gang lords" have maintained, or even increased, their power while incarcerated (Papachristos, 2001; Venkatesh, 2000). Defining a prison gang, however, remains challenging because street gangs operate in the prison system, and prison gangs have increasingly become involved in street-level activity. Unless renounced or through the completion of a Security Threat Group (STG) step down program, street gang members often maintain their gang affiliation when incarcerated. The term STG is ascribed to all inmates considered high-risk for disruptive behavior (Knox, 2012). This designation refers to street gangs, prison gangs, and other inmates that harbor extremist political ideologies such as members of the Sovereign Citizens Movement. Despite the presence of street gangs in prison and prison gangs on the street, however, the main distinction separating these types of gangs is their origin (Knox, Etter, & Smith, 2019). Contrary

to street gangs that “form on the street and operate in neighborhoods,” the NGIC (2015) defines a prison gang as, “A criminal organization that originates in the penal system and continues to operate within correctional facilities throughout the United States. Prison gangs are self-perpetuating criminal entities that also continue their operations outside of prison” (p. 15).

Unlike the incarceration of Bloods and Crips that import their gang affiliations into the prison system, the Mexican Mafia, Nuestra Familia, Aryan Brotherhood, and Black Guerilla Family are considered “pure” prison gangs (Knox, 2012).

Further, prison gangs have a higher level of organization, discipline, and observance of formal gang structures than street gangs (Pyrooz & Decker, 2019). Within the confines of prison, clearly defined power roles emerge, and gang members can either abide by the rules or face the consequences, up to and including death. In some prison gangs, membership is a lifelong commitment. The Aryan Brotherhood (AB), for example, maintains a “blood in, blood out” policy (Southern Poverty Law Center (SPLC), 2005). Joining the gang requires recruits to murder an enemy of the AB (blood in). After becoming a member, the only way to leave the gang is through death (blood out). This sentiment is reflected in the blood oath taken by each member of the AB: “An Aryan brother is without a care/He walks where the weak and heartless won't dare/For an Aryan brother, death holds no fear/Vengeance will be his, through his brothers still here” (SPLC, p. 4).

William Hankins (2014), a prison gang investigator at San Quentin Correctional Institute chronicles the rise and spread of four prominent U.S. prison gangs, or what he refers to as the “axis of evil.” One of the earliest of these prison gangs to form was the Mexican Mafia (also referred to as La Eme or the Black Hand) in the late 1950s by Luis “Huero Buff” Flores, Richard Ruiz, and several other Hispanic Americans. The founding members understood that their

criminal lifestyle would keep them in prison for most of their lives. In order to navigate the dangers of prison life, their interests were better served together rather than as individuals (Knox, Etter, & Smith, 2019). Not only could they better guarantee their safety, but they could profit while carrying out their prison sentence. Instead of a distinct leader or “shot caller,” members of the Mexican Mafia have a flat egalitarian structure (Hankin, 2014). Similar to other prison gangs, however, they adhere to a strict code of conduct to maintain order. In *State of California v Luis Maciel* (2007), Special Investigator Sergeant Richard Valdemar of the Los Angeles Sheriff’s Department Prison Gang Section provides testimony on the rules of the Mexican Mafia:

1) "Carnal," is applied to one with membership in the Mexican Mafia. All others who are merely associated with the gang are referred to as "Camarada" or "Camrade."

2) Loyalty to the gang is valued above all else, including the member's family, their local street gang, and God.

3) Dropping out of Erne is against the gang's rules. If a person disassociates from Erne, he will be placed on a "hit list" or "green light list," which means that the "dropout" must be killed by any Erne member who is in proximity, and has the ability to kill.

4) A Mexican Mafia gang member may only be killed by another member. A member of Erne who has an opportunity to kill someone on the hit list, but does not take action, risks being placed on a hit list and killed.

5) Members of the Mexican Mafia are expected to make a living through criminal enterprises such as drug dealing. Part of the funds a member raises from drug activities goes to support gang members who cannot support themselves.

6) The sanction of death will be imposed on any person who robs a dealer who pays taxes to the Mafia.

7) Mexican Mafia has a rule which prohibits members from hurting innocent children. A street gang member who participates in an act which results in accidental death of a child will be placed on a "hit list."

8) The Mexican Mafia sometimes uses a person who is being considered for membership, or new members, to commit murder, as a test of the person's fortitude, courage and fighting ability.

9) There is a special mentorship relationship between a Mexican Mafia member and someone he has recruited and successfully sponsored for membership. The mentor

"raises his hand" for the new member, meaning he teaches the recruit how to conduct himself as a member of the gang (pp. 11-14).⁴

The set of clearly defined rules and enforcement of those rules provides the Mexican Mafia, and other prison gangs like them, the organizational structure necessary to maintain control inside the prison. Moreover, the cohesion of the Mexican Mafia allows them to influence criminal activity outside the prison. According to the Federal Bureau of Investigations (FBI) (1974a), "The (Mexican) Mafia had come to the realization that if the fear of the prison inmate is controlled, it must be necessarily so, that the criminal operating in free society, must be aware of this power" (p. 45). Based on this premise, the Mexican Mafia used fear and intimidation to build their criminal enterprise in 1971. Members of street gangs are particularly vulnerable, given their tendency to be repeat criminal offenders. David Skarbek (2011) (as cited in *United States v Aguirre et al.*, 1994, pp. 4-5) points out, "The Mexican Mafia is able to assert control and influence over gang members outside the penal system because the gang members do not want their members to be assaulted, and because the gang members know that, if they are incarcerated, they will need the protection of the Mexican Mafia while they serve their sentences" (p. 706). The designation "supergang" comes from the ability of prison gang leaders to maintain control of criminal activity inside and outside the prison setting.

One street gang in particular that falls under the Eme banner are the Sureños, a group of loosely affiliated Hispanic gangs originating in southern California. The Mexican Mafia rules by proxy using members of the Sureños alliance to carry out their orders on the street. These gang members have been described as "foot soldiers" whose performance and dedication are monitored by the Mexican Mafia the same as a professional sports team scouts college recruits

⁴ Ramon "Mundo" Mendoza (2012), a former member of the Mexican Mafia from 1970-1977, provides a firsthand account of the rules.

(Rocky Mountain Information Network, 2008). Individuals that meet the high standard of the Mexican Mafia are invited to join. Some of the notable street gangs that belong to the Sureños include Florencia 13, MS-13, and 18th Street. While the latter two gangs are mortal enemies, it is not uncommon for Sureño sets to fight. When members of these gangs go to prison, however, they set aside their differences as representatives of the Mexican Mafia.

The North-South division of Hispanic gangs in California led to the creation of Nuestra Familia (Spanish for Our Family) in 1968. While the Mexican Mafia provided protection for Mexican American inmates, they treated northern Californians with contempt (FBI, 1977). Therefore, Nuestra Familia formed among northern Californian inmates to protect against the violence directed towards them from the Mexican Mafia and other gangs. In 1971, they established a constitution outlining a paramilitary organizational structure (FBI, 1977). Contrary to the flat leadership style used by the Mexican Mafia, Nuestra Familia is hierarchical led by a General and Strategic Advisor on top, and followed by several Captains whose authority is ranked 1-10. At the bottom of the power structure are Lieutenants, Regimental Commanders, Squad Leaders, and Soldiers. Similar to the relationship between the Mexican Mafia and Sureños, however, Nuestra Familia rules by proxy using the Norteños alliance to carry out street-level criminal activity. Although not as closely tied to their surrogate gangs like the Mexican Mafia and Sureños outside of prison, members of the Norteños are still required to pay tribute to Nuestra Familia while incarcerated (FBI, 1977).

To assist in their rivalry against the Mexican Mafia, Nuestra Familia has formed alliances with other prison gangs (Knox, Etter, & Smith, 2019). One of their notable allies is the Black Guerilla Family (BGF), an African American prison gang founded in 1966 by George “The Dragon” Jackson, George “Big Jake” Lewis, and W. L. Nolen in San Quentin. According to the

FBI (1974b), "The BGF is formed from members of the Black Panther Party, Black Muslims and the Republic of New Africa within the California Department of Corrections who thought that their groups were moving too slow. They formed the BGF to identify with" (p. 12). The BGF has since expanded throughout the rest of the California prison system and has been identified in several other states, including Maryland, West Virginia, Washington, Pennsylvania, North Carolina, and Missouri (NGIC, 2011). Similar to other prison gangs, the BGF has established criminal activity on the street. However, it is their extremist ideology and connection to terrorist organizations that make the BGF a high-level security risk. Jackson reified the BGF under Maoist principles where class struggles are defined along racial lines, and state representatives, including law enforcement, are viewed as inimical manifestations of African American oppressors (Knox, Etter, & Smith, 2019). To this end, the BGF has a history of coordinating with several validated terrorist organizations. Under the Black August Organizing Committee (BAOC), they maintain ties to Weather Underground, the Black Liberation Army, the Prairie Fire Organizing Committee, and has supported revolutionary movements in El Salvador, Iran, and other developing countries (FBI, 1981).

Another important ally of Nuestra Familia and the BGF is Dead Man Incorporated (DMI). According to the Gang Identification Task Force on white prison gangs (n.d.), DMI was created as an offshoot of the BGF with a similar *modus operandi*. Despite being close with the BGF leadership and respected among inmates in the Maryland Department of Corrections, one of the founders of DMI, Perry Roark, was prohibited from joining the BGF because membership was reserved for Black inmates. Established in the late 1990s, the BGF leadership sanctioned the creation of DMI in their image, but for white members. They harbor a similar antipathy towards the state and promote acts of sedition to undermine government authority. In addition to the

Maryland prison system, DMI has been identified in correctional institutes across North Carolina (NGIC, 2011).

The Mexican Mafia has also formed alliances with other prison gangs. One of their most powerful allies is the Aryan Brotherhood (AB), also referred to as “The Brand.” An FBI Freedom of Information Act Report (1982) on the Aryan Brotherhood details the origin of this relationship. Members of the Blue Bird Gang and other white inmates in San Quentin State Prison formed the AB in 1967 to protect themselves against Black and Hispanic gangs. Shortly after their formation, they adopted white nationalist symbols such as the swastika, dual lightning bolts (the SS lightning bolt is a symbol of Nazi Germany), and HH (Heil Hitler), and quickly spread throughout the California prison system. On July 3, 1972, Jessie Renteria Castro, a ranking member of Nuestra Familia, was stabbed to death by a member of the AB at Deuel Vocational Institution in Tracy, California. Because the Mexican Mafia had been at war with Nuestra Familia *and* members of EME were friends with members of the AB, the two gangs found it mutually beneficial to form an alliance after the assassination of Castro. Despite identifying as a white nationalist prison gang, the AB has habitually aligned with other minority gangs like Mexicanemi, a Hispanic prison gang that originated in Texas in 1984, and several Mexican Drug Trafficking Organizations (DTOs). In 1996, the AB was hired by the American Mafia. John Gotti, head of the Gambino Crime Family in New York City, was assaulted by Walter Johnson while serving a life sentence at the U.S. Federal Penitentiary in Marion, Illinois. After being attacked, Gotti hired the AB for protection. This alliance raised the profile of the AB and provided them access to channels outside the prison to manufacture and distribute narcotics (SPLC, 2005). As a result, the AB has gradually become more focused on profiteering than

enforcing a white nationalist agenda (SPLC, n.d.). This move has caused several white power groups to disavow the AB and label them “race traitors” (Montaldo, 2019; Reeve, 2013).

Tracking the AB is difficult as “copycat gangs” have emerged with the expansion of the AB throughout the state and federal prison system (Anti-Defamation League (ADL), 2016). To preserve their image, however, AB members have been known to react violently when encountering “posers,” often making them burn or cut off any tattoos that would tie them to the gang (ADL, 2016; Montaldo, 2019). In addition to the appropriation of the Aryan Brotherhood namesake by unaffiliated white inmates, the term “Aryan” is commonly used by other white supremacist gangs creating confusion on how these gangs are affiliated. For example, the Aryan Circle, established in 1985 in the Texas prison system, has been identified in Montana, Pennsylvania, Tennessee, North Carolina, and Oklahoma (NGIC, 2011). They use similar identifiers to the AB, such as the dual lightning bolts and swastikas, but often rival the Aryan Brotherhood for control over the drug trade (ADL, 2009). Despite their differences, however, white nationalist and Aryan gangs identify to some degree as Peckerwoods. The term “Peckerwood” is a racial epithet meaning “white trash” that has been internalized by gangs where the majority of members are white (ADL, 2020). In the tiered system of the AB, Peckerwood is the name assigned to new recruits (ADL, 2016). When new members commit more serious crimes, they can advance in rank and authority within the brotherhood. The term Peckerwood has also been adopted by several Outlaw Motorcycle Gangs (OMGs), the subject of the next section.

3.2.2.3 Outlaw Motorcycle Gangs (OMGs)

The final major cultural gang type involves outlaw motorcycle gangs (OMGs), also referred to as One Percenters. After the Hollister Riot in 1947, a representative for the American Motorcycle Association stated, “99% of the motorcycling public are law-abiding; there are 1% who are not” (Bosmia et al., 2014, p. 523). The 1% moniker was thus adopted by biker gangs

and is displayed in patches as a source of pride to differentiate criminal from non-criminal motorcycle clubs (Quinn, 1987; Quinn & Forsyth, 2009). According to the National Gang Intelligence Center (2015), “OMGs are ongoing organizations, associations or groups of three or more persons with a common interest or activity characterized by the commission of, or involvement in, a pattern of criminal conduct. Members must possess and be able to operate a motorcycle to achieve and maintain membership within the group” (p. 22). As of 2011, there were approximately 44,000 OMG members in the United States (NGIC, 2011). The largest of these motorcycle clubs have been called the “Big Five.” They include the Hells Angels, Pagans, Outlaws, Bandidos, and Sons of Silence (Hayes, 2018; Richardson, 1991). As the largest motorcycle clubs, several support clubs of smaller biker gangs maintain alliances with them. One main difference between OMGs and the other two gang types is their organizational structure. OMGs have established a presence throughout the United States and internationally. They are organized into chapters that meet frequently and stay connected through a formal hierarchy where leadership roles are clearly defined in accordance with club bylaws. Similar to the constitution established by the Mexican Mafia, the level of organization demonstrated by OMGs undermines the lack of national cohesion espoused by location-based approaches to describe gang behavior. According to California Department of Justice Intelligence Specialist Anna Richardson (1991), prior to a 1983 RICO investigation into the Pagans MC, leaders of the organization went as far as to vote on which chapters would distribute narcotics. She provides the following description on the organizational structure of the Hells Angels:

Unlike most other outlaw motorcycle gangs, the Hells Angels do not have a national or international president but instead have regional officers who are chosen to represent various chapters (a region) at regional meetings. There are two slates of officers; one to represent the East Coast and a second, the West Coast. Monthly meetings are held by these officers. These meetings also include one or two representatives from the opposing coast; not to vote but to report back to their region any new business. All major decisions

are voted on worldwide. In states with multiple chapters, a state meeting is also held in addition to the chapter's weekly meetings (p. 3).

The spread of OMGs can be attributed to their nomadic culture of traveling across the American landscape. Richardson provides a succinct description of the evolution of motorcycle gangs. She points out that traveling is one of the characteristics of the motorcycle lifestyle, which is encouraged through annual "bike runs" and rallies that occur at various locations. One of the largest is the Sturgis Motorcycle Rally in South Dakota. Other locations include Daytona Beach, FL, Myrtle Beach, SC, Laconia, NH, Austin, TX, and Durango, CO for the Four Corners Motorcycle Rally. In the late 1960s, as larger motorcycle clubs canvassed the country, they began absorbing smaller clubs and establishing different chapters to act as hubs when they were on the road. At the time, they showed irreverence toward law enforcement, but their criminal activity "lacked a certain focus." However, Richardson makes the following observation of OMGs after 1970 that supports the assertions made by Brenda Coughlin and Sudhir Alladi Venkatesh (2003):

In the 1970s, a drug culture evolved in this country. First as participants and slowly as suppliers, outlaw motorcycle gangs were drawn into this drug culture. Soon, gangs learned there was money to be made by organized criminal activities. In the 1970s, they became profit oriented.

Today, outlaw motorcycle gangs are sophisticated organizations that utilize their affiliation with a motorcycle club as a conduit for criminal activity. The nature of their activity is generally conspiratorial, and their goals are attained through the use of violence and intimidation. Because of their expertise in sophisticated weaponry and their international intelligence networks, outlaw motorcycle gangs pose a formidable threat to society in general and specifically to law enforcement (pp. 5-6).

Although not exclusive to OMGs, another indicator of their influence is the ability to attract military-connected recruits. A 2016 flier distributed by the U.S. Army Criminal Investigation Command indicates that servicemembers often prefer motorcycles as a low-cost transportation alternative to owning an automobile and often participate in a subculture that brings motorcycle

enthusiasts together. Joe Ethridge, chief of CID's Criminal Intelligence Division, warns, "Many service members, civilian employees, and family members attend functions that are designed for motorcycle riders and the brotherhood of the biker subculture... Outlaw Motorcycle Gangs will attend these functions as well. It is well documented that OMGs and support clubs recruit military members into their ranks" (U.S. Army, 2016, pp 1-2). Street gangs have also been known to actively recruit military personnel (Eyler, 2009). In other cases, they encourage their members to join the armed forces for access to military training and resources that benefit the gang on the streets (Eyler, 2009; U.S. Army Criminal Investigation Command, 2007). In addition to their affinity for motorcycles, however, several OMG members are military veterans, placing them in a unique position to leverage their shared experiences to target military recruits.

Arguably, the largest and most publicly recognized of the Big Five motorcycle clubs is the Hells Angels. Shortly after the Hollister Riot, in 1948, Otto Friedl, Arvid Olsen, and other members of the Pissed Off Bastards motorcycle club splintered off to form the Hells Angels (a name taken from the WWII bomber), in Fontana/San Bernardino, California (Hayes, 2018). According to George Knox, Gregg Etter, and Carter Smith (2019), the Hells Angels currently have 238 chapters spread across the United States, Canada, Europe, Africa, Australia, and South America. Their expansion has led to the formation of alliances with street gangs, prison gangs, and organized crime groups. In Arizona and Idaho, chapters of the Hells Angels have been linked to the Sinaloa Cartel, one of the most powerful drug trafficking organizations in Mexico (DEA, 2018). Other chapters have been tied to the Gambino and Buffalino crime families in New York and the Licavoli family in Cleveland (Richardson, 1991). An association between the Hells Angels and the Genovese crime family founded by Charles "Lucky" Luciano has also been reported (Richardson, 1991).

The other four motorcycle gangs that make up the “Big Five” have followed a similar pattern of formation, expansion, and connection. Founded by Lou Dobkins, the Pagans formed in 1959 in Prince George’s County, Maryland (Hayes, 2018). Primarily concentrated in the eastern United States, and without an international presence, they have been one of the least expansive OMGs of the Big Five (Hayes, 2018). A 1983 RICO case against the Pagans nearly dismantled them completely, but they have since rebounded and begun to grow in strength (Richardson, 1991). Their continued growth has been facilitated by the connections with other criminal groups like the Aryan Brotherhood (SPLC, 2005), Mexican DTOs in Wyoming (DEA, 2018), and their involvement with the Bruno crime family, an Italian-American Mafia group from South Philadelphia (Richardson, 1991).

The oldest of the Big Five is the Outlaws MC. Although the founding members of the club are unknown, they formed in McCook, Illinois, in 1935 (Hayes, 2018). Similar to the Pagans, the Outlaws MC maintain a lower profile than some of the other One Percenters. They have, however, expanded throughout the United States and established several international charters. Moreover, unlike most other OMGs, they allow members to seamlessly transfer their membership from one chapter to another (Richardson, 1991). That is to say, their members are not beholden to a single chapter or geographic locale.

One of the Big Five OMGs similar to the Hells Angels in terms of reputation and exposure are the Bandidos. The Bandidos were formed in Texas by former Marine and Vietnam veteran Don Chambers in 1966 (Hayes, 2018). Richardson highlights that recruits, also referred to as prospects, are required to visit all of the Bandido chapters within their first year. This allows them to become familiar with each chapter when it comes time to vote on their membership and makes it difficult for undercover officers to infiltrate the gang. Similar to other

Big Five members, the Bandidos have expanded throughout the United States and currently have chapters in thirty-one other countries (onepercenterbikers.com, 2020). The Bandidos maintain connections to the Gulf Cartel and Los Zetas in Texas, and other Mexican DTOs in New York (DEA, 2018).

Finally, the latest addition to the big motorcycle clubs is Sons of Silence. They were founded in 1966 by Bruce “Dude” Richardson in Niwot, Colorado (Hayes, 2018). An alliance with the Hells Angels accelerated their expansion into the Midwest and triggered a rivalry with the Outlaws (Richardson, 1991). In 1998, the Sons of Silence opened their first international chapter in Munich, Germany, where they currently have six chapters (Hayes, 2018). They also maintain connections to various Mexican DTOs in Florida and Wyoming (DEA, 2018).

3.3 Conclusion

Gangs follow a pattern of formation, expansion, and connection. In the formation stage, external stimuli lead individuals to coalesce into a group. The different settings in which this takes place contribute to cultural gang types categorized as street, prison, or outlaw motorcycle gangs (OMGs). For example, prison survival led to the formation of the Mexican Mafia, social inequality led to the formation of the Crips, and the Folk Nation formed to project strength and unity akin to Hoover’s work stoppage in Stateville Correctional Center. Individuals sidelined and adversely impacted by these gangs formed their own gang in opposition to the status quo. Nuestra Familia, the Bloods, and the People Nation emerged in defiance of the Mexican Mafia, Crips, and Folk Nation, respectively. As rivalries take shape, tensions over security and resource competition fuel gang proliferation in which they respond by seeking out alliances through (trans)national networks. The decisions that gangs make inherently place them on different trajectories where transformation occurs across three dimensions that motivate behavior. This includes territory, profit, and ideology at various points in time.

It is not the intention of this chapter to define gangs, but rather to examine gang typologies as part of the ongoing debate. Gang typologies are useful in developing a definitional framework separate from the sociological perspective that emphasizes environmental factors and a law enforcement lexicon contingent on geographic specificity. Territorial considerations, for example, are influenced by gang culture and evolution. The mobility of prison gangs is restricted to correctional institutions, while OMGs are nomadic. Neither gang type is particularly interested in territory. Street gangs, on the other hand, are more territorial, but their position on the evolutionary spectrum determines how territory is prioritized. According to John Sullivan, first-generation gangs are primarily motivated by territory, while second-generation gangs focus on territory insofar as it allows them to protect market share. More importantly, gang typologies help collate gangs with other criminal groups. Some federal definitions of ‘gang’ qualifies them as distinct from other criminal groups. A definition written by the National Gang Center (1999) reads, “A gang is a group of youths or young adults in your jurisdiction whose involvement in illegal activities over months or years marks them in their own view and in the view of the community and police as different from most other youthful groups. Do not include motorcycle gangs, hate or ideology groups, prison gangs, or other exclusively adult gangs.” However, across Sullivan’s evolutionary scale, some gangs have more in common with organized crime and terrorist groups. Using gang typologies to develop gang definitions provides the nuance necessary to differentiate gangs from other criminal groups. When do gangs make the transition to mafia, cartel, or terrorist organization? At a minimum, second-generation gangs that emerged after 1970 resemble organized crime groups with ties to transnational drug trafficking organizations. Similarities can be inferred between 2-G gangs and how the FBI defines transnational organized crime as:

Those self-perpetuating associations of individuals who operate transnationally for the purpose of obtaining power, influence, monetary and/or commercial gains, wholly or in part by illegal means, while protecting their activities through a pattern of corruption and/or violence, or while protecting their illegal activities through a transnational organizational structure and the exploitation of transnational commerce or communication mechanisms.

Moreover, third-generation gangs resemble terrorist organizations. As I conclude this chapter, the U.S. Department of Justice has designated MS-13 as a terrorist organization in the United States. Other gangs demonstrate a similar propensity for terrorism. The Black Guerilla Family has ties to terrorist groups and engages in seditious activity around the world while the Black P. Stones offered to work as a terrorist branch of the Libyan government. In short, understanding gang typologies is an important contribution to defining gangs as they continue to evolve.

CHAPTER 4

**CENTRALITY AND COMMUNITY DETECTION: A MACRO-LEVEL
APPROACH TO UNDERSTANDING THE NETWORK STRUCTURE OF
GANGS IN THE UNITED STATES**

A critical step toward understanding the national structure of gangs is to analyze their connections with other gang types. For this chapter, I examine the relationships between gangs at the macro-level using social network analysis (SNA). Although the application of SNA in criminology is limited, the theoretical foundation for analyzing gangs is well-documented. The basic principle behind SNA is studying the "interconnected system of things" to expose patterns of relationships. Gangs are social entities that cultivate relationships at the macro- (between gangs) and micro- (between gang members) levels. A similar macro-level approach is used in the Big Allied and Dangerous (BAAD) model that uses SNA to study terrorist organizations. I incorporate the BAAD framework in this study by building an adjacency matrix of gang connections to calculate centrality measures in three separate models. The first is a baseline model that does not differentiate between allies and rivals (referred to as unweighted ties) and includes gangs and Mexican Drug Trafficking Organizations (DTOs), or cartels. Since the context of these relationships matter, the second model, gang nexus model 1, includes gangs and cartels and distinguishes between positive (allies) and negative (rivals) ties (referred to as weighted ties). The final model, gang nexus model 2, is similar to gang nexus model 1 but with the cartels removed from the network. The results are intended to map the interconnectedness of gangs, determine the relative importance of gangs in the network, comparatively analyze gangs formed by native groups to gangs formed by immigrant groups, and assess the extent to which

rivalries and cartels impact the gang network structure. All of which are important to understand the macro-level gang structure from a network perspective.

As a strand of "big gang theory," the macro-level approach to gang studies is sometimes criticized as misconceiving the organization, cohesion, and size of gangs (Howell, 2012). This argument characterizes gangs as decentralized groups lacking cohesion, with no definitive affiliation where members adopt gang names popularized by public discourse like Bloods or Crips. Despite this criticism, the evolutionary gang types proposed by John Sullivan discussed in the previous chapter, posits that there are three generations of gangs where second- and third-generations evolve into "net warriors" and are characterized as cohesive groups with centralized leadership. Whereas second-generation gangs are market-oriented and motivated by profits, third-generation gangs are ideologically-driven to invoke political change. Both rely on cultivating networks of relationships. The Drug Enforcement Agency also differentiates between 'neighborhood' and 'national' gangs. Similar to the location-based perspective on gangs, they describe neighborhood gangs as disorganized loosely affiliated groups. On the other hand, national gangs demonstrate a high degree of organization with a clear hierarchy and set of rules. In addition to addressing the criticism of macro-level gang analysis in this chapter, I support the findings of this study in Chapter 5 by analyzing the geospatial distribution of gang members at the micro-level to show the relationship between gangs and gang members across the country.

4.1 Social Network Analysis and Gang Studies

Over the years, social network analysis (SNA), or more generally, network analysis, has been formalized into an empirical-analytic research method adopted by a wide range of disciplines (Freeman, 2004). Mark Newman (2015) explains the purpose of studying networks. According to him, "A network is a simplified representation that reduces a system to an abstract structure capturing only the basics of connection patterns... Networks are thus a general yet

powerful means of representing patterns of connections or interactions between parts of the system” (p. 2-3). These relationships, or the "interconnected system of things," make SNA appealing to study gangs. Especially when variable independence, a common assumption in statistical modeling, is insufficient to make inferences on system behavior. Steven Radil, Colin Flint, and George Tita (2010) add, “For social network analysis, similarly patterned actors are seen as occupying distinct ‘social positions’ in network structures, which is to say that they are similarly embedded in the webs of relationships that constitute the social network in terms of links to other actors... As one of the primary goals of social network analysis is to formalize the theoretical concepts of social position, social network analysis is a useful way to explore the concepts of embeddedness in a quantitative fashion through highlighting different social positions as realized in networked data” (p. 314). Because systems, or groups of interconnected objects, are present in both the physical and behavioral sciences, understanding relationships between these objects can provide valuable insight on social phenomena.

SNA uses graph theory to illustrate pairwise connections, or edges (ties), between sets of vertices (nodes) that are either directed (asymmetric ties) or undirected (symmetric ties). The most rudimentary interpretation of graph theory provides a visualization of network components and their relationship to one another. More advanced SNA, however, provides a way to quantify these relationships. For this study, I conduct a network analysis of gangs using centrality measures to make inferences on gang structures at the macro-level. In graph theory, centrality refers to the importance of nodes by their position in the network relative to other nodes across a varied set of dimensions (Luke, 2015). I use these results to compare the network influence of gangs formed by groups native to the United States to gangs formed by immigrant groups, the extent to which rivalries impact gang centrality, and the role of Mexican Drug Trafficking

Organizations (DTOs) on gang influence in the network. The implications of this research contribute to our understanding of gangs in the United States from a network perspective.

The benefits of SNA techniques on the study of gangs has been highlighted by several scholars in the field of criminology using theoretical paradigms. Jenny Piquette, Chris Smith, and Andrew Papachristos (2014) describe the intrinsic value of using SNA to further our understanding of the gang phenomenon. “At their core, street gangs are social networks created by the coming together, socializing, and interacting of individuals in particular times and in particular places. The employment of social network analysis has the potential to examine patterns of interaction among gang members and gangs, illuminate structural variation across gangs, and measure the influence of gang networks on individual action.” Whereas criminal behavior is often explained as a function of attributional data such as socioeconomic conditions, SNA emphasizes relational data to explore structural patterns embedded in the connections between individuals and groups (McGloin & Kirk, 2010). According to Michael Sierra-Arevalo and Andrew Papachristos (2015), “It is exactly the enhanced “groupness” of gangs that differentiates them from common, passing delinquent groups, and which makes gangs analytically interesting. While gangs are made up of individuals, the gang's life and culture are largely defined by group processes and resulting structures. Importantly, not only do relationships exist *within* gangs, but the relationships between gangs can also shape the structural reality of gang life” (p. 157). Despite the benefits of studying gangs through the lens of SNA, this remains an under-researched area in criminology (Sierra-Arevalo & Papachristos, 2015). Andrew Abbott (1999) attributes this gap in the literature to the “variables paradigm” supported by regression techniques that privilege abstract conditions such as poverty or education. He claims, “Within variable-based thinking, one allows for a few “interactions” to modify this single

causal meaning contextually, but the fundamental image of variables' independence is enshrined in the phrase "net of other variables" and in the aim to discover this net effect, whether through experimental or statistical manipulation" (p. 197). To his point, paradigmatic shifts within scientific communities often take time to demonstrate the explanatory value of new techniques and require a body of researchers willing to accept that change (Kuhn, 1962).

However, SNA, as an analytic tool, was introduced in 1934 with Jacob Moreno's seminal work in developing the first sociogram. Before Moreno, Emile Durkheim and Ferdinand Tönnies had begun developing a concept of SNA in the late 1890s. Although earlier conceptions of SNA were available, it was not until the 1950s that modern SNA became a formal research method. Later in the 1980s, its usage became popular among social and behavioral scientists (Freeman, 2004). Sierra-Arevalo and Papachristos point out that criminologists often lag behind other disciplines in their application of novel research methods. This lag can be explained on the merits argued by Abbot. Unwillingness to change or resistance to novel methodological approaches impacts research design for a particular field of study. However, this is a significant gap for a research method that seems well-suited to improve our understanding of gangs. As SNA has transformed from an amorphous concept to a formal method of research, it can be argued that the SNA tools to study gangs have existed for over a century.

Another possible explanation for the delay in using SNA concepts is the lack of publicly available data on gangs to generate meaningful results. In order to gain access to gang data, special considerations are required and finding a law enforcement agency willing and able to supply reliable data is challenging (Gunnell, Hillier, & Blakeborough, 2016). Despite these impediments, some attempts have been made to move beyond the theoretical application of SNA in studying gangs to a more empirical approach. In completion of his dissertation at the

University of Arizona, Andrew Fox (2013) uses social network analysis to study the internal social structure of gangs in Glendale, Arizona, from 2006 - 2010. With data provided by the Glendale Police Department, his findings indicate that local gang members maintain loose affiliations with the gang at large while forming smaller, cohesive, subgroups, and common associations of friendships between gang members and different cliques. Further, approximately 80% of gang members remained in the network for a single year, indicating the salience of gang participation and short duration of gang activity. Although the results of his study reinforce the conclusions proposed by other qualitative studies, Fox works with a small sample size averaging 74 gang members for each year. Moreover, his research is localized and does not identify the gang attributes such as affiliation, generation, or type. For example, his results appear consistent with first-generation gangs in terms of politicization, localization, and sophistication. "*First generation* or "turf" gangs are limited in political scope. They are localized and not highly sophisticated" (Sullivan, 1997, p. 97).

Similar to the study conducted by Fox, Jean McGloin (2006) takes a localized approach to study individual gang members in Newark, New Jersey. Using funding from the U.S. Department of Justice, McGloin applies SNA to the "problem analysis" of gangs. Her research is motivated by assisting law enforcement in improving the strategic efficacy of gang mitigation programs. One example she provides is, "Continuing to analyze the network of relationships will provide insight on whether an intervention strategy is further disorganizing the gang(s), or having the unintended consequence of increasing cohesion, and thereby raising the risk of more crime. At the same time, should positions in the gang shift, or new people move into structurally important positions within the gang, interventions may have to address new individuals or alter

current strategies” (p. 24). McGloin’s contribution both demonstrates the efficacy of SNA on the study of gangs and illustrates the policy implications.

Although taking a similar localized approach as Fox and McGloin, Amy Carpenter and Stacey Cooper (2015) conduct a macro-level network analysis of gangs and cartels in the San Diego-Tijuana region to improve community resilience. Unlike Fox, Carpenter and Cooper explicitly target second-generation gangs for their research. According to Sullivan, "This gang is interested in market protection, and focuses its criminal endeavors on drugs as a business. Second generation gangs are more cohesive, with greater centralization of leadership. Drug-selling becomes a group rather than individual activity. Drug gangs use violence to control competition and assume a market rather than a turf orientation" (p. 95). The authors also differentiate between street, prison, and outlaw motorcycle gangs (OMGs), whereby each plays a different role in the network. In the context of structural relationships between gangs, they conclude that Hispanic gangs maintain familial ties in Mexico, bringing them closer to DTOs, prison gangs often arrange agreements between cartels and street gangs, and OMGs are tangential to the overall network structure. Although Carpenter and Cooper identify factors relevant to community resilience in the San Diego-Tijuana region, the overall gang structure presented is a small piece of a much larger puzzle that could potentially impact their conclusions on the structure of gangs in the region. For example, they conclude that the Hells Angels exist as a peripheral gang whose sole connection in the network is with the Mongols, a rival OMG. While this might be true for the San Diego-Tijuana border, other Hells Angels charters in Arizona, Idaho, and New Jersey have ties to Mexican DTOs (DEA, 2018; NGIC, 2011). Expanding the macro-level analysis would benefit this study since the Hells Angels are a national gang with the potential to access narcotic supply chains outside the San Diego-Tijuana

area. Having ties to Hells Angels charters with connections to Mexican DTOs, for instance, would reduce the necessity for local gang partnerships without diminishing their role in drug trafficking as suggested by Carpenter and Cooper. By accounting for the relationships outside the San Diego-Tijuana area, the authors can make more robust conclusions of their findings in terms of community resilience.

Gangs, particularly OMGs or second-generation gangs, are more complex than what can be learned from strictly localized approaches. The Hells Angels, in particular, have charters throughout the world that facilitate criminal activity. In total, they have ninety-eight charters spread across twenty-seven states, with twenty-four in California alone, and several charters in sixty other countries, including six in Mexico (Hells Angels MC, n.d.). These numbers do not take into account the fifteen support clubs of the Hells Angels that independently establish their charters. Neglecting these connections ignores the possibility of distribution outside the narrow purview of local analyses, an important distinction that has wide-ranging implications for understanding the network structure of gangs.

Using SNA to study gangs at the local level provides a valuable, yet limited, perspective on gang structures, but does not go far enough in understanding the national network of gangs. A macro-level national assessment of gang structure is necessary to make definitive conclusions about local gang relationships. David Pyrooz, Andrew Fox, and Scott Decker (2010) take a similar approach to understanding race, ethnicity, and economic disadvantage as causal factors of gang participation in urban centers. In defending the relevance of their research, they explicitly state, "At this point in time, given the scarcity of macro-level gang research, it is necessary to take a step toward identifying relevant predictors that apply to *cities*, not just a city" (p. 7). The

same logic can be applied to the study of national gang structures using SNA, an area of gang studies that has not been explored.

James Howell (2012), however, trivializes macro-level network analyses, a strand of “big gang theory,” by addressing several “myths” on how gangs are conceptualized. The first myth acknowledges the organization of gangs. He argues that rather than highly structured organizations like Mexican DTOs, “Street gangs are generally loosely organized groups that are constantly changing – consolidating, reorganizing, and splintering” (p. 31). His second myth addresses the size of gangs. He claims the methodology of reporting gang affiliations has inflated gang membership. While there may be a significant number of Crips, for example, local gangs often adopt the names of nationally recognized gangs without any affiliation to them or their sets. Wesley McBride, President of the California Gang Investigator’s Association, summarizes the lack of cohesion between gangs. “In Los Angeles there are over 200 Crips sets and maybe 100 Bloods sets, there is no common leader among any and they war on one another. [Most gang violence involves] Crips on Crips, Bloods on Bloods. There is no evidence of a Crips or Bloods nation in California. They do not understand that concept of gang nations. Each gang is totally independent of other gangs” (cited in Howell, 2012, p. 33 and Howell, 2015, p. 36). Marcus Felson (2006) contends that “the colossal gang is largely an illusion – many independent gangs just using the same name over a wider space for a longer time” (p. 308). In rationalizing the second myth, the third and final myth explains *why* “gangs of the same name are connected.” Felson points out that this is a defense mechanism to project a reputation for being dangerous and well-connected. The arguments presented by Howell potentially undermine big gang theory and the study of gangs at the macro-level.

It would be imprudent to dismiss Howell's criticisms out of hand. First, it is not uncommon for local conditions to spawn rivalries among gang sets where distinct patterns of conflict and cooperation emerge. For example, the Tree Top Pirus are known to feud with other Piru and Blood sets, and the Neighborhood Crips remain at odds with the Gangster Crips (United Gangs, n.d.). At the same time, the rivalry between the Crips and Bloods is well-documented and nationally recognized. The evolution of gangs posited by Sullivan attenuates the confusion between allies and rivals, where second and third-generation gangs demonstrate a higher degree of cohesion. Second-generation, market-oriented gangs, resemble entrepreneurial organizations where supply chain management becomes paramount to their operations. The establishment of networks allows the distribution of contraband from coastal areas to the interior of the country. If these networks did not exist, illicit goods such as narcotics would be limited to border towns. Through partnerships, gangs coordinate to control these supply routes (Drug Enforcement Administration, 2018). As a result, second-generation gangs take on the appearance of Mexican DTOs in terms of organization (Sullivan, 1997). Further, third-generation gangs maintain the same cohesion as second-generation gangs but are brought together through similar ideology and political-motivation. "The *third generation* street gang is a mercenary-type group with goals of power or financial acquisition and a set of fully evolved political aims... This type of gang may embrace either quasi-terrorism or true terrorism to advance its influence" (Sullivan, 1997, p. 96). One politically motivated gang, the Five Percenters, founded as an offshoot of the Nation of Islam, is a Black nationalist organization that uses incendiary language in their teachings to characterize white people as devils and advocate violence against them (*Coward v Robinson*, 2017; *Hardaway v Haggerty et al.*, 2009). Their teachings allow them to maintain unity among members regardless of geography. Other gangs such as Mara Salvatrucha (MS-13) and Barrio 18

have transformed into third-generation gangs by exploiting social, political, and economic disparity (Sullivan, 2006). The 2009 National Gang Intelligence Center (NGIC) gang report highlights MS-13's national cohesion, "Traditionally, the gang consisted of loosely affiliated groups known as cliques; however, law enforcement officials have reported increased coordination of criminal activity among Mara Salvatrucha cliques in the Atlanta, Dallas, Los Angeles, Washington, D.C., and New York metropolitan areas" (p. 26).

In cities outside of Los Angeles, gangs have formed nations. As I discussed in the previous chapter, Chicago-area gangs such as the People and Folk, for instance, have cultivated alliances of loosely affiliated gangs that have since permeated throughout the United States. Their rivalry is equivalent to the Bloods and Crips, and members of the People and Folk Nations range from first to third-generation gangs. They experience similar internal conflicts as the Bloods and Crips described by McBride. As members of the Folk Nation, the Black Disciples, and Gangster Disciples, once a single gang known as the Black Gangster Disciples, remain mortal enemies. The Spanish Cobras have historically engaged in hostilities with most other People Nation members in the People Nation. The infighting is part and parcel to an aggregate pattern of gang relationships that is worth exploring. My training as a security threat group intelligence officer was conducted using this macro-level understanding of gang relationships (North Carolina Correctional Officer Training, 2016).

Outside of Sullivan's evolutionary perspective, the Drug Enforcement Agency (DEA) (2018) makes this important distinction between neighborhood and national gangs:

NBGs (Neighborhood Gangs) operate mainly in the specific jurisdictions where they live. Many take on the names of national-level gangs and attempt to emulate them, but they rarely display the same level of sophistication or structure as national-level gangs (p. 107)

National-level gangs are often highly structured; maintain a strict hierarchy, a constitution, and definitive set of rules; and share common tattoos and symbols. They

have a presence in many jurisdictions around the country. Many of these national level gangs work in conjunction with their counterparts in other locations around the country to benefit the whole gang, (p. 108)

According to the DEA, the local gang described by Howell and Felson *and* the national gang that falls on Sullivan's evolutionary spectrum exist simultaneously. While studying neighborhood gangs is beneficial, however, this limits our understanding to a specific locale. It is through the national gang structure that gang culture is being reproduced at the local level. This is a fact that warrants further investigation on the interconnectedness of national gangs. More importantly, there is empirical evidence to suggest national gangs are cultivating networks of criminal ties, or, to use Sullivan's phrase, becoming "net warriors." Sullivan, the DEA, and NGIC suggest that national gangs have become more cohesive, organized, and sophisticated. Despite these reports, the macro-level analysis of network gang structures remains an undeveloped area of gang research.

4.2 A Macro-Level Network Approach to Analyze Gang Structure

The distribution of narcotics as a lucrative business contributed to changes in the organizational gang structure (Coughlin & Venkatesh, 2003). Since the 1970s, one of the defining features of the modern gang has been its network orientation. This is a trait Sullivan attributes to the second-generation gang archetype in which they use group-control mechanisms to exert influence over market outcomes, transforming gangs from territorially-bounded, localized groups, to "net warriors" expanding into peripheral spaces and beyond. It is this transformation that necessitates a better understanding of the relationships between gangs at the national macro-level. As a consequence of their expansion, gangs invariably seek allies and create enemies as they compete for the same scarce resources and market opportunities (Coughlin & Venkatesh, 2003; Densley, 2014). The network structure this has created provides advantages to entrepreneurial and ideologically motivated gang types by diversifying

information and resource suppliers. Where direct ties are missing, structural holes can be filled by third parties to facilitate competitive advantage (Burt, 1995). Insofar as gangs have a proclivity for criminal behavior *and* their influence continues to spread, so does the threat to public safety. SNA, as an empirical-analytic tool, although under-utilized in gang studies, is an effective method to examine the interconnectedness of gangs and analyze their centrality, or influence in the network.

Network analysis can improve our understanding of gang structures at the macro-level by revealing patterns of relationships. One of the most fundamental applications of SNA involves mapping gang connections. What gangs are allies and rivals, and how does this shape the national gang structure? The Aryan Brotherhood, for example, is often affiliated with white nationalism. However, their alliances with the Mexican Mafia and other ethnic gangs have been disavowed by other white nationalist gangs (Reeve, 2013). How do ethnically heterogeneous and homogenous connections compare in terms of cohesion and gang centrality? Has the diverse set of alliances impacted the Aryan Brotherhood's influence when compared to the homogenous alliances of white nationalist gangs? Further, distinctions of gangs have been made across different generations with different degrees of complexity, as Sullivan proposes. Within the generational framework exist different types of gangs (i.e., street, prison, and motorcycle gangs), each with distinct characteristics that I highlight in the previous chapter. Prison gangs like the Mexican Mafia, for instance, do not directly engage in street-level activity but exert control outside the prison setting through proxy gangs. These are street gangs that carry out orders on behalf of prison gangs. SNA can provide insight into the interconnectedness of different gang types and identify which gangs from these categories are the most influential. Mapping the relationships between gangs also provides an overview of the structural weaknesses in the gang

network. Which gangs or connections, if removed, would disconnect the graph? This type of inquiry is important to disrupt criminal gang activity by targeting and isolating the flow of information and resources.

In recent years, MS-13, a gang formed by Salvadoran migrants in the United States, has been central to the public discourse on gangs. President Donald Trump (2017, 2018, 2019) has repeatedly addressed the threat of MS-13 to American communities (See also comments made by Attorney General Jeff Sessions (2018) in creating the Transnational Organized Crime Task Force). However, the narrative has been framed as part of a larger debate on U.S. immigration policy and border security. Centrality measures provide a method to formalize the extent to which discursive practices are politicizing or securitizing immigrant gangs by quantifying and comparing their network influence to native gangs. Some immigrant gangs have formed as a result of frequent victimization. Outgroup pressure from the Bloods and Crips in Los Angeles, for example, is often attributed to the formation of MS-13 (Wolf, 2012). These same conditions led to the formation of the Tiny Rascal Gang (TRG). Cambodian refugees facing genocide under Pol Pot fled to the United States, where the predation of native gangs caused them to band together for protection (Valdez, 2000). Whether formed by native or immigrant groups, identifying and targeting the most influential gangs could potentially deter the next MS-13 or TRG from emerging.

Another group that is frequently mentioned in the immigration debate is transnational organized crime groups such as cartels and mafias. In particular, Mexican DTOs have strengthened their relationships with street, prison, and motorcycle gangs in the United States (NGIC, 2011, 2013, 2015). How influential are cartels, and what, if any, impact do they have on the network structure of gangs? Assessing gang alliances, especially to transnational organized

crime groups, helps contextualize their threat to public safety on a broader scale. In short, the more we understand macro-level gang structures, the more robust our inferences on their national security implications. Given the network orientation of gangs since the 1970s, SNA, as an empirical-analytic tool, is well-suited to examine these structures.

4.3 Methodology

This research is the first attempt at a macro-level network approach to analyze national gang structures in the United States. I borrow an approach similar to the Big Allied and Dangerous (BAAD) database developed by the National Consortium for the Study of Terrorism and Responses to Terrorism (START). According to the lead investigators for this project, Victor Asal, R. Karl Rethemeyer, and Ian Anderson (2011), "BAAD seeks to create a comprehensive database of terrorist organizations. The database contains information on organizational level variables such as ideology, location, size, structure, and funding as well as network data on variables such as allies, rivals, targets, and state sponsors." My research focuses on gang clusters and centrality measures. In SNA, clustering is useful to determine the cohesion of a graph and detect communities, or subgraphs, embedded in the network (Newman, 2015). Centrality measures, on the other hand, are used to quantify influential nodes based on their network position (Newman, 2015). Gangs with high network centrality control the flow of information and resources compared to gangs with low centrality. For this reason, gangs with higher centrality represent the greatest potential threat to national security. Unfortunately, a formal system for data collection on gangs similar to BAAD has not been established. This should, however, be integrated into future macro-level gang research. A comprehensive database on national gangs would make possible a longitudinal analysis of gang structure, another under-researched area of gang studies (Coughlin & Venkatesh, 2003).

There are three problems Jennifer Xu and Hsinchun Chen (2005) identify when constructing criminal networks from unstructured data. One is the application of fuzzy boundaries or the ambiguity involved with determining which nodes to include in the network and how those nodes are connected. Whereas the sources used to construct the BAAD database were retrieved from the Terrorism Knowledge Base (TKB) created by the National Memorial Institute for the Prevention of Terrorism, the Correlates of War (COW) Project, and the Polity and Polity 2 Projects, at the time of writing this chapter, no similar, publicly available, resources exist for gang research in the United States. Instead, I use the information presented in the *2011 National Gang Threat Assessment* released by the National Gang Intelligence Center (NGIC) to select the gangs used in this study. The 2011 NGIC gang assessment is the most recent and comprehensive report showing the state location of gangs at the time of this writing. I include gangs identified in two or more states. The BAAD dataset follows a similar approach of focusing on the world's largest terrorist groups. However, a problem with the selection process for gangs is that several gangs in the NGIC report are named after streets common in states across the country. The 121st Street Gang, for example, is "generic." Unlike gangs with nationally recognizable relationships such as the rivalry between the Crips and Bloods, and in the absence of a national gang database, it is difficult to identify any discernable connection between them, their allies, and their rivals. Therefore, I exclude "generic" gangs from the dataset. In addition to gangs, I include Mexican Drug Trafficking Organizations (DTOs), or cartels, in the dataset because they factor prominently in the gang network. They form alliances with gangs in the United States to act as distribution networks for illicit goods. Roughly 69% of the agencies reporting in the 2011 NGIC report indicate that gangs in their jurisdiction are involved in drug distribution. Seeking economic opportunity through the distribution of narcotics has led to

increases in violent crime and the migration of gangs into new communities (Tita & Radil, 2011).

Although the gangs used in this study were taken from the 2011 NGIC, establishing connections between them is a separate, more complex process. I cross-reference several sources to verify the existence of a connection between gangs. This is an attempt to minimize any assumptions or arbitrary associations that might undermine the results of this study. I take four steps in validating the connections between gangs. First, I consult several reputable sources that document alliances and rivalries between gangs. One set of sources include government gang intelligence publications. In addition to the 2011 NGIC gang report, I review the 2013 and 2015 gang reports, the *2018 National Drug Threat Assessment* released by the U.S. Department of Justice Drug Enforcement Administration (DEA), and *The Gang Book* published by the Chicago Crime Commission. Each report contains information on gang trends for prison, street, and motorcycle gangs and discusses their connections, including partnerships with Mexican DTOs. Additionally, I consult the *North Carolina Correctional Officer Training Manual* on prison security threat groups. This section of the manual is used to facilitate the identification of gang members by prison staff and make officers aware of the alliances and rivalries between gangs from a macro perspective.

In addition to government sources, I use two publications in the field of gang studies that identify connections between gangs. *The Encyclopedia of Gangs*, a compilation of essays that address current events for specific gangs, and *The One Percenter Encyclopedia*, a compilation of essays that focus on OMGs, provide information on gang connections. Lastly, I use open-source websites that contextualize these connections by describing the history and transformation of gang alliances and rivalries. The various resources I use include United Gangs, One Percenter

Bikers, Chicago Gang History, Gang Identification Task Force (blog), Police Law Enforcement Solutions, InSight Crime, Southern Poverty Law Center, the Rap Dictionary, and the Hip Hop Database.

The context of gang relationships helps address data reliability issues endemic to national gang reports. Federal publications rely on a decentralized data collection process from local sources that can lead to inconsistencies between law enforcement agencies. Some districts are equipped with specialized gang units and subject matter experts. In contrast, others either lack sufficient resources to track gangs or do not differentiate between gang and non-gang activity as a matter of standard operating procedure. Twenty-two percent of the law enforcement agencies responding to the 2011 Office of Juvenile Justice and Delinquent Protection (OJJDP) survey (2013) indicated that they do not collect or maintain information on gangs (Cited in Huff & Barrows, 2015). In the 2011 NGIC report, the Lewiston Police Department was the only agency in Maine to contribute. Similarly, the West Valley City Police Department, a suburb of Salt Lake City, was the sole contributing agency from Utah, and there were no contributions from the state of Vermont.

Disparate processes have led to inaccuracies in the publication of gang data. Some jurisdictions report gangs as an aggregate group while others use a different vernacular. White supremacists and white nationalists are two names of the same group aggregated from Peckerwood gangs. Other examples in the NGIC report include Russian and Somali gangs documented as non-descript groups. Further, the decentralized data collection process suffers from omissions in gang reporting. The Iron Order Motorcycle Club, established in Jeffersonville, Indiana in 2004, is an OMG that has a presence in forty-seven states plus the District of Columbia, and chapters in eleven countries outside of the United States (One

Percenter Bikers, 2020b), but is not represented in the 2011 NGIC gang report. Also problematic is the misrepresentation of gangs, which could be a consequence of inadequate police training or a general unfamiliarity of previously unidentified “new” gangs to an area. The Black Gangster Disciples are reported in several states, but this gang separated in the 1970s, forming two distinct gangs, the Black Disciples and Gangster Disciples, whose rivalry continues today (Chicago Gang History, 2017b). The issue of data reliability in government publications and gang studies, in general, provides a separate, but important argument in favor of a macro-level gang database similar to that used to inform the BAAD model. Although inter-agency cooperation occurs, there is an information gap at the state, regional, and national level (Huff & Barrows, 2015). I address the limitations of the NGIC gang report in the next chapter by collecting Twitter data on gangs to examine the geospatial distribution of gangs at the micro-level.

The third factor I consider in modeling the network includes using connections that are explicitly verified in the sources I use. For example, the 2018 DEA reports that the Latin Kings in Kansas have connections to "Mexican Cartels." Connections with unspecified cartels or other groups are not included in the model. Further, in the rare case that a data source contradicts another, I consider the date and consensus of the references to determine the existence of a connection, and whether that connection represents an alliance or rivalry. On the one hand, gang relationships are fluid and change over time (Xu & Chen, 2005). Once an ally of white nationalist gangs, recent data suggests that the Aryan Brotherhood is at odds with these groups because of their ties to ethnic gangs. Therefore, the connection between these two gangs is coded as a rivalry. On the other hand, gangs with the same affiliation are not exempt from infighting. Although a member of the Folk Nation, the Spanish Cobras frequently engage other members of the alliance in violent confrontation (Chicago Gang History, 2017c). In the dataset, this gang is

coded as an ally to the Folk Nation, but a rival to other gangs in the Folk Nation. These connections are concluded by a general agreement between multiple sources in this study.

Another problem identified by Xu and Chen is data transformation. Constructing network models from unstructured data is time-consuming and labor-intensive. Mainly when modeling criminal networks where associations are not always transparent. In part, I address this issue through the sources I have selected and the rigorous verification process I use to validate the relationships between gangs. The size of the network is relatively small, reducing the time it takes to build the gang network. I use an adjacency matrix to show the connections between gangs. In total, the dataset for this study includes 121 vertices (nodes) represented by 69 street gangs, 19 prison gangs, 25 outlaw motorcycle gangs (OMGs), and 8 cartels. Moreover, each gang can be categorized into 12 primary gang affiliations that include different sets and sub-sets. The Tree Top Pirus, for example, is a Piru set affiliated with the Bloods, making them a Blood sub-set. The highest number of gang affiliations belong to OMGs with 26 nodes. Gangs unaffiliated with any primary gang represents 24 nodes. Together, OMGs and unaffiliated gangs represent approximately 40% of the nodes in the network. Half of the affiliated gangs in the dataset are evenly represented, ranging from 9 to 13 nodes. The least represented gang affiliations include the Norteños, Insectos, black nationalist gangs, and the Sureños ranging from 2 to 6 nodes. Finally, 77 gangs, or 63.64% of the dataset, were started by native groups. Another 34 gangs, or 28.10% of the dataset, originated with immigrant groups in the United States. In 10 gangs or 8.26% of the dataset, I could not identify the origins of the gang. Table 4.1 lists the gang representation of this study by gang type, gang affiliation, and group origins.

Table 4.1 Gang Representation by Type, Affiliation, and Country of Origin

Gang Type	Total	% of Total
Street Gangs	69	57.02%
Prison Gangs	19	15.70%
OMGs	25	20.66%
Cartels	8	6.61%
Total	121	100%

Gang Affiliation	Total	% of Total
Crips	10	8.26%
Bloods	9	7.44%
Folk Nation	9	7.44%
People Nation	9	7.44%
Norteños	2	1.65%
Sureños	6	4.96%
Black Nationalists	3	2.48%
Peckerwood (White Nationalists)	13	10.74%
Motorcycle Clubs	26	21.49%
Insectos	2	1.65%
Unaffiliated	24	19.83%
Mexican Cartels	8	6.61%
Total	121	100%

Country Origins	Total	% of Total
Native Groups	77	63.64%
Immigrant Groups	34	28.10%
Unconfirmed	10	8.26%
Total	121	100%

Finally, Xu and Chen point out that network dynamics are problematic. “Criminal networks are not static, but are subject to change over time. New data and even new methods of data collection may be required to capture the dynamics of criminal networks” (p. 102). The issue of network dynamics is less a concern addressed in this study, and more a reflection on the

importance of this research. Future iterations on the macro-level analysis of gang associations are necessary to deal with network dynamics. Some variation of the BAAD database, a useful tool for conducting longitudinal analyses on the relationships between terrorist groups, would be an effective model to study gangs.

In order to analyze the network structure of gangs at the macro-level, I construct three different graphs to test network centrality. Measures of centrality quantify the importance of a node in the network (Newman, 2015). The first graph I use is a baseline model that shows the connections between gangs, regardless of their relationship. Whether an ally or a rival, these connections inextricably link gangs. The Crips, for example, are rarely discussed without mentioning the Bloods. That goes the same for other gangs that have longstanding rivalries such as the People and Folk Nations and the Norteños and Sureños. As I discuss in Chapter 3, some gangs form in response to outgroup pressures from established gangs. The baseline model uses an unweighted adjacency matrix where each edge is coded as 1 (ally or rival) if a connection exists, and 0 if no connection exists. I use the baseline model to analyze the impact of rivalries on network influence by comparing the results to the other two models.

Although alliances and rivalries constitute a connection between gangs, the context of that relationship matters (Tita et al., 2003). The second graph, gang nexus model 1, considers the positive (ally) and negative (rival) ties on gang influence in the network. As early as 1946, negative ties in network analysis have been used to study avoidance or sentiment relations between nodes (Harrigan and Yap, 2017). Whereas alliances can improve the network centrality of a gang, rivalries can have an adverse impact. In the third and final graph, gang nexus model 2, I consider the positive and negative ties between gangs but remove cartels from the gang network to analyze their impact on gang influence. For all three models, gangs represent a vertex

(node) on the graph, edges (tie) indicate a connection between gangs, and the graphs are undirected. That is to say, if an alliance or rivalry exists, each gang is aware of this relationship. Crips know they are rivals with Bloods and vice versa. Both gang nexus models use a weighted graph where an edge is coded as 1 (ally), -1 (rival), or 0 (no connection).

I use two methods to analyze macro-level gang structures. First, I identify the cutpoints, bridges, and community detection in gang nexus model 1. This model incorporates the weighted ties between gangs as an ally or rival and includes cartels. Gang nexus model 1 most closely resembles the real-world gang structure. Cutpoints and bridges, two important locational properties of a graph, indicate structural weaknesses in a network (Luke, 2015). Whereas cutpoints represent a node that, if removed, disconnects parts of the graph, bridges represent their edge equivalency. If a cutpoint or bridge is removed, then two subsets of nodes would be unable to communicate. Another method of identifying relationships in a network is through community detection. Usha Nandini Raghavan, Réka Albert, and Soundar Kumara (2007) explain, "A community in a network is a group of nodes that are similar to each other and dissimilar from the rest of the network. It is usually thought of as a group where nodes are densely inter-connected and sparsely connected to other parts of the network" (p. 1). Cliques are a basic representation of network communities that indicate density by the number of node closures, or shared friends.

The second method I use to analyze the macro-level gang structure is through centrality measures. Network centrality quantifies a gang's network influence, or importance, over other nodes. The higher the centrality, the greater the likelihood that a gang controls the flow of information and resources throughout the network (Fox, 2013). I use five common centrality measures for each of the three models. One of the most fundamental metrics of network influence is *degree centrality*. Influence is measured by taking the sum of connections to a node

(Luke, 2015). The more direct ties a node has the higher its importance in the network. Gangs with a higher number of connections have access to more information and resources, providing them an advantage over gangs with a low number of connections. Another centrality measure I include is *closeness centrality*, where influence is determined by the average number of shortest paths from one node to all other nodes in the network (Luke, 2015). This is calculated by inverting the mean distance between nodes. Gangs with the highest closeness centrality score can send and access information and resources quicker than gangs with a low closeness centrality score. A third centrality measure I use to evaluate gang influence is *betweenness centrality*. Betweenness centrality considers the extent to which a node lies on paths that connect other nodes (Luke, 2015). These types of nodes are referred to as “bridges” or “brokers.” Gangs exert influence in the network by controlling the flow of information and resources. In some cases, the removal of these gangs results in the graph becoming disconnected; useful when trying to isolate, target, and disrupt criminal networks. Closeness and betweenness centrality scores are best used for analyzing connected graphs.

The last two measures I use in this study are *PageRank* and *eigenvector centrality*. PageRank is a Google algorithm designed to measure web pages centrality based on the importance of other web pages with which they are connected. Whereas degree centrality assumes network influence from the total number of connections to a node, PageRank assigns a weight to those nodes based on their relative importance in the network. Sergey Brin and Larry Page (1998) explain that importance is not only based on the number of links but also depends on the position on the graph relative to other influential nodes. According to their assessment, “A page has high rank if the sum of the ranks of its backlinks is high. This covers both the case when a page has many backlinks and when a page has a few highly ranked backlinks” (p. 3). In

principle, a node can have importance if the node is connected to several other nodes throughout the network, if they have low connections to other nodes but are connected to other highly connected nodes, or both (Newman, 2015). The assumption here is that the importance of a highly centralized gang will increase other gangs' status in their orbit. Although PageRank improves upon degree centrality, this metric is best applied to directed graphs. For example, the higher the number of out-degree connections from a centralized node, the less the influence being passed to other nodes. Another centrality measure that works similar to PageRank is eigenvector centrality. While PageRank falls within the eigenvector family, Eigen centrality is useful for measuring undirected weighted graphs that are connected or disconnected. Table 4.2 summarizes the network centrality measures I use in this study (for a more formal definition of degree, closeness, betweenness, and eigenvector centrality measures see Borgatti (2005), and for a more formal definition of PageRank centrality see Brin and Page (1998)). Table 4.3 provides an overview of the descriptive statistics for each model by centrality measure which I discuss further in the results section.

Table 4.2 Brief Summary of Each Centrality Measure

Centrality Measure	Description	Advantage
Degree Centrality	Measures influence from direct connections to node.	Most basic centrality measure.
Closeness Centrality	Measures influence from the inverse average of shortest paths that a node is connected.	Effective in measuring centrality for connected graphs.
Betweenness Centrality	Measures influence from the sum total of shortest paths passing through a node.	Effective in measuring centrality for connected graphs.
PageRank	Measures direct connections to a node AND the connectedness of other nodes.	Effective in measuring centrality for directed graphs.
Eigenvector Centrality	Measures direct connections to a node AND the connectedness of other nodes.	Effective in measuring centrality for directed OR undirected graphs.

Table 4.3 Descriptive Statistics and Centralization Scores by Centrality Measure for Each Model

Centrality Measure	Centralization Index	Mean	Median	Std Dev	Range
Baseline Model (Unweighted - No Allies & Rivals)					
Degree	0.4913	14.05	11	12.86	0 - 73
Closeness	0.0222	0.000577	0.000631	0.000162	0.000069 - 0.000668
Betweenness	0.1465	70.26	4.9478	170.22	0 - 1107.86
PageRank	NA	0.0083	0.0076	0.0059	0.0013 - 0.0365
Eigenvector	0.7764	0.2364	0.1587	0.2216	0 - 1
Gang Nexus Model 1 (Weighted - Allies & Rivals)					
Degree	0.1979	6.25	5	6.34	0-30
Closeness	0.0139	0.000256	0.000303	0.000095	0.000069 - 0.000313
Betweenness	0.1429	65.26	1.12	158.60	0 - 1077.05
PageRank	NA	0.0083	0.0071	0.0067	0.0015 - 0.0374
Eigenvector	0.7813	0.2316	0.1497	0.2415	0 - 1
Gang Nexus Model 2 (Weighted - Allies & Rivals, No Cartels)					
Degree	0.1691	5.06	3	5.19	0 - 24
Closeness	0.0137	0.000240	0.000291	0.000092	0.000079 - 0.003
Betweenness	0.1597	64.91	0.6667	168.04	0 - 1049.08
PageRank	NA	0.0089	0.007	0.0071	0.0017 - 0.0392
Eigenvector	0.8294	0.1853	0.0814	0.2285	0 - 1

There is no consensus on which centrality measure is best suited for determining network influence (Luke, 2015). As I point out, each centrality measure uses a different standard to justify a node's importance. Therefore, the final metric I use in this study ranks gangs based on their aggregate network centrality score. I achieve this by converting the centrality score for each gang into a Z-score and taking the average Z-score for all three models. Rather than basing centrality on a single measure, aggregating the results show a pattern of gang centrality across all five metrics used in this study. The results of this study are calculated using R-Studio. R-Studio is an open-source integrated programming environment for R used to conduct quantitative computing and graphics (The R Foundation, n.d.).

4.4 Results

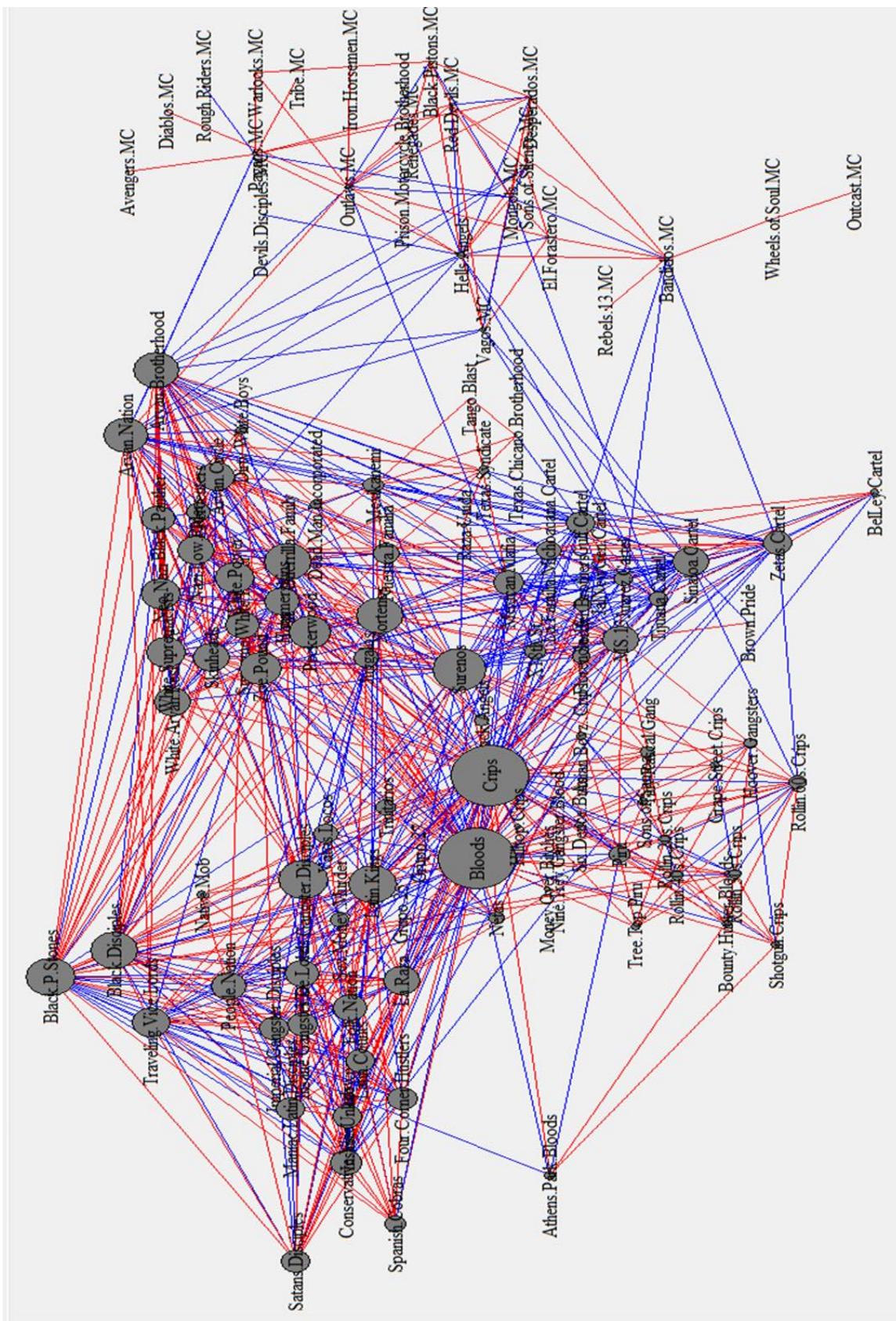
I begin this section discussing some of the network descriptions for gang nexus model 1. This includes cutpoints, bridges, and community detection. Gang nexus model 1 represents the focus of this study while the other two models are used to comparatively analyze changes in the gang structure. I finish this section showing the centrality measures and aggregate centrality scores for all three models. Centrality shows a gang's position in the network and arguably indicates their influence, or control, over the flow of information and resources.

4.4.1 Cutpoints, Bridges, and Community Detection

The diameter of gang nexus model 1 is 6. A graph's diameter measures the efficiency of information and resources moving through the network (Luke, 2015). This means that the longest shortest path between all pairs of vertices in this network is a distance of six. Often referred to as six degrees of separation, this metric is common when discussing the small-world phenomenon (See de Sola Pool & Kochen, 1979; Milgrim, 1967; Travers & Milgrim, 1969).

Figure 4.1 provides a basic visual of gang connections and their network centrality. Node size indicates the relative influence of a gang to the network where larger nodes are more important than smaller nodes. The Crips and Bloods appear to be highly influential. Red edges indicate a rivalry between two nodes, and blue edges indicate an alliance. Gang clusters can be observed based on these connections. For example, Outlaw Motorcycle Gangs (OMGs) appear on the right side of the graph, while the People and Folk Nations are shown on the left. Isolates (gangs with no connections to any other node in the network) are removed to improve the visualization of the network graph.

Figure 4.1 Gang Connections and Centrality



There are seven cutpoints in gang nexus model 1, whereby four of them are of interest. They include four of the "Big 5" Motorcycle Gangs in the United States, as recognized by the U.S. Department of Justice (1991). In addition to their ties to the OMG community, the Bandidos and Hells Angels, two rival motorcycle clubs, have alliances with Los Zetas, the Gulf Cartel, and the Juarez Cartel, and the Sinaloa and Tijuana Cartels, respectively. Moreover, the Hells Angels have ties to two white prison gangs, the Aryan Brotherhood and Nazi Lowriders, and a white street gang, the Aryan Nation. Despite being rivals with the Hells Angels, the Pagans have ties to the Aryan Brotherhood and Aryan Nation. Similarly, the Outlaws have connections to the Aryan Brotherhood and one of their strongest allies, the Mexican Mafia. Although the cutpoints provide interesting results in disconnecting OMGs from the rest of the gang nexus, the bridges detected in the graph are less revealing. The bridges involve mostly the Big 5 OMGs, but rather than disconnecting subsets of motorcycle clubs, the removal of these edges results in the isolation of a single gang. For example, the Rough Riders MC has one connection in the network to the Pagans. Removing the edge between the Rough Riders and Pagans results in the Rough Riders becoming isolated in the graph.

Two of the largest cliques in gang nexus model 1 (allies and rivals) with nine members are white nationalist groups and the People Nation with the Bloods, who share an alliance with most members of the People Nation. The next highest clique outside of these two groups is the Folk Nation with six. Although the Folk Nation is an alliance of several other gangs, there are significant rivalries between member gangs. One of the notable rivalries is between the Gangster Disciples and Black Disciples that originated in the 1970s. Another one involves the "Insane" and "Maniac" sets. There is a similar issue with other gangs like the Crips. Grape Street Crips and Hoover Gangster Crips, for instance, continuously feud with other Crip sets, especially at the

local level in the Watts district of Los Angeles. One of the main rivals to the Hoover Gangster Crips is the Neighborhood Rollin' Crips.

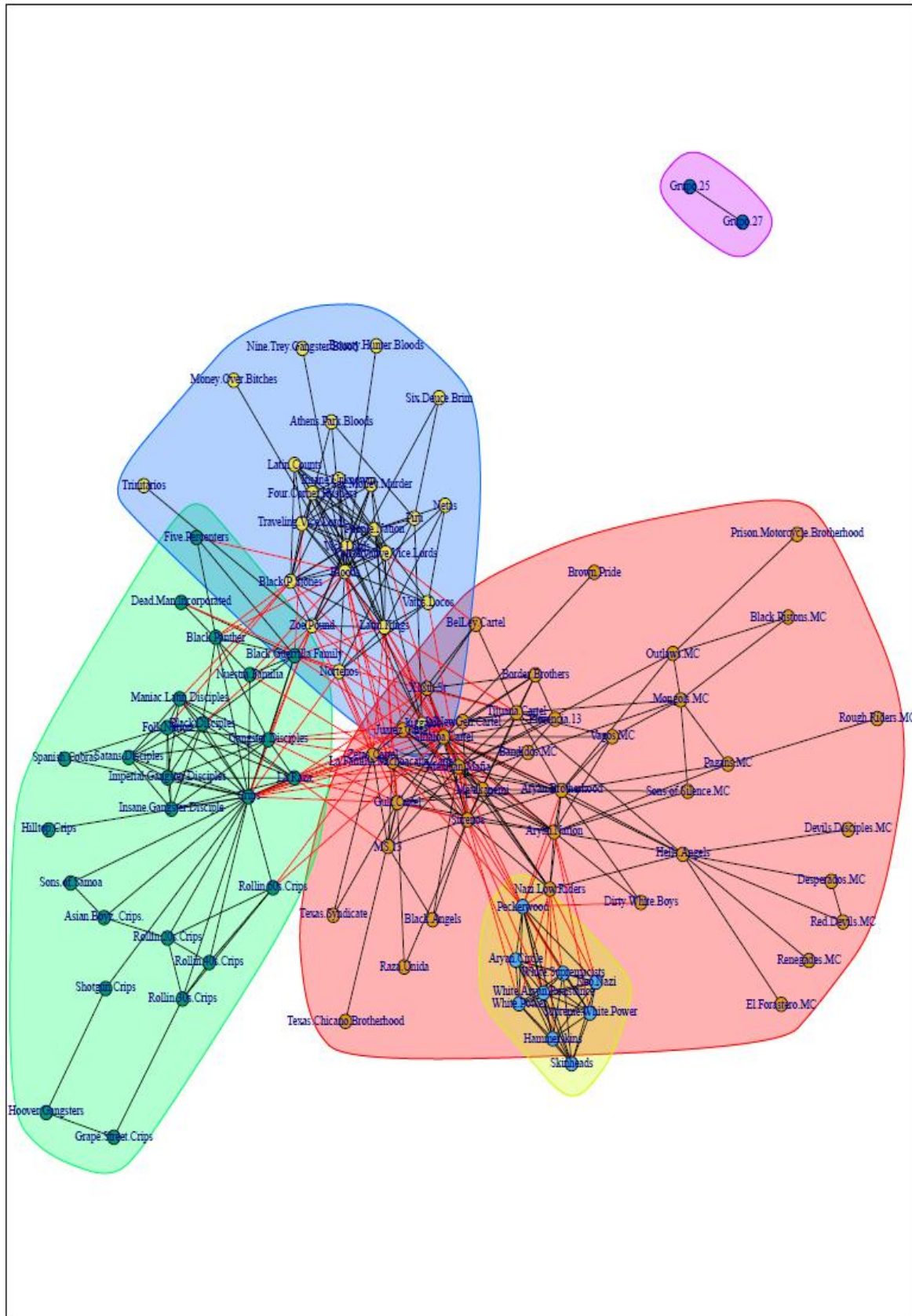
A more formal representation of network community measures gang clusters through a detection algorithm. For this study, I use the Label Propagation and Louvain community detection algorithms. Both have higher modularity scores.⁵ Compared to other community detection algorithms, the modularity score for the Label Propagation algorithm is 0.50, and it is 0.5101 for Louvain. In the Label propagation algorithm, each node is identified by the label of the community to which they belong, and nodes choose the community to which the maximum number of its neighbors belong (Raghavan, Albert, & Kumara, 2007). The formation of communities propagates throughout the network until all nodes are placed into a community. On the other hand, the Louvain algorithm, first introduced by Vincent Blondel, Jean-Loupe Guillaume, Renaud Lambiotte, and Etienne Lefebvre (2008), “is a hierarchical clustering algorithm, that recursively merges communities into a single node and executes the modularity clustering on the condensed graphs” (Needham & Hodler, 2019). Both community detection methods consider the positive ties between gangs when dividing them into clusters. For a more formal explanation of the Louvain algorithm, see Hao Lu, Mahantesh Halappanavar, and Anath Kalyanaraman (2014), and for an application of the Louvain algorithm on social networks see Josep M. Pujol, Vijay Erramilli, and Pablo Rodriguez (2009).

In total, there are five communities detected using the Label Propagation algorithm. The smallest community includes the Insectos where Grupo 25 is aligned with Grupo 27. Another community includes white Nationalist gangs that overlap with a third community, including

⁵ M. E. J. Newman (2006) explains, “that true community structure in a network corresponds to a statistically surprising arrangement of edges, can be quantified using the measure known as modularity. The modularity is, up to a multiplicative constant, the number of edges falling within groups minus the expected number in an equivalent network with edges placed at random” (p. 2).

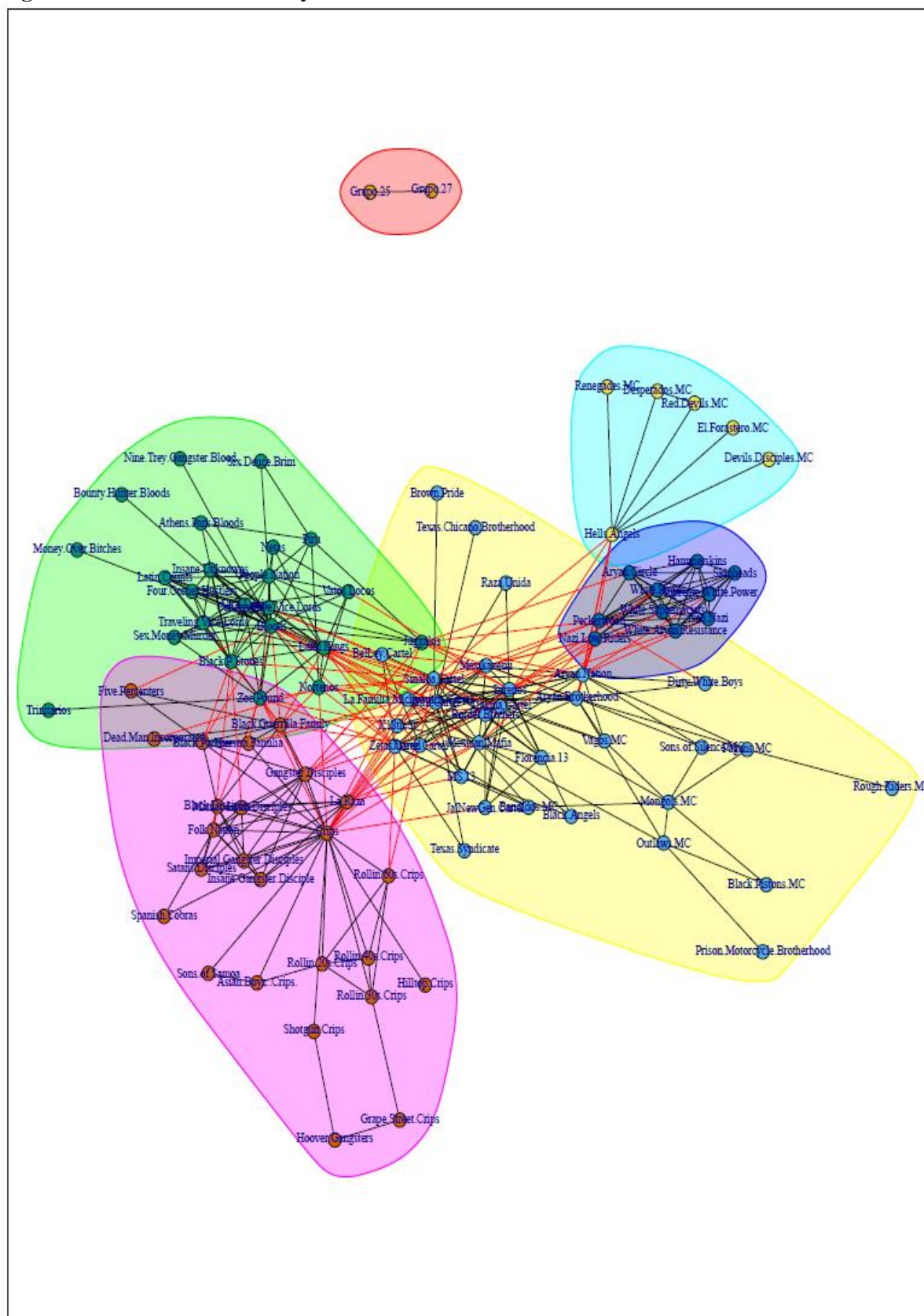
OMGs, the Sureños, several established prison gangs such as the Aryan Brotherhood and Texas Syndicate, and cartels. Some cartels, like the Sinaloa and Juarez Cartels, overlap with communities that include Bloods, People Nation, and Norteños. The final community detected with the Label Propagation algorithm includes the Crips and Folk Nation. Figure 4.2 shows the Label Propagation community detection algorithm results, where communities are color-coded, and edges indicate the inclusion (black) or exclusion (red) from a gang's primary community.

Figure 4.2 Label Propagation Community Detection



The Louvain community algorithm detects six communities where several clusters resemble the Label Propagation algorithm. For example, the Insectos remain a community along with the Bloods, People Nation, and Norteños, Crips and Folk Nation, and the cartels, Sureños, and some prison gangs. The main difference between the two algorithms is how they cluster the OMGs and white nationalist groups. Unlike the Label Propagation method, Louvain separates the Hells Angels and their allies into a separate community while other OMGs remain in a community with cartels, Sureños, and prison gangs. Similarly, white nationalist gangs, while still a community, are not as embedded in this community either. Figure 4.3 shows the results from the Louvain community detection algorithm where communities are color-coded, and edges indicate the inclusion (black) or exclusion (red) from a gang's primary community.

Figure 4.3 Louvain Community Detection



4.4.2 Degree Centrality

Degree centrality measures network influence by the number of edges connected to a node (Luke, 2015). The greater the number of connections to a gang, the stronger their influence in the network. The results of the baseline model show that the Crips and Bloods rank first and second as the most influential gangs in the network with 73 and 71 connections, respectively. Compared to the centrality of other gangs in the network, the Crips and Bloods have significantly higher connections. The next three gangs with high centrality are the Sureños (45 ties), Aryan Brotherhood (37 ties), and Latin Kings (36 ties). All five of the most central gangs in the baseline model originated from native groups. Gangs formed by immigrant groups with the highest degree centrality include MS-13 (El Salvador) ranked ninth with 31 ties, Zoe Pound (Haiti) ranked eleventh with 28 ties, and La Raza (Mexico) ranked fourteenth with 24 ties. Cartels in the baseline model also account for significantly less influence than the Crips and Bloods. The highest-ranked cartel is the Sinaloa Cartel ranked tenth with 29 ties. The average degree centrality measure for the baseline model is 14.05 with a median score of 11, a degree centrality range from 0 – 73, and a centralization index of 0.4913. Centralization indices measure the extent to which the most central node compares to the centrality of the other nodes in the network (Freeman, 1979). A higher centrality index means greater variation in the distribution of influence across the network. Conversely, a low centralization index suggests centrality is more evenly distributed across all nodes in the network. For the baseline model, influence based on degree centrality is moderately distributed across the network.

The gang nexus model 1 provides context on gang relationships by distinguishing between positive ties (allies) and negative ties (rivals). In this model, the Crips and Bloods remain the two most central gangs in the network, but by a more modest number of connections than in the baseline model. Degree centrality for the Crips and Bloods is 30 and 28, respectively,

followed by the Sinaloa Cartel and Sureños tied for third with 24 ties each. Ranked fourth is the Latin Kings with 20 ties, and tied for fifth are the Aryan Brotherhood, Aryan Nation, and Mexican Mafia with 17 ties. It is worth mentioning that both the Aryan Brotherhood and Mexican Mafia are prison gangs that formed the Aryan Nation and Sureños, respectively, as proxies to conduct street-level gang activity. Centrality among immigrant gangs remained consistent, but the network ranks are inverted. Zoe Pound ranks eighth with a degree centrality score of 14, La Raza ranks tenth with a degree centrality score of 12, and MS-13 ranks fourteenth with a degree centrality score of 8. Overall, the degree centralization index for the gang nexus model 1 is 0.1979, meaning that centrality is more evenly distributed across the network than in the baseline model. The average degree centrality score is 6.25, with a median of 5 and range from 0 to 30.

The gang nexus model 2 uses the same positive and negative ties to show the relationship between gangs when cartels are removed from the network. In this model, the Crips and Bloods tie for first as the most influential gangs with a degree centrality score of 24. Compared to the gang nexus model 1, the Sureños improve their network rank to second, the Aryan Nation and Latin Kings rank third, and the Mexican Mafia ranks fourth. Additionally, Zoe Pound and La Raza improve to fifth and sixth in their network rank with degree centrality scores of 12 and 11, respectively. MS-13, on the other hand, drops to thirteenth with a degree centrality score of 4. This suggests that the degree centrality of MS-13 in the network is dependent on cartels. In the absence of cartels, other gangs improve their degree centrality. These include gangs and their allies that are highly cohesive, as indicated by the cliques discussed at the beginning of this section. The Black P. Stones, for example, rank third with a degree centrality score of 14, and the Vice Lords and People Nation rank fourth with degree centrality scores of 13. In addition to the

Latin Kings, the Black P. Stones and Vice Lords are members of the People Nation, and one of their most important allies are the Bloods. This means that the People Nation and Bloods community has several of the network's most central gangs. Another cohesive community somewhat represented in the top five most central gangs is the white nationalists. Peckerwood ranks fourth with a degree centrality score of 13 followed closely by the Nazi Lowriders with a degree centrality score of 12. The degree centralization index for gang nexus model 2 is 0.1691. The mean centrality score is 5.06, with a median score of 3 and a range of 0 to 24. Table 4.4 shows the degree centrality scores for select gangs in all three models. A complete list of degree centrality scores for each gang can be reviewed in the Appendix.

Table 4.4 Degree Centrality Scores and Network Rank by Country and Gang Type

Gang	Centrality Score	Centrality Rank	Country	Gang Type
Baseline Model (Unweighted - No Allies & Rivals)				
Crips	73	1	US	Street
Bloods	71	2	US	Street
Sureños	45	3	US	Street
Aryan Brotherhood	37	4	US	Prison
Latin Kings	36	5	US	Street
MS-13	31	9	El Salvador	Street
Sinaloa Cartel	29	10	Mexico	Cartel
Zoe Pound	28	11	Haiti	Street
La Raza	24	14	Mexico	Street
Gang Nexus Model 1 (Weighted - Allies & Rivals)				
Crips	30	1	US	Street
Bloods	28	2	US	Street
Sinaloa Cartel	24	3	Mexico	Cartel
Sureños	24	3	US	Street
Latin Kings	20	4	US	Street
Aryan Brotherhood	17	5	US	Prison
Aryan Nation	17	5	US	Street
Mexican Mafia	17	5	US	Prison
Zoe Pound	14	8	Haiti	Street
La Raza	12	10	Mexico	Street
MS-13	8	14	El Salvador	Street
Gang Nexus Model 2 (Weighted - Allies & Rivals, No Cartels)				
Bloods	24	1	US	Street
Crips	24	1	US	Street
Sureños	17	2	US	Street
Aryan Nation	14	3	US	Street
Black P Stones	14	3	US	Street
Latin Kings	14	3	US	Street
Aryan Brotherhood	13	4	US	Prison
Mexican Mafia	13	4	US	Prison
Peckerwood	13	4	US	Street
People Nation	13	4	US	Street
Vice Lords	13	4	US	Street
Black Guerrilla Family	12	5	US	Prison
Nazi Low Riders	12	5	US	Prison
Zoe Pound	12	5	Haiti	Street
La Raza	11	6	Mexico	Street
MS-13	4	13	El Salvador	Street

4.4.3 Closeness Centrality

Closeness centrality measures network influence by inverting the average distance between a node and all other nodes (Newman, 2015). The less distance a node travels to reach all other nodes, the greater their centrality in the network. Despite being a common centrality measure in network analysis, however, closeness best measures influence in connected graphs. This is reflected in the low closeness centralization index for all three models. Centralization for the baseline model is 2.22%, 1.39% for gang nexus model 1, and 1.37% for gang nexus model 2. By itself, closeness centrality is a poor indicator of gang prominence for this study, but patterns of gang centrality emerge when compared to the other measures. Similar to the degree centrality results, the two most prominent gangs in the baseline model are the Crips and Bloods. Both gangs rank first with the same closeness centrality score of 0.000668. Unlike degree centrality, however, the gap between centrality scores is less significant, suggesting gangs in the network are equally distant from one another. For example, the closeness centrality score for the second and third most central gangs in the network, the Aryan Brotherhood and Aryan Nation is 0.000010 and 0.000011 less than the Crips and Bloods, respectively. The same results apply to immigrant gangs and cartels. MS-13 and the Sinaloa Cartel rank fifth with a closeness centrality score of 0.000651. The tenth-ranked gangs, Zoe Pound and Neo-Nazis, a white supremacist gang that originated in the United Kingdom, are not far behind with a closeness centrality score of 0.000643. The average centrality score for the baseline model is 0.0000577, and the median score is 0.000631, with a range from 0.000069 to 0.000668.

In gang nexus model 1, cartels are more prominent, but the separation between closeness centrality scores are less than in the baseline model. Whereas the Sinaloa Cartel ranks first with a closeness centrality score of 0.000313, the Crips, Gulf Cartel, La Familia Michoacana Cartel, Mexican Mafia, and Los Zetas rank second with a closeness centrality score of 0.000311.

Moreover, the difference between closeness centrality scores of the first-ranked Sinaloa Cartel and the sixth-ranked MS-13 is 0.000006. The average closeness centrality score for gang nexus model 1 is 0.000256, and the median score is 0.000303, with a range from 0.000069 to 0.000313. When cartels are removed from the network, the Juggalos and Mexican Mafia rank first in gang nexus model 2 with a closeness centrality score of 0.0003. However, the difference in closeness centrality scores between gangs remains marginal. The Crips and Bloods rank second and third with closeness centrality scores of 0.000299 and 0.000298, respectively. Moreover, as one of several gangs ranked seventh, the closeness centrality score for MS-13 is 0.000294. The average closeness centrality score for gang nexus model 2 is 0.000240, the median score is 0.000291, and the range of scores is 0.000079 to 0.003. Table 4.5 shows the results of the closeness centrality scores for select gangs in all three models. A complete list of closeness centrality scores for each gang can be reviewed in the Appendix.

Table 4.5 Closeness Centrality Scores and Network Rank by Country and Gang Type

Gang	Centrality Score	Centrality Rank	Country	Gang Type
Baseline Model (Unweighted - No Allies & Rivals)				
Bloods	0.000668	1	US	Street
Crips	0.000668	1	US	Street
Aryan Brotherhood	0.000658	2	US	Prison
Aryan Nation	0.000657	3	US	Street
MS-13	0.000651	5	El Salvador	Street
Sinaloa Cartel	0.000651	5	Mexico	Cartel
Neo-Nazi	0.000643	10	UK	Street
Zoe Pound	0.000643	10	Haiti	Street
La Raza	0.000642	11	Mexico	Street
Skinheads	0.000642	11	UK	Street
Gang Nexus Model 1 (Weighted - Allies & Rivals)				
Sinaloa Cartel	0.000313	1	Mexico	Cartel
Crips	0.000311	2	US	Street
Gulf Cartel	0.000311	2	Mexico	Cartel
La Familia Michoacana Cartel	0.000311	2	Mexico	Cartel
Mexican Mafia	0.000311	2	US	Prison
Zetas Cartel	0.000311	2	Mexico	Cartel
Aryan Brotherhood	0.000310	3	US	Prison
Bloods	0.000310	3	US	Street
Juggalos	0.000310	3	US	Street
Sureños	0.000310	3	US	Street
Zoe Pound	0.000310	3	Haiti	Street
La Raza	0.000308	5	Mexico	Street
18th St	0.000307	6	El Salvador	Street
MS-13	0.000307	6	El Salvador	Street
Gang Nexus Model 2 (Weighted - Allies & Rivals, No Cartels)				
Juggalos	0.000300	1	US	Street
Mexican Mafia	0.000300	1	US	Prison
Crips	0.000299	2	US	Street
Bloods	0.000298	3	US	Street
Sureños	0.000298	3	US	Street
La Raza	0.000297	4	Mexico	Street
Vatos Locos	0.000296	5	Mexico	Street
Zoe Pound	0.000296	5	Haiti	Street
18th St	0.000295	6	El Salvador	Street
MS-13	0.000294	7	El Salvador	Street

4.4.4 Betweenness Centrality

Betweenness centrality measures network influence as the extent to which edges pass through a node (Luke, 2015). Nodes act as "bridges" or "brokers," whereby their centrality is determined by the highest number of shortest paths. It is assumed that network influence comes from having direct access to different sections of the network that would otherwise involve a greater number of intermediaries or become altogether disconnected. For the models in this study, betweenness centrality suffers from the same weakness as closeness centrality and is best suited for connected graphs, albeit with a higher centralization index. The betweenness centralization indices for the baseline model, gang nexus model 1, and gang nexus model 2 is 14.65%, 14.29%, and 15.97%, respectively. Similar to the degree and closeness centrality measures, the two central nodes in the baseline model are the Crips and Bloods with betweenness centrality scores of 1107.86 and 984.21, respectively. The Aryan Brotherhood ranks third in network centrality with a betweenness score of approximately 500 points less than the Crips. Their betweenness centrality score of 628.69, however, is closer to the fourth and fifth-ranked gangs. The Aryan Nation has a betweenness centrality score of 572.02, and the Outlaws MC, one of the "Big 5" Outlaw Motorcycle Gangs, has a betweenness centrality score of 503.26. Immigrant gangs have varying degrees of betweenness centrality. The immigrant gang with the highest centrality is the Ñetas, a Puerto Rican prison gang that connects their rivals, Grupo 25 and Grupo 27, to the network. They rank thirteenth with a betweenness centrality score of 214.79, which is slightly less than the Sinaloa and Gulf Cartels that rank tenth and eleventh with betweenness centrality scores of 243.29 and 237.80, respectively. Other immigrant gangs with the highest centrality include MS-13 ranking sixteenth with a betweenness centrality score of 188.37, and Zoe Pound and La Raza ranking twenty-second and thirty-third with betweenness

centrality scores of 91.22 and 32.48, respectively. The average betweenness centrality score for the baseline model is 70.26, with a median score of 4.95 and range from 0 to 1107.86.

In gang nexus model 1, both the Crips and Bloods remain central to the network, ranking first and third with betweenness centrality scores of 1,077.05 and 707.55, respectively. The Sinaloa Cartel, however, ranks second with a betweenness centrality score of 838.78. While their rivalries are primarily limited to other cartels, their alliances are more diverse and include other cartels, street, prison, and outlaw motorcycle gangs. Moreover, they bridge the gap between rival gangs such as the People and Folk Nation, the Sureños and Norteños, and MS-13 and 18th Street. The Gulf Cartel performs modestly higher than in the baseline model, ranking eighth with a betweenness centrality score of 311.45. Similarly, Los Zetas ranks eleventh with a betweenness centrality score of 226.78. In the top five rankings, the Outlaws MC performs lower while the Hells Angels improve to fourth with a betweenness centrality score of 460.53. The Hells Angels are another one of the "Big 5" motorcycle clubs. While the betweenness centrality of immigrant gangs such as the Ñetas and MS-13 are significantly less, Zoe Pound improves their rank to twelfth with a betweenness centrality score of 209.04. The Rollin' 30s Crips, a set of Crips formed by immigrants from Belize, ranks twenty-third with a betweenness centrality score of 93.50. In this model, the average betweenness centrality score is 65.26, and the median score is 1.12, with a range from 0 to 1077.05.

In gang nexus model 2, the Crips are the most central gang in the network with a relatively similar betweenness centrality score of 1049.08 compared to the other two models. The Bloods rank third and have a relatively similar betweenness centrality score of 716.03 compared to gang nexus model 1. Two gangs that improve their network influence when cartels are removed include the Mexican Mafia, ranked second with a betweenness centrality score of

781.29, and the Juggalos, ranked fourth with a betweenness centrality score of 689.87. Ranking tenth, the centrality of Zoe Pound improves slightly with a betweenness centrality score of 211.86. In contrast, the betweenness centrality score of the Rollin' 30s Crips drops slightly to 82.50 with an improved rank of nineteen. The betweenness centrality score of MS-13 also declines, which implies their influence in the gang network, measured by the paths that pass through them, relies on cartels. In this model, the average betweenness centrality score is 64.91, and the median score is 0.6667, with a range of scores from 0 to 1049.08. Table 4.6 shows the results of the betweenness centrality scores for select gangs in all three models. A complete list of betweenness centrality scores for each gang can be reviewed in the Appendix.

Table 4.6 Betweenness Centrality Scores and Network Rank by Country and Gang Type

Gang	Centrality Score	Centrality Rank	Country	Gang Type
Baseline Model (Unweighted - No Allies & Rivals)				
Crips	1107.86	1	US	Street
Bloods	984.21	2	US	Street
Aryan Brotherhood	628.69	3	US	Prison
Aryan Nation	572.02	4	US	Street
Outlaws MC	503.26	5	US	OMG
Sinaloa Cartel	243.29	10	Mexico	Cartel
Gulf Cartel	237.80	11	Mexico	Cartel
Ñetas	214.79	13	Puerto Rico	Prison
MS-13	188.37	16	El Salvador	Street
Zoe Pound	91.22	22	Haiti	Street
La Raza	32.48	33	Mexico	Street
Gang Nexus Model 1 (Weighted - Allies & Rivals)				
Crips	1077.05	1	US	Street
Sinaloa Cartel	838.78	2	Mexico	Cartel
Bloods	707.55	3	US	Street
Hells Angels	460.53	4	US	OMG
Sureños	375.68	5	US	Street
Gulf Cartel	311.45	8	Mexico	Cartel
Zetas Cartel	226.78	11	Mexico	Cartel
Zoe Pound	209.04	12	Haiti	Street
Rollin 30s Crips	93.50	23	Belize	Street
La Raza	87.93	26	Mexico	Street
MS-13	11.46	47	El Salvador	Street
Gang Nexus Model 2 (Weighted - Allies & Rivals, No Cartels)				
Crips	1049.08	1	US	Street
Mexican Mafia	781.29	2	US	Prison
Bloods	716.03	3	US	Street
Juggalos	689.87	4	US	Street
Aryan Nation	419.54	5	US	Street
Zoe Pound	211.86	10	Haiti	Street
La Raza	157.12	12	Mexico	Street
Rollin 30s Crips	82.50	19	Belize	Street
MS-13	1.78	47	El Salvador	Street

4.4.5 PageRank

Developed as an algorithm by Google to detect the importance of webpages, PageRank is a type of eigenvector centrality that best measures node influence in directed graphs. Whereas degree centrality determines network influence strictly based on the number of edges connected to a node, PageRank relaxes the assumption that the connections to those nodes are equal. Instead, PageRank centrality measures network influence by the number of connections a node has in addition to the quality of those connections (Brin & Page, 1998). Under these conditions, a node with few connections can have influence if connected to highly influential nodes. Unlike the other four centrality measures, PageRank does not generate a centralization score. The top four gangs of the PageRank baseline model are similar to the degree centrality baseline model. The Crips and Bloods are the two most central gangs with PageRank centrality scores of 0.0365 and 0.0353, followed by the Sureños and Aryan Brotherhood with PageRank scores of 0.0220 and 0.0198, respectively. MS-13 is the highest-ranked immigrant gang in eighth with a PageRank centrality score of 0.0164. Other highly central immigrant gangs include Zoe Pound, ranked fifteenth, and La Raza, ranked twenty-third with PageRank centrality scores of 0.0134 and 0.0113, respectively. The Sinaloa Cartel ranks twelfth with a PageRank centrality score of 0.0155 followed by the Gulf Cartel and Los Zetas that both rank nineteenth with a PageRank centrality score of 0.0120. Overall, the average PageRank score for the baseline model is 0.0089, the median score is 0.007, and the range is from 0.0017 to 0.0392.

In the gang nexus model 1, Crips and Bloods have the highest PageRank centrality scores of 0.0374 and 0.0335, respectively. The PageRank centrality scores for Zoe Pound and La Raza slightly improve to 0.0163 and 0.0134, along with their ranks of thirteen and twenty, respectively. Additionally, cartels increase their network rank and PageRank centrality scores. The Sinaloa Cartel improves to third with a PageRank centrality score of 0.0272. Other cartels

that improve network centrality include the Gulf Cartel, ranked eighth with a PageRank centrality score of 0.0195, Los Zetas, ranked eleventh with a PageRank centrality score of 0.0183, and the Tijuana Cartel, ranked twelfth with a PageRank centrality score of 0.0168. Despite receiving a PageRank centrality score above the average of 0.0083, the score for MS-13 decreases significantly from the baseline model to 0.0095, earning them a rank of thirty-third. The median PageRank score for gang nexus model 1 is 0.0071, with a range from 0.0015 to 0.0374.

Removing cartels from the network generates the same five most central gangs as the baseline model starting with the Crips, Bloods, and Sureños, with the Aryan Nation, and Aryan Brotherhood switching positions at fourth and fifth rank. Zoe Pound and La Raza remain the most central immigrant gangs ranked ninth and fourteenth with the addition of the Neo-Nazis ranking nineteenth with a PageRank centrality score of 0.0134. MS-13 drops to thirty-ninth with a PageRank centrality score of 0.0072. This is below the average PageRank centrality score of 0.0089. The median PageRank centrality score for gang nexus model 2 is 0.007, with a range of scores from 0.0017 to 0.0392. Table 4.7 shows the results of the PageRank centrality scores for select gangs in all three models. A complete list of PageRank centrality scores for each gang can be reviewed in the Appendix.

Table 4.7 PageRank Centrality Scores and Network Rank by Country and Gang Type

Gang	Centrality Score	Centrality Rank	Country	Gang Type
Baseline Model (Unweighted - No Allies & Rivals)				
Crips	0.0365	1	US	Street
Bloods	0.0353	2	US	Street
Sureños	0.0220	3	US	Street
Aryan Brotherhood	0.0198	4	US	Prison
Aryan Nation	0.0184	5	US	Street
MS-13	0.0164	8	El Salvador	Street
Sinaloa Cartel	0.0155	12	Mexico	Cartel
Zoe Pound	0.0134	15	Haiti	Street
Gulf Cartel	0.0120	19	Mexico	Cartel
Zetas Cartel	0.0120	19	Mexico	Cartel
La Raza	0.0113	23	Mexico	Street
Gang Nexus Model 1 (Weighted - Allies & Rivals)				
Crips	0.0374	1	US	Street
Bloods	0.0335	2	US	Street
Sinaloa Cartel	0.0272	3	Mexico	Cartel
Sureños	0.0259	4	US	Street
Latin Kings	0.0209	5	US	Street
Gulf Cartel	0.0195	8	Mexico	Cartel
Zetas Cartel	0.0183	11	Mexico	Cartel
Tijuana Cartel	0.0168	12	Mexico	Cartel
Zoe Pound	0.0163	13	Haiti	Street
La Raza	0.0134	20	Mexico	Street
MS-13	0.0095	33	El Salvador	Street
Gang Nexus Model 2 (Weighted - Allies & Rivals, No Cartels)				
Crips	0.0392	1	US	Street
Bloods	0.0361	2	US	Street
Sureños	0.0262	3	US	Street
Aryan Nation	0.0229	4	US	Street
Aryan Brotherhood	0.0226	5	US	Prison
Zoe Pound	0.0179	9	Haiti	Street
La Raza	0.0161	14	Mexico	Street
Neo-Nazi	0.0134	19	UK	Street
MS-13	0.0072	39	El Salvador	Street

4.4.6 Eigenvector Centrality

Similar to PageRank centrality, eigenvector centrality considers network influence by the quality of connections to a node. Unlike the PageRank centrality measure, however, eigenvector centrality is useful in determining node influence for undirected graphs. This is reflected in the high eigenvector centralization indices for all three models. The centralization index for the baseline model, gang nexus model 1, and gang nexus model 2 is 77.64%, 78.13%, and 82.94%, respectively. Measured on a scale from 0 to 1, the Crips and Bloods are the two most central gangs in the baseline model with eigenvector centrality scores of 1.0 and 0.9931, respectively. The Sureños rank third with an eigenvector centrality score of 0.6894 followed by the Gangster Disciples with an eigenvector centrality score of 0.6355, and the Black P Stones with an eigenvector centrality score of 0.6254. The immigrant gang with the most substantial influence is Zoe Pound, ranking twelfth with an eigenvector centrality score of 0.5404, followed by Neo-Nazis, ranked fourteenth with an eigenvector centrality score of 0.4831, and Skinheads, ranked seventeenth with an eigenvector centrality score of 0.4660. La Raza and MS-13 rank eighteenth and twenty-first with eigenvector centrality scores of 0.4627 and 0.4551, respectively. Similar to the other models and centrality scores, the Sinaloa Cartel is the highest-ranked cartel at sixteen with an eigenvector centrality score of 0.4694. The second most influential cartel is Los Zetas, ranked thirty-second with an eigenvector centrality score of 0.3723. For the baseline model, the average eigenvector centrality score is 0.2364, with a median score of 0.1587, ranging from 0 to 1.

When accounting for rivalries, gang nexus model 1 shows that the most central group in the network is the Sinaloa Cartel with an eigenvector centrality score of 1.0. They are followed by the second most central gang in the network, the Bloods with an eigenvector centrality score of 0.9263. Ranked in order from seventh to ninth, the cartels central to the network include the

Gulf Cartel, Los Zetas, and La Familia Michoacana Cartel with eigenvector centrality scores of 0.6932, 0.6498, and 0.6467, respectively. The Crips, with an eigenvector centrality score of 0.8462, drops to fourth behind the Sureños, with an eigenvector centrality score of 0.8530. In this model, the separation between the Crips and Bloods is a reflection of ingroup hostilities. The Bloods maintain greater cohesion between their sets than the Crips. Compared to the baseline model, Zoe Pound maintains its ranking with a higher eigenvector centrality score of 0.6079 while other immigrant gangs drop slightly. La Raza ranks twenty-sixth with an eigenvector centrality score of 0.4588, and MS-13 ranks twenty-eighth with an eigenvector centrality score of 0.4115. For gang nexus model 1, the average eigenvector centrality score is 0.2316, the median score is 0.007, and the range of scores is from 0 to 1.

The Bloods remain highly central in gang nexus model 2 with an eigenvector centrality score of 1.0 while the Crips drop to eleventh with an eigenvector centrality score of 0.5844. This is an indicator that the influence of the Crips is more dependent on cartels than the Bloods. Gangs that become more central to the network when cartels are removed include members of the People Nation. Gangs included in the People Nation alliance rank second to fifth with eigenvector centrality scores that range from 0.7485 – 0.8126. When combined with the Bloods, the five most influential gangs in the network belong to one of the largest cliques identified earlier in this section. Moreover, the Insane Unknowns, a gang started by Puerto Rican immigrants and members of the People Nation, represents the most influential immigrant gang in the network with a rank of eight and an eigenvector centrality score of 0.6444. Other immigrant gangs such as Zoe Pound and La Raza remain relatively unchanged from gang nexus model 1. Zoe Pound ranks tenth with an eigenvector score of 0.5866, and La Raza ranks twenty-fourth with an eigenvector centrality score of 0.3399. MS-13, on the other hand, drops significantly in

both rank, forty-sixth, and eigenvector centrality score, 0.1105, suggesting their network influence is contingent upon relationships with cartels. The average eigenvector centrality score is 0.1853, the median score is 0.0814, and the range of scores is from 0 to 1. Table 4.8 shows the results of the eigenvector centrality scores for select gangs in all three models. A complete list of eigenvector centrality scores for each gang can be reviewed in the Appendix.

Table 4.8 Eigenvector Centrality Scores and Network Rank by Country and Gang Type

Gang	Centrality Score	Centrality Rank	Country	Gang Type
Baseline Model (Unweighted - No Allies & Rivals)				
Crips	1.0000	1	US	Street
Bloods	0.9931	2	US	Street
Sureños	0.6894	3	US	Street
Gangster Disciples	0.6355	4	US	Street
Black P Stones	0.6254	5	US	Street
Zoe Pound	0.5404	12	Haiti	Street
Neo-Nazi	0.4831	14	UK	Street
Sinaloa Cartel	0.4694	16	Mexico	Cartel
Skinheads	0.4660	17	UK	Street
La Raza	0.4627	18	Mexico	Street
MS-13	0.4551	21	El Salvador	Street
Zetas Cartel	0.3723	32	Mexico	Cartel
Gang Nexus Model 1 (Weighted - Allies & Rivals)				
Sinaloa Cartel	1.0000	1	Mexico	Cartel
Bloods	0.9263	2	US	Street
Sureños	0.8530	3	US	Street
Crips	0.8462	4	US	Street
Latin Kings	0.8179	5	US	Street
Gulf Cartel	0.6932	7	Mexico	Cartel
Zetas Cartel	0.6498	8	Mexico	Cartel
La Familia Michoacana Cartel	0.6467	9	Mexico	Cartel
Zoe Pound	0.6079	12	Haiti	Street
La Raza	0.4588	26	Mexico	Street
MS-13	0.4115	28	El Salvador	Street
Gang Nexus Model 2 (Weighted - Allies & Rivals, No Cartels)				
Bloods	1.0000	1	US	Street
Vice Lords	0.8126	2	US	Street
Black P Stones	0.8033	3	US	Street
People Nation	0.7691	4	US	Street
Latin Kings	0.7485	5	US	Street
Insane Unknowns	0.6444	8	Puerto Rico	Street
Zoe Pound	0.5866	9	Haiti	Street
Crips	0.5844	10	US	Street
Latin Counts	0.5793	11	Mexico	Street
Vatos Locos	0.4086	16	Mexico	Street
La Raza	0.3399	23	Mexico	Street
MS-13	0.1105	46	El Salvador	Street

4.4.7 Network Centrality Aggregation

Among the five centrality measures used for this study, there is no consensus in the scholarly literature on which one best explains network influence (Luke, 2015; Newman, 2015). Each metric provides its perspective on what constitutes centrality. One can argue that having many connections would increase your relative importance in a network because you have access to information and resources from several sources. Another argument can be made that the shorter the distance between nodes facilitates a quicker speed at which information and resources can travel. However, aggregating the centrality scores across all five measures provides another dimension of analysis in determining gang centrality patterns. Because the centrality scores use different indices, I calculate the aggregate score for each gang by taking the average Z-score. The Z-score provides a standardized metric by converting a value's relationship to the mean of a group of values. When compared to the values of different groups, this places them on the same normal distribution.

When Z-scores are aggregated the Crips and Bloods rank first and second in all three models. As two of the most significant gangs in the United States, this result is not surprising. While the Crips have eight different sets in two or more states in the United States, the Bloods have seven. This is different from other gangs such as the Folk Nation and People Nation, where the alliance is built on a collaboration between several independent gangs. The Latin Kings, for instance, has an aggregate centrality rank of five in gang nexus model 1, placing them significantly higher than the People Nation, ranked twenty-second, with which they are a member. The Aryan Brotherhood ranks third with an aggregate centrality Z-score of 1.82 but drops out of the top five most important gangs when considering negative ties. Accounting for adversarial relationships reduces their rank to eighth with an aggregate centrality Z-score of 1.43. This rank is unchanged in gang nexus model 2, suggesting that the centrality of the Aryan

Brotherhood is based more on their relationships to other gangs in the network, and is less dependent on cartels. In contrast, MS-13 ranks twelfth in the baseline model with an aggregate centrality Z-score of 0.97, drops to thirty-first with an aggregate centrality Z-score of 0.28 in gang nexus model 1 and falls even further in gang nexus model 2 to forty-fourth with an aggregate centrality score of -0.11. It can be inferred from these results that MS-13's influence is adversely impacted by their rivals (compared to their allies), and their dependence on cartels. The network centrality of Zoe Pound, on the other hand, another immigrant gang, is relatively stable across all three models with an aggregate centrality Z-score that improves from model to model. For the baseline model, gang nexus model 1, and gang nexus model 2, their aggregate centrality Z-scores are 0.77, 1.09, and 1.17, respectively. This suggests that their alliances are more impactful than rivalries in determining their network importance, and they are not dependent on cartels. Finally, gang nexus model 2 illustrates the relative importance of cartels in the gang network. For example, the highest-ranked cartel in both models, the Sinaloa Cartel, does not have the highest number of connections as indicated by their rank of eleven in the baseline model. However, they do not have a significant number of rivals, either. This is demonstrated with an improved aggregate centrality rank from eleventh in the baseline to third in gang nexus model 1 with an aggregate centrality Z-score that improves from 0.98 to 2.86, respectively. The aggregate centrality rank of other cartels also improves. The Gulf Cartel, aligned with the Sinaloa Cartel, ranks seventh in gang nexus model 1 with an aggregate centrality Z-score of 1.45. Los Zetas, one of the largest rivals to the Sinaloa Cartel, ranks ninth with an aggregate centrality Z-score of 1.27. As a rival to both the Sinaloa Cartel and Los Zetas, the Tijuana Cartel, ranks thirteenth with an aggregate centrality score of 0.98. One explanation of the influence of cartels in the gang network is their lack of rivalries. Except for MS-13, gangs

rarely challenge cartels. Their rivalries are typically limited to other cartels and global crime syndicates. The data source used for this study, however, does not indicate the role of other criminal organizations other than Mexican DTOs. The Yakuza, Triads, and Italian Mafia, among others, have been reported to operate in the United States, but the extent to which they cooperate with gangs is not well-known. These are relationships that should be explored in future research. Table 4.9 lists the aggregate centrality Z-scores for select gangs. A complete list of the aggregate Z-score results for each gang can be reviewed in the Appendix.

Table 4.9 Aggregate Centrality Z-Scores and Network Rank by Country and Gang Type
Baseline Model (Unweighted - No Allies & Rivals)

Gang	Aggregate Z-score	Centrality Rank	Gang Type	Country
Crips	3.90	1	Street	US
Bloods	3.67	2	Street	US
Aryan Brotherhood	1.82	3	Prison	US
Sureños	1.67	4	Street	US
Aryan Nation	1.63	5	Street	US
Sinaloa Cartel	0.98	11	Cartel	Mexico
MS-13	0.97	12	Street	El Salvador
Zoe Pound	0.77	14	Street	Haiti
Gulf Cartel	0.63	17	Cartel	Mexico
Zetas Cartel	0.60	19	Cartel	Mexico
La Raza	0.50	23	Street	Mexico
Gang Nexus Model 1 (Weighted - Allies & Rivals)				
Crips	3.52	1	Street	US
Bloods ⁶	2.94	2	Street	US
Sinaloa Cartel	2.86	3	Cartel	Mexico
Sureños	2.10	4	Street	US
Latin Kings	1.56	5	Street	US
Gulf Cartel	1.45	7	Cartel	Mexico
Zetas Cartel	1.27	9	Cartel	Mexico
Zoe Pound	1.09	10	Street	Haiti
Tijuana Cartel	0.98	13	Cartel	Mexico
La Raza	0.66	23	Street	Mexico
MS-13	0.28	31	Street	El Salvador
Gang Nexus Model 2 (Weighted - Allies & Rivals, No Cartels)				
Crips	3.24	1	Street	US
Bloods	3.11	2	Street	US
Mexican Mafia	1.79	3	Prison	US
Sureños	1.66	4	Street	US
Juggalos	1.57	5	Street	US
Zoe Pound	1.17	11	Street	Haiti
La Raza	0.80	17	Street	Mexico
MS-13	-0.11	44	Street	El Salvador

⁶ When degree centrality is removed, the Z-score for the Sinaloa Cartel is 2.87 and the Z-score for the Bloods is 2.81 changing their ranking. The Crips remain the most influential gang in the network.

4.5 Discussion

This study has several important implications. Foremost, it highlights the necessity for a more standardized approach to collecting gang data in the United States. Whereas the BAAD model provides a useful framework to study terrorist organizations from a network perspective, the data available to gang researchers fall significantly short of this benchmark. The 2011 NGIC gang report is the most recent source of information on gang location at the national level. At almost ten years since being published, an update on gang location has not been released. In contrast, the BAAD model provides annual updates on the status of terrorist groups to include their location, the (dis)integration of alliances and rivalries, and their network influence, among other details. A similar model for gang studies can be potentially useful to conduct spatial and longitudinal analyses for researchers and policymakers. Moreover, the data collection process for national gang intelligence uses local contributions from law enforcement, leading to concerns over data reliability. The NGIC gang report relies on the participation of local districts that provide information through decentralized channels. C. Ronald Huff and Julie Barrows (2015) point out that law enforcement agencies rarely contribute to regional (20%) and national (15%) gang databases, and less than half contribute information to state (41%) databases (OJJDP, 2013).

Despite the data limitations, the findings in this study demonstrate the value of a macro-level analysis to better understand the structural network of gangs in the United States. Two influential gangs, the Bloods and Crips, score consistently high across the five centrality measures used in all three models as well as the aggregate centrality Z-score. Both gangs demonstrate that they have numerous connections in the network, maintain connections to influential members, remain close to network members, and act as "bridges" to connect various segments of the network. On a broader scale, they highlight the importance of native gangs to the

network structure. Originating in the same area of Los Angeles, the Bloods and Crips were formed by citizens of the United States during a time of social transition towards the end of the civil rights movement. The predation of these gangs has been linked to the formation of immigrant gangs like MS-13 (Wolf, 2012).

Not accounting for cartels, gangs formed by native groups ranked as the top five most central in the network across all metrics used in this study compared to gangs formed by immigrant groups. Immigrant gangs with the highest network centrality include the Haitian gang Zoe Pound, and La Raza, formed by Mexican immigrants. The reason for their network centrality derives from two different sets of factors. Zoe Pound lacks a definitive archrival similar to the Bloods and Crips and Folk and People Nations, respectively. Instead, they are allies with several nationally recognized gangs and bridge the gap between rival gangs. They are aligned with the Bloods and Crips, Gangster Disciples and Black Disciples, and Los Zetas and the Sinaloa Cartel. The rivals to Zoe Pound, on the other hand, are primarily affiliated with white nationalist ideology. These include Skinheads, Neo-Nazis, Nazi Lowriders, and other Peckerwood gangs. In contrast, La Raza has connections to the Crips and high-profile Hispanic gangs such as the Mexican Mafia and Sureños in addition to Los Zetas. As a member of the Folk Nation, however, their rivals include gangs affiliated with the People Nation as well as the Bloods, one of the People Nation's most influential allies. One immigrant gang that has influenced public policy is MS-13 (See Dudley et al. (2018) and U.S. Immigration and Customs Enforcement (2020)). Despite the attention they have garnered, their network influence remains relatively low, a consequence of having a significant number of network rivalries and their dependency on Mexican DTOs. As a Sureño set, their allies are homogenous, including other Hispanic gangs such as the Mexican Mafia and cartels, while their rivals are diverse. They

include influential gangs such as the Bloods and Crips, other Hispanic gangs such as Barrio 18, another Sureño set, and the Aryan Brotherhood, an ally of the Mexican Mafia. MS-13 also openly feuds with the Juarez and Beltrán-Levey (Sierra) Cartels, which is rare for gangs given that DTOs have significantly more resources and behave like para-military organizations. Additionally, MS-13 relies on its connections to Los Zetas and the Sinaloa and Gulf Cartels for influence in the network. Removing DTOs, the network centrality of MS-13 drops significantly. Since native gangs appear to exert more influence over the network, these results suggest that MS-13 is being politicized. That is to say, the discursive context of MS-13 as a national security threat is aimed at achieving some other political objective such as enhancing border security.

In addition to MS-13, Mexican DTOs play a role in shaping the network structure of gangs. When included in the network, several cartels are highly influential. This can be observed in both individual centrality measures and the aggregate scores. More importantly, the removal of cartels reshapes the overall structure of the network. Especially when considering the eigenvector centrality measure, the best predictor of centrality according to the centralization index score for this study. Using this metric, the removal of cartels results in a structural shift to gangs motivated by ideology in what Sullivan describes as third-generation gangs. Aside from the Bloods that remain the most central gang in the network, other gangs include the People Nation and members of their alliance. Two of these gangs, the Vice Lords and Almighty P. Stones, have adopted an Islamic religious identity. In the case of the Almighty P. Stones, founder Jeff Fort pledged his support to former President Muammar Gaddafi by offering his gang's services as a terrorist branch of the Libyan government (Knox, 2008). A third influential gang that is part of the People Nation is the Latin Kings. Jose Padilla, a Muslim convert and member of the Latin Kings, was sentenced under the Patriot Act for conspiring to detonate a dirty bomb

on U.S. soil (*Padilla v Bush et al.*, 2002). Although the affiliation with Islamic extremism has been isolated to individual gang members, the Latin Kings function as a type of religious organization to unite members to protect Hispanic communities (Brotherton & Barrios, 2004). They maintain several branches throughout the world.

Overall, the macro-level network analysis of gangs allows researchers and policymakers to map out gang connections and relationships at a point in time. It can be applied longitudinally to monitor changes in these relationships and observe the structural impact on the gang network. The Aryan Brotherhood, for example, is often associated with white nationalism. However, their alliance with the Mexican Mafia and other ethnic minority gangs has brought condemnation from white supremacists that view these alliances with contempt. The ability to conduct a longitudinal analysis would provide insight on the extent to which the apostasy of white nationalist ideology contributed to their network centrality. The Aryan Brotherhood ranks higher across all five centrality measures than their former white supremacist allies. Further, future research studying the macro-level network structure of gangs should include more organized crime groups. Although this study considers Mexican DTOs, which have a significant structural impact on the gang network, there are other transnational criminal organizations not included in the dataset. To name a few, the Japanese Yakuza, Chinese Triads, and Italian Mafia operate in the United States. After the failed assassination attempt of John Gotti, head of the Gambino crime family, while serving his prison sentence, the Aryan Brotherhood was hired to protect him. A move that has been attributed to raising their profile (Southern Poverty Law Center b, n.d.). However, the extent to which other criminal groups form alliances with gangs is not well understood. Referred to as "Hanging the Blue Lantern," Triads in China use gangs as a probationary mechanism to promote new members (Matheron, 1988). Is the same tradition

practiced in the United States? The inclusion of other criminal groups could provide a more robust portrait of gang structures at the macro-level.

CHAPTER 5

RE-SPATIALIZING GANG MEMBER CONNECTIONS: AN EXPONENTIAL RANDOM GRAPH MODEL OF TWITTER DATA TO ANALYZE THE GEOSPATIAL DISTRIBUTION OF GANG NETWORKS

Gang research commonly focuses on localized geographic spaces (Coughlin & Venkatesh, 2003; Venkatesh, 2000), where descriptors related to demography, organization, and longevity form the cornerstone of the gang construct. This is partially due to data limitations and research agendas that privilege social problems (Pyrooz & Mitchell, 2015). The gang archetype has been described as a loosely connected disorganized group of juveniles whose time in the gang is short, contributing to a consensus that treats gangs as local actors (Venkatesh, 2000). ‘Youth’ or ‘juvenile,’ for example, is often used as a defining gang characteristic (Cohen, 1955; Howell, 2012; Howell, 2015; Klein, 1971; Klein, 2001, Klein & Maxson, 2006; Miller, 1975; Short, Jr. 1996) despite evidence to the contrary (Venkatesh, 2000). The implication of categorizing ‘gangs as youth groups’ suggests gang members lack mobility, and their connections to other gang members are limited to narrowly defined geographic spaces. From a location-based perspective, the interconnectedness of gangs can be explained by the proximity principle. According to the proximity principle, location determines the formation, existence, and maintenance of interpersonal relationships where connections are more likely to form in environments that foster repetitive socialization (Newcomb, 1960). This often occurs in local communities where individuals live, work, worship, or attend school. In short, the proximity principle supports a localized view of gang member interconnectedness. The smaller the geographic space, the greater the likelihood of observing shared connections between gang members.

It would be imprudent to dismiss the valuable contributions localized gang studies have made to the criminal justice field (Hagedorn, 1988; Klein, 1971; Miller, 1958; Sánchez Jankowski, 1991; Short, Jr. & Strodtbeck, 1965; Spergel, 1995; Thrasher, 1927, Vigil, 1988). Localized studies allow us to draw inferences about gangs by comparing factors that are conditioned by geography. However, studies that aggrandize local conditions limit our understanding of gangs to a specific time and place (Venkatesh, 2014). Advances in communication technology have re-spatialized how gang members share information, form connections, and maintain relationships (Pyrooz & Moule, Jr, 2019). For example, Facebook, YouTube, Instagram, and Twitter are digital mediums frequently used to connect gang members (National Gang Intelligence Center, 2015). Yet, in the age of social media, our understanding of gang interconnectivity is not well understood beyond local settings.

Outside of localized gang studies, conclusions on the distribution of gangs are typically determined by qualitative methods (Radil, Flint, & Tita, 2010). The purpose of this study is to quantitatively analyze the geospatial distribution of gang members in the United States using an exponential random graph model (ERGM) of Twitter data. ERG models analyze the sub-structures of social networks to determine the patterns of relationships between vertices (in this case, the influence of location on shared gang member connections). The contribution of this study is threefold. First, I aim to examine location homophily and heterophily by city and state to examine the extent to which location influences gang member connections. If the consensus of gang localization holds, the smaller the geographic space, the more likely we are to observe connectivity between gang members. This would also be an outcome consistent with the proximity principle. This study's second contribution aims to discover the macro-level implications (gang interconnectedness) by examining micro-level processes (gang member

interconnectedness). If gang membership is largely homogenous (gang members belonging to the same gang), then, by proxy, we can make inferences about the national connectivity of gangs. This supports some of the arguments I make in the previous chapter. Finally, I aim to analyze the geographic clustering of the population sample and the distribution of gang members across different cities. Most gangs formed in urban areas and spread to other parts of the country (Howell, 2015). If gangs are strictly localized, then it would be reasonable to expect the frequency distribution of gang members from the population sample to be concentrated in high-density cities. While this objective is less related to the ERG model, it is still an important contribution to understanding the geospatial distribution of gangs.

I divide this paper into three sections. In the first section, I explain gang localization using extant literature to demonstrate the conceptual and behavioral factors as well as law enforcement responses that have contributed to the location-based consensus of gangs. I then provide a counterargument to gang localization by discussing the digital footprint of gangs. In many cases, digital communication technologies have been subverted to assist in gang activity. This includes promoting gang culture, facilitating gang member coordination, recruiting new members, and "cyber banging" with rival gangs (National Alliance of Gang Investigators, 2015). I also discuss studies closely related to my research in terms of their methodological similarities, which ties into the second section of this paper, where I discuss the methodology used to collect and analyze my data. My methodology, or workflow process, involves four stages. In the first stage, the initial seed discovery, I identify gang member profiles on Twitter by capturing streaming API that matches common gang words and phrases, using the Twitter search function, and following Twitter recommendations. In stage two, I conduct a relevance computation by manually inspecting each profile to validate gang members using multiple criteria (e.g., self-

identification, language, hand signs, colors, etc.) and avoid including false-positive Twitter profiles in the sample population. As a former correctional security threat group intelligence officer, I was responsible for validating gang members at intake. I apply a similar methodology for this study to validate gang members on Twitter. The third stage involves searching the REST API to determine the location of validated gang member profiles. I use an exponential non-discriminative snowball sampling process by randomly drawing *followers* from the initial seeds. Out of the randomly selected group, I apply the techniques from stage two to manually validate gang member profiles. I continue stages two and three as an iterative process to build a network edgelist in the fourth stage of my workflow process.

The third and final section of this paper provides two separate sets of results. In the first part, I discuss the data collection results. These include the descriptive statistics on gang member Twitter profiles as well as the gangs and locations I discover from my workflow process. The other set of results include calculations from the ERG model that aims to test four hypotheses. Three hypotheses use nodal attributes of city, state, and gang affiliation to analyze the impact of homophily on gang member connections. The fourth hypothesis involves an edge attribute to determine the influence of distance (miles). Although the data collected for this study does not support a joint effects model that combines nodal attributes, I include these results because interesting inferences can be made in terms of the impact location and gang affiliation have on gang member connections.

Insofar as the results of this study support the proximity principle, it challenges the location-based perspective of gangs. Whereas location homophily plays a role in observing shared connections between gang members to an extent, the statistical significance at the city-level is not as high as one would expect to observe given the localized consensus on gangs. In

fact, gang affiliation appears to better explain gang member connections, and, by proxy, demonstrates national gang interconnectedness. Moreover, the results from the data collection process suggest gang member location is diffuse. They seem to have migrated from high-population density cities to small- and mid-sized cities, a conclusion implicit in James Howell's research (2015). After interpreting the results of the individual and joint effects attribute models, I discuss the implications of this study and provide suggestions for future research.

5.1 The Location-Based Perspective on Gangs

Localization affixed to a particular place implies that subjective factors contribute to localizing an object. What does it mean to claim residence of the United States, California, Los Angeles, Watts, or Jordan Downs? Each geographic space can be considered localized, the scale of which one is appropriate depends on the context or audience. When applied to gangs, there is a consensus among scholars that gangs are territorially bounded to a single street or neighborhood (Venkatesh, 2000). Connections between gang members subsequently form within these geographic spaces. Social psychologists refer to this phenomenon as the proximity principle (Newcomb, 1960), or the network of attraction (Festinger, Schachter, S. & Back, K. 1950), where greater interaction at the local level leads to a higher likelihood that interpersonal relationships will form. Paulina Preciado, Tom Snijders, William Burk, Hakan Stattin, and Margaret Kerr (2012) formally test this theory and conclude that proximity matters in the formation, existence, and maintenance of friendships. Thus, it stands to reason that threats of such a limited scale remain under the purview of local authorities.

The localization of gangs is predicated on a collection of ideas, absent a unified theoretical framework. One of these categories includes the demographic features used to describe gangs and their members. The phrase *youth* or *juvenile gang*, for instance, has become synonymous with gangs in general. James Howell (2015) explains gangs as originating from

juvenile conflict groups. Ascribing *youth* or *juvenile* to ‘the gang’ has become reflexive in other disciplines as well. According to the definition of gangs provided by the American Academy of Child and Adolescent Psychiatry (2016), “Gangs are groups of children, adolescents and young adults who share a common identity and are involved in wrongful or delinquent activities.”

Categorizing gangs as youth groups suggests they have limited mobility or geographic restrictions. Albert J. Reiss, Jr. (1988) describes gangs as a temporary manifestation that invariably dissolves because membership in the long-term is unsustainable. He argues that their impermanence is a result of transience, the incarceration of criminal offenders, and the maturation of other members into adulthood. His last point conceptualizes the gang as a youth group by implying that members transitioning into adulthood abandon the gang lifestyle. On the whole, Reiss’s research supports gangs as local actors by highlighting the internal inconsistencies of the gang and their struggles to maintain cohesion. The constant turnover of membership disrupts the overall organization of the gang, leaving them incapable or unwilling to expand.

Behavior is another area of gang studies contributing to the localization consensus. This strand of research is featured prominently in the neighborhood-effects and collective efficacy literature (Papachristos & Kirk, 2006). Theories such as social disorganization, concentrated disadvantage, and social inequality use neighborhood-effects to explain *how* the failure of social institutions at the local level leads to deviance and other high-risk activities (Sampson, Morenoff, & Gannon-Rowley, 2002). On the other hand, “collective efficacy refers to the process of activating or converting social ties to achieve any number of collective goals, such as public order or the control of crime” (Papachristos & Kirk, 2006, p. 67). Collective efficacy explains behavioral outcomes as an adaptive response to deficiencies in local conditions (Sampson,

Raudenbush, & Earls, 1997). Where the state has failed to provide public goods such as security or economic opportunity, individuals with a shared experience at the local level take collective action. In short, behavior and environment are mutually constitutive. Where neighborhood-effects account for the deterioration of local conditions, collective efficacy explains how gangs respond to negative stimuli.

The localization of gangs, as a behavioral response to environmental conditions, is perpetuated by several other factors. Gangs claim territory, for instance, to provide members a safe area to congregate and carry out illicit business activities. The geographic concentration of gangs results in turf wars (Campbell, 1984; Vargas, 2016), where competition over local resources drive rivalries (Brantingham, Tita, Short, & Reid, 2012). Within these gang-controlled territories, George Tita, Jacqueline Cohen, and John Engberg (2005) localize gangs further into what they refer to as “gang set spaces.” Rather than the total area claimed by a gang, they argue that gang set spaces are smaller subsections within a territory reserved for gang activity, localizing gangs even further. In addition to territorial motivation and material benefits, there are psychological factors for gang participation that emerge within the local context. For example, gangs satisfy status-seeking behavior and help people meet peer-group needs (Cohen, 1955; Shaw & McKay, 1942; Thrasher, 1927). In some cases, gangs provide a source of friendship, mutual trust, and identity (Klein, 1995), and in other cases, they provide a path for individuals to gain power (Knox, 1994) or respect (Anderson, 1999). All of which have a higher local intrinsic value.

Finally, approaches to combat gangs are formulated at the local level, reinforcing the consensus that gangs are localized. Anti-gang tactics aim to attack an individual’s involvement at different stages of participation. According to Beth Bjerregard (2015), these strategies include

prevention, intervention, and suppression. Prevention strategies establish programs to deter individuals from joining a gang and generate public awareness of the dangers of gang-life. In cases where someone joins a gang, however, intervention strategies provide a means of escape. Suppression strategies, the bedrock of the criminal justice system, involves intelligence gathering, policing, and legislation to punish gang members for criminal activity. Taken together, prevention, intervention, and suppression represent a comprehensive strategy to mitigate gang activity at the local level by focusing on deterrence, structural change, and community mobilization to discourage the material and psychological incentives of gang participation (Spergel & Curry, 1993). For example, the suppression tactics in Project Bull's Eye, an anti-gang initiative in Durham, North Carolina, aims to reduce gang-related violence in the city through specialized training for law enforcement, intelligence sharing, and cooperation among local and state agencies. The prevention and intervention strategies outlined in this initiative identify at-risk juveniles, collaborate with faith-based organizations, and address quality of life issues. Insofar as Project Bull's Eye modeled parts of the U.S. Department of Justice crime reduction strategy, the overall focus is strictly localized. Missing from Project Bull's Eye, however, is a collaborative effort involving other state or federal law enforcement agencies despite the national and transnational connections between gangs.

Strategies designed to mitigate gang activity focus on local conditions (Decker, McGarrell, Perez, & Hipple, 2007). There are, however, some federal resources available to state and local districts. The federal legal system factors prominently in the state's arsenal to combat gang criminality. Thirty-six out of the fifty states plus the District of Columbia have adopted RICO statutes, and 27 states have amended these statutes to include gang participation (Bjerregaard, 2015). RICO, the Racketeer Influenced and Corrupt Organizations Act of 1970,

was instrumental in dismantling the American Mafia. Rather than charging criminal offenders individually, RICO gave prosecutors the authority to charge a group of offenders with the same crime. Other federal laws target illicit acts commonly associated with gang activity. The Violent Crime and Law Enforcement Act of 1994, signed by President Bill Clinton, extended the maximum sentence for drug-related crimes when the offender is gang-affiliated. Chapter 26, section 150001 entitled *Street Gangs*, subsections b, c, and d allow additional penalties to prison sentencing not to exceed ten years (103rd Congress, 1994). Another initiative that takes a similar approach, Project Safe Neighborhoods (PSN), includes additional sentencing for gun-related crimes involving gang members (Decker, McGarrell, Perez, & Hipple, 2007). The problem is the inconsistency in the application of the law as state, local, and judicial authorities pursue criminal charges and sentencing at their discretion. In states that have gang participation statutes, it is not mandatory to prosecute criminal gang members under the more stringent penalties.

Further, while a little more than half of the states have enacted gang participation statutes, twenty-four states have not (Bjerregaard, 2015). Disparate responses to gangs at the state and local levels incentivize gangs to establish network connections in areas where the laws are more lenient. Additionally, policymakers use the same nomenclature as the consensus among scholars and researchers of gang studies. PSN, for instance, describes gang members using terms such as 'youth' and 'juvenile.' As I have argued, the focus on juvenile gang members misrepresents the gang phenomenon by contributing to the perceived localization of gangs.

Despite gangs being mutually constitutive with local conditions, there is evidence to support that these same conditions exist across space and time, challenging the uniqueness of this relationship (Howell, 2015). If the conditions that led to gang formation is consistent across the country, then why is there so much emphasis on localizing gangs? Gangs are more complex than

can be explained by local dynamics, and while their ties to the community make sense, some scholars have debated the location-based consensus. Julie Ayling (2011) adopts an evolutionary approach to better understand the gang phenomenon. "An evolutionary framework of variation, selection, and replication can assist in unpacking the forces at work in determining differential patterns of evolution" (p. 13). Despite having similar origins, gangs transform along different trajectories (Howell, 2015). Some examples of gang variation that Ayling identifies include demographics, organizational structure, and purpose.

Further, theories that are strictly localized ignore the proliferation of gangs. Gang proliferation is part and parcel of changes in the landscape that elicit an adaptive response (Ayling, 2011). The commercialization of cocaine and other narcotics, discussed in Chapter 2, created a market-oriented gang motivated more by profits than territory (Coughlin & Venkatesh, 2003). Explaining the gang phenomenon through a local lens also limits our understanding of gangs by focusing on the proximity of gang members in the same geographic space. Modern technology, however, has condensed time and space, making communication possible regardless of location. The introduction of social media sites like Twitter, Facebook, and Instagram has created a more interconnected world for socialization and the exchange of ideas. Cyberspace has transformed the "local gang," once isolated by geography, into *netwarriors* where connections are local, national, and transnational (Arquilla & Ronfeldt, 2001). Instrumental in the transformation process are social media platforms.

5.2 Gangs, the Internet, and Social Media

Introduced to the public in 1991, the World Wide Web laid the groundwork for the modern social media era. Andreas Kaplan and Michael Haenlein (2010) define social media as "a group of internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (p.

60). José Van Dijck (2013) points out that the original vision behind this digital revolution "make culture 'participatory,' 'user-centered,' and 'collaborative'" (p. 10). The rise of social media sites such as Facebook, Twitter, and Instagram provides users the ability to search, create, select, share, and store information. Speaking in more general terms, Lisa Gitelman (2006) explains 'media' as a "socially realized structure of communication, where structures include both technological forms and their associated protocols, and where communication is a cultural practice, a ritualized collocation of different people on the same mental map, sharing or engaged with popular ontologies of representation" (p. 7). Whereas Kaplan and Haenlein provide a basic understanding of *how* social media is used, Gitelman explains *why* social media is used.

Creating user content through social media platforms is a form of expression and identity, the result of which generates like-minded communities. Janet Abbate (1994), while not directly referencing social media, correctly points out that having an online presence dually constitutes users as both "consumers" and "framers" of technology. Gitelman expands on Abbate's sentiment by discussing the ontological reality of social media users. She states, "Users in this sense do not necessarily stand in any self-conscious relationship to publics. They are neither exactly "counterpublics" nor exclusively sub-cultures; they are diverse, dynamic, and disaggregate. They stand both as mirrors and receptors for the ideological: individuals do not "belong" as users, but their activities as users can have profound consequences... in belonging" (Gitelman, 2006, p. 60). Thus, social media users and the networks they create influence and attract similar others. They are both creators and consumers of information whose opinions and digital footprint shape public discourses.

Beyond the ontological expression of social media are the speed at which information is generated and the magnitude at which it is simultaneously consumed. In an annual study released

by Cumulus Media, an internet minute in 2018 generated 3.7 million Google searches, 4.3 million YouTube videos watched, 973,000 Facebook logins, and 481,000 Tweets (Desjardins, 2018). This is impressive when compared to other, more traditional media formats. Daily televised news broadcasts, for example, attract an average of 4 million daily viewers (Pew Research, 2019a) while print newspapers at their peak had 63 million daily subscribers (Pew Research, 2019b). Moreover, the number of social media users overshadows other media platforms. The number of active monthly Twitter users, for instance, in the last quarter of 2017 was 330 million (Statista, 2018a).

Given the potential for user-generated content and the interconnectedness made available by social media platforms, it is not surprising that gangs have subverted these digital applications for their advantage. Maintaining a social media presence allows gangs to recruit new members, promote their ideology, threaten rivals, and coordinate activities. A 2015 survey on gang member social media participation conducted by the National Gang Intelligence Center (NGIC) shows that nearly 100% of agencies report street gang members having a Facebook account, and a little over 60% have an Instagram and Twitter account. Another survey conducted by the NGIC reveals that gang member social media usage continues during incarceration. Similar to street gang members, the most preferred social media platform for prison gang members is Facebook. Nearly 100% of agencies reported inmates to have an active Facebook account. Additionally, 50% of prison gang members use Twitter, while another 45% use Instagram. Gangs control the flow of contraband into prisons through bribery and coercion in order to maintain unsupervised connections to their associates outside the prison.

There are several reasons that gang members use social media. The NGIC report identifies “recruitment, communication, targeting rivals, advancing criminal activities, and

thwarting law enforcement” as some of the more frequent usages of social media by gang members. This includes luring girls into sex trafficking, cyber banging, and witness tampering. More importantly, gangs establish online networked communities through social media in what Mizuko Ito and Daisuke Okabe (2005) refer to as “ambient co-presence.” Philippa Collin, Kitty Rahilly, Ingrid Richardson, and Amanda Third (2011) succinctly summarize this concept as, "Ongoing visual access to a small-scale communication cluster (or community) via spontaneous and everyday images uploaded to a collaborative media space" (p. 18). These images make permissible the glorification and dissemination of gang culture. Images and videos depicting camaraderie, cash, drugs, women, and urban masculinity are common in promoting the gangster lifestyle (Patton, Eschmann, & Butler, 2013). "Content sharing plays a major role in cultivating belonging and a sense of collective identity. Sharing written, visual, or audio content on SNS (Social Networking Sites) that represents or portrays an individual or community experience invites others to engage and relate" (Collin, Rahilly, Richardson, & Third, 2011, p. 18). Social media provides a portal for gangs to proselytize individuals receptive to their message. The same strategies are used by terrorist groups to facilitate norm crystallization in the radicalization process (US Senate Committee, 2008).

In addition to the functional benefits of participating in social media platforms, gang members enjoy certain protections for being members of the social media community. Provided users do not violate established community standards, there is no prohibition on content promoting gang culture. Instead, their social media posts are considered a form of expression and granted protection under the first amendment. Not only are these posts an acceptable form of free speech, but social media search functions can be used to find gang member profiles. Moreover, the algorithm used by social media sites recommends gang member profiles when viewing other

similar accounts. I use this feature, among others, during the discovery phase of my workflow process.

Another way social media companies facilitate an online gang presence is through legal protections. Although law enforcement agencies are capable of monitoring social media activity, they are prohibited from acquiring developer credentials. This condition is explicitly stated in the application and agreement statement. In 2016, social media platforms such as Facebook, Instagram, and Twitter restricted developer credentials to prohibit law enforcement agencies from collecting data on their users (Brennan Center for Justice, 2019). Additionally, depending on the location of their servers, social media companies are not legally obligated to assist with criminal investigations. In the ruling of *Microsoft v United States* (2016), it was decided that the Stored Communications Act (SCA) did not extend extraterritorially outside of the United States. Judge José A. Cabranas in his dissenting opinion stated that the majority's decision "has substantially burdened the government's legitimate law enforcement efforts, created a roadmap for the facilitation of criminal activity and impeded programs to protect the national security of the United States and its allies" (p. 2). This sentiment was affirmed by Deputy Assistant Attorney General Brad Wiegmann (2017) in testimony given to the U.S. Senate Subcommittee on Crime and Terrorism (2017). He provides the following examples:

of dozens of investigations, across the country, in every judicial circuit, in which the impact of the Microsoft decision has frustrated those investigations and risked thwarting the pursuit of justice... The impacted investigations run the gamut – from child exploitation and human trafficking, to firearms and drug smuggling, to tax fraud, computer fraud, and identity theft. These cases directly affect public safety and may even affect national security. While the most obvious impact of the Microsoft decision may be to frustrate investigations of foreign nationals targeting U.S. victims, these examples make clear that the Microsoft decision also thwarts or delays investigations even where the victim, the offender, and the account holder are all within the United States (p. 5).

Finally, social media, in addition to other new technology, has been used to conceal the identity of criminal offenders through coded transmissions. Downloadable apps available in the Apple Store and Google Play enable senders to deliver messages without leaving trace evidence on their electronic device (NGIC, 2015). Receivers, on the other hand, can access messages using cloud data storage, making it difficult to implicate them in illicit activities. Overall, social media provides an advantage to gang members in both functionality and protection.

5.3 Similar Studies to Detect Criminal Groups Using Social Media Analytics

The late 1980s ushered in the “empirical era” of criminology (Pyrooz & Mitchell, 2015). However, the introduction of research methods and their applications in this field of research has lagged behind other disciplines (Sierra-Arevalo & Papachristos, 2015). Social network analysis and social media analytics, two well-established methods of quantitative research, have only recently been applied to the study of gangs. Social media analytics, in particular, provides researchers an alternative to mine data on gang members in the absence of publicly available statistics. When addressing the sprawl of criminal gang behavior, open-source data and text analytics are useful in analyzing the threat (Brewster, Polovina, Rankin, & Andrews, 2014). Whether for personal use or to facilitate the needs of the gang, gang members are raising their digital profile by maintaining an online presence.

The difficulties in analyzing the gang phenomenon in the United States stems from data availability, data reliability, and the covert nature of gang activity. Although there are inconsistencies across the country on how government entities collect and use gang data, there is one commonality; gang data on individuals is on a “right-to-know, need-to-know” basis. In other words, intelligence data on gang members are reserved for law enforcement authorities working in the official capacity of tracking criminal gang activity.

Social media analytics helps circumvent the limitations facing researchers. Although not targeting gangs specifically, Swati Agarwal and Ashish Sureka (2015, 2016) highlight the efficacy of using social media to detect covert networks. They use text-data sentiment analysis on Tumblr, a microblogging and social networking website, to detect networks of jihadi extremists. In 2018, Tumblr ranked the 7th most popular social networking site (Statista, 2018b). Agarwal and Sureka use a multi-step iterative detection process that begins by identifying users, or "seeds," that meet their criteria of "hate promoting" bloggers. They identify initial seeds by retrieving textual posts in the Tumblr application programming interface (API) using the search function. This discovery phase involves searching text-data in relevant tags, posts, and usernames. Some of the language they target includes 'jihad,' 'ISIS,' 'holy war,' and other words, phrases, and topics commonly associated with Islamic extremism. They use posts originating from a blogger's account, or re-blogged content from other bloggers' accounts. In the next phase, Agarwal and Sureka conduct a manual inspection of blogs to remove the false positives in their search query. The context of blogs that discuss Islam and ISIS, for instance, are not necessarily promoting hate but could be some other type of reference point or discussion. Additionally, Agarwal and Sureka clean their data in this second phase by removing non-English words along with English stopwords. The third phase involves a relevance computation by comparing exemplary documents (conducted as a separate phase and then attached to the workflow process) to a character level n-gram language modeling approach. In stage four, they consider the connection of users to the initial discovery phase by comparing notes on relevant users (re-blogged and liked posts). The number of notes represents the popularity and similar interests between users to establish the community of extremist bloggers.⁷ Finally, the authors conduct a

⁷ There are two reasons for this approach. First, the privacy policies of Tumblr prohibit the extraction of followers from other bloggers. The other reason is that tracked tags create a virtual community. Regardless if bloggers follow

social network analysis of relevant bloggers using a directed graph traversal random walk algorithm where nodes represent bloggers, and edges indicate the ties (re-blog and like) between bloggers.

The use of network analysis in Agarwal and Sureka is especially critical when attempting to observe patterns that are not easily identifiable from raw data. Jacob Moreno (1934) was one of the earliest authors to develop the application of sociometric methods, which aim to analyze the interpersonal relationships between individuals. Since his seminal work in sociology, Moreno's sociometric model has become a useful analytic tool permeating to other research disciplines. Stuart Koschade (2006) uses SNA to analyze Jemaah Islamiyah (JI), the terrorist group responsible for the 2002 bombing in Bali. Within the JI terrorist cell operating in Bali, his results show the activity of members, the access each member has to other members, and the flow of information. He suggests applying his research to other terrorist cells responsible for bombings in Jakarta in 2003, an Australian embassy in 2004, and the second bombing in Bali in 2005. Koschade concludes that SNA, as a counter-terrorism tool, can better inform policymakers on the formation of terrorist cells and their clandestine operations.

The same methods developed by Moreno can be useful in criminology. “Effective use of SNA techniques to mine criminal network data can have important implications for crime investigations. The knowledge gained may aid law enforcement agencies fighting crime proactively” (Xu & Chen, 2005, p. 106). This is especially more acute in a globalized world where criminal connections have become transnational (Brewster, Polovina, Rankin, & Andrews, 2015). In addition to SNA as a resource to learn about the interpersonal relationships of criminal connections, open-source data, and text analytics facilitate the analysis of sociometrics to

each other, they are linked by their shared interests. A new post, with a specific tag, automatically appears on a user's dashboard based on their interests as opposed to direct contact with other users.

mitigate criminal threats. Research conducted by Lakshika Balasuriya, Sanjaya Wijeratne, Derek Doran, and Amit Sheth (2016), while not concerned with SNA, serves to provide an outline for detecting gang members on Twitter. Their workflow process resembles Agarwal and Sureka, with the exception of using language as an identifiable criterion. Language, according to them, differs across space and time, making gang member detection ineffective (For more on this point, see also Desmond Patton, 2015). Rather, they identify commonly used hashtags such as #BGD (Black Gangster Disciples) to detect gang member profiles in addition to shared musical interests of gangsta rap, a sub-genre of hip-hop, to validate those profiles. More specifically, they focus on the cross-section of rap artists that are gang-affiliated. The authors discovered 400 gang member profiles using this method. Although their contribution to the larger body of knowledge compares Tweet texts, Twitter profile descriptions, musical interests, emojis, and profile images between gang and non-gang members, using rap music to identify gang members limits the results to minorities. White gangs, for instance, typically listen to a different music genre such as punk rock. Moreover, the hashtags they use in their detection process focus on a specific gang, the Black Gangster Disciples. Despite these limitations, their research provides reference points for other researchers to follow. They conclude that discovering gang members on Twitter requires a comprehensive process targeting their use of digital media such as images, videos, and emojis. I use this approach to validate gang member profiles and identify their gang affiliations. Refer to the methodology section in this paper for further details on my gang validation process.

Similar to Balasuriya, Wijerante, Doran, and Sheth, Sanjaya Wijerante, Derek Doran, Amit Sheth, and Jack Dustin (2015) establish a process to analyze the digital footprint of gangs by collecting open-source API data on Twitter. The authors automate a spatiotemporal-thematic analysis to discover the relationship between gang member location and their correspondence.

Specifically, they found a significant level of cyber banging between two rival gangs. The automation of this discovery method, however, only generated a location in 3.62% of the Tweets they extracted. Further, the authors conduct a social network analysis on a directed graph using friend and follower connections. They discover that the average degree in their network is fifteen, meaning that each Twitter user in their dataset is connected to fifteen other users, on average. Additional findings reveal 72 interconnected communities with an average of 19 users per community with significant offline interaction between gang members. The sentiment-emotion analysis along seven emotional categories (joy, sadness, anger, love, fear, thankful, and surprise) conducted by the authors show that gang interaction is mostly negative. The authors attribute this to the excessive use of curse words. Wijerante, Doran, Sheth, and Dustin run into the same problem as Balasuriya, Wijerante, Doran, and Sheth. The scope of their study, while demonstrating the potential for social media analytics, is limited to two rival gangs, the Gangster Disciples and Black Disciples, within ten neighborhoods on the South Side of Chicago. Their discovery process only generated 91 gang members. Limitations in the geographic range, the small size of the dataset, and the lack of diversity among gangs could bias the results of this study. For example, one would expect to observe a negative sentiment when studying the relationship between two rival gangs.

One study that maps out gang connections in a larger geographic space is conducted by Julian Way and Robert Muggah (2016), who use Twitter analytics and SNA to analyze human smuggling at the U.S.-Mexico border. The research of Way and Muggah demonstrates the utility of social media analytics for gathering intelligence data on criminal organizations. Although their intended purpose was to examine the digital footprint of cartels and gangs in sex trafficking between Tijuana, Mexico, and San Diego County, the results revealed the pervasiveness of illicit

criminal networks. They inadvertently discovered covert networks extending from the southern border of the United States to cities like Chicago, New York, Miami, and Baltimore.

Additionally, they found transnational connections involved in the sex trafficking trade in other Latin American countries such as Colombia, Argentina, Uruguay, and Nicaragua. The discovery process of Way and Muggah resembles Balasuriya, Wijerante, Doran, and Sheth in that they conduct a digital forensic analysis of users by manually inspecting Twitter profiles. Their research differs, however, in that they use existing public profiles of cartel and gang members and rely more heavily on text-data. They create a lexicon of “gang slang” terms to assist in identifying cartel and gang member profiles. One of the interesting results in their study is the discovery of other gangs. Way and Muggah avoid the selection bias of Wijerante, Doran, Sheth, and Dustin and Balasuriya, Wijerante, Doran, and Sheth by discovering a more varied selection of gang profiles that include Hispanic and non-Hispanic gangs outside the initial geographic point of inquiry. In their analysis, Way and Muggah offer an important methodological suggestion.

Social media analytics methods are capable of effectively detecting, identifying, tracking, and monitoring the ongoing communications, interactions, activities and operations of criminal gangs in the U.S. and Mexico. The approach to research requires a clear recognition of the opportunities and constraints of monitoring social media. It is not merely a matter of hoovering-up masses of social media profiles and generating "hits," though this is part of the process. What is often required is very detailed assessments of “suspected” profiles, assessing content and associated networks, and then repeating the process with positive returns. The approach is less Big Data crunching and more mixed-method and qualitative (p. 14).

I consider the point made by Way and Muggah an essential part of the methodology for this research. However, while Way and Muggah privilege the study of gangs and crime (See also Pyrooz & Moule, Jr. (2019) for a comparative analysis of criminal behavior between gang and non-gang members online, and Sela-Shayovitz (2012) for a discussion on gangs and cyber-

crime), I seek to answer a more fundamental question about gangs. Chiefly, how significant is geographic location to gang member connections in the era of social media?

5.4 Methodology

There is little argument that monitoring the digital footprint of gang members provides a valuable resource to gather intelligence data. While conducting this study, I encountered several profiles where Tweets originated from inmates inside a prison. The timestamp on one photo was sent five minutes prior to me accessing their Twitter account. Other profiles revealed military-connected gang members, ties to high-profile celebrities and politicians, and references to criminal activity. Despite the benefit of observing criminal gang activity, social media analytics can also improve our understanding of the gang phenomenon outside of the criminogenic perspective. My research differs from other publications in that I seek to address the impact of location on gang member connections using Twitter data. For this study, I examine gangs using an exponential random graph model (ERGM) to test the location homophily of gang member connections. I test the following four models and hypotheses that consider three nodal attributes, city, state, and gang affiliation, and an edge attribute, the distance (miles) between nodes:

Node Attribute Models

Model 1: Location by City

H₀ – City attributes have no impact on gang member connections.

H₁ – Gang members in the same city are more likely to form a connection.

Model 2: Location by State

H₀ – State attributes have no impact on gang member connections.

H₁ – Gang members in the same state are more likely to form a connection.

Model 3: Gang Affiliation

H₀ – Gang affiliation has no impact on gang member connections.

H₁ – Gang members with the same gang affiliation are more likely to form a connection.

Edge Attribute Model

Model 4: Location by Distance (Miles)

H₀ – Distance between gang members has no impact on their connection.

H₁ – The less distance between gang members, the more likely they are to form a connection.

I collected the data for this study using Twitter. “Twitter is a real-time global information network that lets users create and share ideas and information instantly. People and organizations send messages through our website and mobile site, client applications (e.g., Twitter for Android; Twitter for iOS), SMS, or any variety of third-party applications” (Twitter Help Center, n.d.). I use R-Studio, an integrated programming environment for R, to capture Twitter streaming API and generate the results of this study. “R is a language and environment for statistical computing and graphics” (The R Foundation, n.d.).

5.4.1 Twitter

My research uses Twitter data to analyze the geographic distribution of gang members. Other social media platforms are available, and some, like Facebook, have a higher usage rate among gang members. However, Twitter API is robust and more accessible for data retrieval. Whereas Twitter’s default account setting is public, Facebook provides several different filters for users to restrict access to their content (Lomborg & Bechmann, 2014). The research I highlighted in the previous section illustrates the efficacy of collecting Twitter data to identify gang members. Further, the extracted data can be used to conduct sentiment and emotion analysis or analyze the community structure of social networks.

Sanjaya Wijerante et al. (2018) provides a detailed description of the data that can be extracted from a tweet, the metadata-related features, and data conversion using Twitter analytics to ascertain meaningful inferences. I am concerned with the application of Twitter-related features to identify gang members. Moreover, the sentiment of a tweet is necessary to determine if a connection between Twitter users is positive or negative. The text data in a tweet contains positive, negative, or neutral connotations to determine the sentiment of the sender. For example, gang members frequently engage in “cyber banging.” Desmond Patton, Robert Eschmann, and Dirk Butler (2013) refer to this as, “The phenomenon of gang affiliates using social media sites

to trade insults or make violent threats that lead to homicide or victimization.” According to them the three features of “cyber banging” include the following: “(1) promote gang affiliation and/or communicate interest in gang activity; (2) gain notoriety by reporting participation in a violent act or communicating an impending threat; (3) share information about rival gangs or network with gang members across the country” (p. A55). Users can also attach hashtags or URLs that identify a topic of discussion. Additionally, user mentions and retweets illustrate a connection between two or more Twitter profiles. Tweet indicators reveal the number of times a retweet is sent, the original author, and the number of "likes" a tweet receives. A Twitter account displays the user’s name, screen name, and sometimes a location. There is also the opportunity for users to provide a brief biography or description of themselves that is publicly available for others to view (provided a profile is not private). One of the profile features relevant for extrapolating social network data is the friends and followers of a user. These indicate if a connection between users exists.

In addition to text and user data, each tweet has metadata that is not readily available through the standard interface on Twitter. Metadata includes a unique identifier for each tweet, coordinates (longitude and latitude) of a tweet's origin location, the machine-detected language of a tweet, a record of the Coordinated Universal Time (UTC), and the time zone where the tweet was sent. Taken together, the text data, user data, and metadata can be applied to word n-grams (unigram or bigram), part of speech (PoS) tags, entities that are either explicitly or implicitly named, user mentions, hashtags to identify discussion topics, or URLs relevant to the exchange of information between users. Finally, retweets, replies, and friends/followers are all useful in conducting social network analysis.

5.4.2 Workflow Process

The methods to conduct a social media analysis are well-established, as I demonstrated in the previous section. They typically involve stages of discovery, relevance computation, manual inspection, and, if applicable, building a social network dataset. My workflow includes the following four-step process:

1. Seed Discovery – In the initial seed discovery stage, I identified gang member profiles using three strategies. One strategy involved capturing Twitter streaming API coded in R-Studio from a bounding box that targeted the continental United States. When attempting to analyze human trafficking on the southern border, the use of language was effective for Way and Muggah in the seed discovery process. Gangs use language as one method to establish and reinforce a distinct identity. The words and phrases gang members use can be as simple as a standard greeting, a way to denigrate rivals, or to reference people, places, or events. Balasuriya, Wijerante, Doran, and Sheth and Wijerante, Doran, Sheth, and Dustin used hashtags such as #BDK (Black Disciple Killer) and #GDK (Gangster Disciple Killer) in the discovery stage of their workflow process. Unlike these other studies, however, I use language configurations that target a broader spectrum of gangs. The list of words and phrases I use to capture tweets are both general and specific to the Bloods, Crips, People Nation, Folk Nation, Five Percenters, Black Guerilla Family, Hispanic gangs, White gangs, Jamaican gangs, Outlaw Motorcycle Gangs, and Asian gangs. Table 5.1 provides a sample of the words and phrases that I use to capture the Twitter streaming API of gang members. A complete list of the words and phrases I used to detect gang members can be found in the Appendix.

Table 5.1 Language Sample for Four of the Largest Gangs in the United States

Gang	Language	Meaning
Folk Nation	All is one	We're all together and OK
	GD	Gangster Disciples
	74	Gangster Disciples
People Nation	Vicky Lous	Insult to Vice Lords/People Nation
	(G)DK 5 in the sky, 6 must die	(Gangster) Disciple Killer Revenge against Folk
	ALKN	Almighty Latin King's Nation (a member of the People Nation)
Crips	Slob, Sloob	Disrespect to Bloods
	Adidas	All Day I Destroy a Slob (Blood)
	B/K	Blood killer
	What it C Like	Crip greeting
Bloods	Crab	Disrespectful name for Crip
	Damu	Swahili for Blood
	Snoovers	Insult to Hoover Street Crips
	Krab	Insult to Crips

The Twitter search function was another strategy I used in the discovery stage. A similar method is used in Sureka and Argarwal to discover extremist groups on Tumblr. I typed gang names into the search bar on Twitter and inspected profiles that matched the results. Further, Twitter uses an algorithm to recommend user-profiles based on your Twitter activity. The final strategy I used in the discovery process involved following Twitter recommendations.

2. Relevance Computation – The second stage involved relevance computation based on the initial seed discovery from the first stage, referenced against exemplary documents. I

conducted this stage manually to validate gang member Twitter accounts and avoid including false-positive profiles into the dataset. G. David Curry (2015) emphasizes self-identification as important to the validation process, but I include gang member profiles with two or more of the following criteria: self-identification, language, hand signs, tattoos, media illustrating gang culture/symbols, gang colors, associates, hashtags, emojis, or external news sources (primarily used for gang-affiliated celebrities). Table 5.2 shows the breakdown of the gang member validation criteria. Since this study is predicated on the use of language to detect gang members, it is not surprising that the largest factor across all validated gang member profiles is language. As a percentage of total gang members, 80.30% of gang member profiles included language as one of the validation criteria. Among all validated gang members, 32.37% met at least two criteria and 33.88% met three criteria.

Table 5.2 Gang Member Validation Criteria

Validation Criteria	Total Validation Criteria	Validation Criteria as % of Total Gang Members	Validation Criteria Met	Total Validation Criteria Met by Gang Members	Validation Criteria Met as % of Total Gang Members
Self-Identification	293	40.36%	Two	235	32.37%
Language	583	80.30%	Three	246	33.88%
Hand Signs	237	32.64%	Four	125	17.22%
Tattoo	14	1.93%	Five	84	11.57%
Media	375	51.65%	Six	30	4.13%
Colors	186	25.62%	Seven	6	0.83%
Associates	301	41.46%			
Hashtag	158	21.76%			
Emoji	176	24.24%			
News	25	3.44%			

A further breakdown of those gang members that only met the two criteria threshold shows that 10.64% were validated because they self-identified *and* used gang language. Another 78.3% of gang members that met at least two validation criteria included either self-identification *or* language. Those that self-identify and include some other criteria represent 18.72% of the sample population, and 59.57% include language and some other criteria. In all pairs of criteria, substantive evidence was used to validate a gang member. For example, no gang members were validated using only a hashtag and emoji. If the supporting evidence to validate a gang member could not be found, then the profiles were discarded. Table 5.3 provides a breakdown of the validation criteria for gang members meeting two criteria as a subset of the total sample population. As a correctional officer, I used similar methods to validate gang members during the intake process and when dispatched as a member of the Prison Emergency Response Team (PERT).

Table 5.3 Validation Criteria for Gang Members Meeting Two Criteria as a Subset of the Total Sample Population

Validation Criteria Combinations	Total Validation Criteria Combinations	Combination of Validation Criteria as % of Total Gang Members Meeting Two Criteria
Self + Language	25	10.64%
Self + Other Criteria	44	18.72%
Language + Other Criteria	140	59.57%
Hand Sign + Media	2	0.85%
Hand Sign + Colors	1	0.43%
Hand Sign + Associates	2	0.85%
Hand Sign + Hashtag	2	0.85%
Hand Sign + Emoji	1	0.43%
Tattoo + Emoji	1	0.43%
Media + Colors	3	1.28%
Media + Associates	5	2.13%
Media + Hashtag	2	0.85%
Media + Emoji	2	0.85%
Media + News	1	0.43%
Colors + Emoji	1	0.43%
Associates + Hashtag	1	0.43%
Associates + Emoji	1	0.43%
Associates + News	1	0.43%

Gang members can be identified as one of three levels, according to the Santa Cruz County Gang Task Force (2018). At the lowest level are *Wannabes*. A *Wannabe* has no formal ties to a gang but expresses an interest in gang culture and often fits the profile of gang members, such as living in a poor neighborhood, high truancy, and poor performance in school. The second level of gang involvement is an *Associate* characterized by having a personal relationship with a gang member, adopting gang colors and symbols, and considerations for joining a gang. *Gang Members* are the highest level of gang involvement. These are individuals who have gone through the initiation of becoming a gang member, pledge their commitment to the gang, frequently engage in illicit activities, and fully adopt the gang's language, symbols, and rituals. I

include all three gang member types in the sample population for this study. At the most basic level, "Youth who dress like, imitate, and hang out with gang members may be putting themselves in just as much risk as jumped-in gang members. Simply put, a rival gang member is not going to stop and ask if their perceived rival is a wannabe or if he is the real deal. He will simply act or react, and the end result could be injury or death" (Santa Cruz County BASTA flier, 2018). One of the limitations of collecting Twitter data is distinguishing between the three levels of gang members. However, this study does not measure the magnitude of gang involvement but seeks to detect those who identify as a gang member. All three levels give the appearance of gang membership by explicitly promoting, disseminating, and supporting gang culture, a behavior consistent with other criminal groups (Crone & Harrow, 2011; Moghaddam, 2005; Silber & Bhatt, 2007).

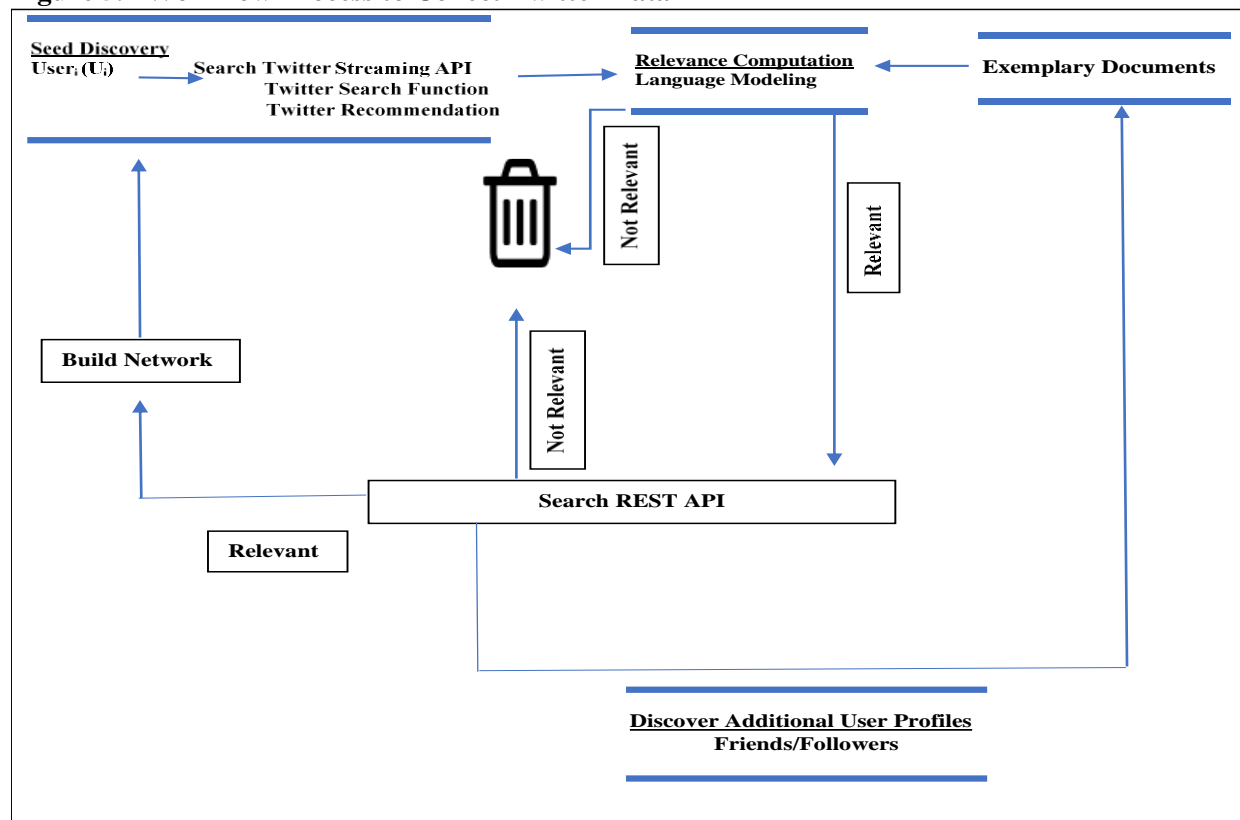
Part of the identification process also involved determining the gang in which a Twitter user belongs. The six-pointed star, for instance, is both a religious symbol used by the Jewish faith and a universal identifier of the Folk Nation, necessitating a manual inspection of profiles to ascertain the context of these symbols. Emojis are another symbol that can have multiple applications. The handicap or grape emojis can have one meaning for non-gang members but are also used by the Crips and Grape Street Crips, respectively. For this reason, I avoid the inclusion of false-positive profiles by focusing on at least two validation criteria.

3. Search REST API – After validating profiles in the second stage, I searched the Twitter REST API to determine the location of gang members and to discover other gang member accounts. For all Twitter accounts inspected, I manually identified their location. In cases where multiple locations were discovered, I coded them as primary and secondary. Additionally, I extracted other gang member accounts through retweets, user mentions, and the

list of followers. My data selection process uses an exponential non-discriminative snowball sample where referrals are randomly drawn from initial seeds and their *followers*. I considered the list of *followers* as opposed to the list a user is *following* because this signals an intent to subscribe or receive notifications from a specific Twitter user. Since the *followed* can choose to block a *follower*, allowing an account to follow you is an implicit acceptance of that connection. Finally, after discovering additional profiles from the Twitter REST API, I validated these accounts using the same criteria in stage two of this workflow process. I continued this as an iterative process up to 200 followers or until the discovery of *follower* profiles were exhausted. Additionally, I discarded all non-relevant profiles and added relevant profiles to the dataset.

4. Build Network – I used the relevant profiles discovered from the workflow process to construct an edgelist where the vertices, or nodes, represent Twitter users and an edge indicates a tie between vertices (See Piquette, Smith & Papachristos (2014) for a discussion on the benefits of SNA to gang studies). The network I use is an undirected graph that assumes reciprocity between gang members. In order to conceal the identity of Twitter users, I designated each node with a numerical value. I collected the data for this study between June 1 to June 30, 2019. I analyzed the network data using an exponential random graph model (ERGM). Similar to regression analysis, ERGMs examine the influence of an independent variable on a dependent variable. However, whereas statistical regression assumes independence between nodes, ERGMs account for their interrelatedness. It is the dependence between nodes that forms the structural foundation of a network and the point of interest for an ERG model. The ERGM used in this study tests the location homophily of gang member connections or the extent to which gang member connections are localized. Figure 5.1 illustrates my workflow process. The same process I present here can be used to identify gang members on Facebook and Instagram.

Figure 5.1 Workflow Process to Collect Twitter Data



5.5 Data Collection Results

The workflow process I use resulted in the discovery of 1,636 connections between 726 gang and cartel members in 135 cities (18 international), 35 U.S. states, and 13 countries (including the United States). I include cartels in the sample population for two reasons. First, cartels feature prominently in the structure of the gang network (DEA, 2018; NGIC, 2011, 2013, 2015). Second, these connections were made as part of the discovery process. Connections between gang members and cartels further challenge the location-based gang consensus by highlighting geospatially diverse connections. The average activity for Twitter users in this dataset includes 4.22 years and 12,220 tweets, with an average of 38,492 followers. Compared to the median, the years of activity is close to the mean at 4 years, but the number of Tweets and followers are 2,250 and 355, respectively. This suggests that there are some Twitter accounts in

the dataset that have a significantly higher number of tweets and followers. For example, the discovery process revealed a few celebrities and high-profile individuals with gang ties. Whereas the median provides a better descriptive indicator to this study, the mean provides a snapshot of gang content exposure to Twitter followers. Table 5.4 provides information on Twitter profile data discovered during the workflow process.

Table 5.4 Twitter Profile Descriptions

Average Twitter Profiles Following	901
Median Twitter Profiles Following	453.5
Average Twitter Followers	38,492
Median Twitter Followers	355
Average Year Joined	2013
Median Year Joined	2013
Average Years of Activity	4.22
Median Years of Activity	4
Average Tweets	12,220
Median Tweets	2,250
Average Likes	2,221
Median Likes	267
Gang Members	726
Connections	1636
Gang Total	42
Established Gangs	38
"New" Gangs	5
Cartels	6
Location	
City	135
US	117
Average Population	329,969
Median Population	111,398
International	18
Average Population	1,904,832
Median Population	539,624
State	48
US	35
International	13
Country	13

In the sample population, 27.76% homophily ties (gang members in the same city shared a connection) were detected compared to 72.24% heterophily ties (gang members in different cities shared a connection). The edgelist to calculate the distribution frequency of city ties is used in model 1 to determine the significance of location by city on gang member connections.

Homophily ties detected for gang members in the same state was 35.58% compared to 64.42% heterophily ties. The edgelist to calculate the distribution frequency of state ties is used in model 2 to determine the significance of location by state on gang member connections.

Finally, the frequency distribution of gang member connections of the same set was 64.3% compared to 35.7% heterophily ties to different sets. When considering the frequency distribution of gangs from the same primary gang, however, the homophily and heterophily ties change significantly to 82.04% and 17.96%, respectively. Although some gangs claim the same primary gang affiliation, there is a higher degree of rivalry when compared to the gang set. The Rollin' 60s Neighborhood Crips and Eight Tray Gangster Crips, for example, both claim Crip affiliation. However, a dispute in 1979 turned each set into rivals. As the division widened, other Crip sets either joined the Neighborhood Crips (Rollin' Os) or Gangster Crips ("Deuces and Trays," n.d.). The two sets are also referred to as the Deuces (2x) and Trays (3x), respectively. Therefore, I use gang sets as nodal attributes rather than primary gangs in this study. The high percentage of gang members connecting to other members of the same gang indicates that gang homophily is a strong predictor for observing shared connections between gang members.

Moreover, increasing connections between members of the same set to members of the same primary gang reinforces the importance of understanding gang relationships at the macro-level, an under-researched area of gang studies and the premise of Chapter 4. Gang sets appear fragmented in the overall network structure but appear to share more connections when gangs are connecting with members of the same alliance. For example, when looking at the city-level connections of the Gangster Disciples, they have 86 heterogeneous ties. As a member of the Folk Nation, several of these ties include members within their gang alliance. When consolidating the Gangster Disciples and other sets into their primary gang, the Folk Nation, these ties represent

221 homogenous connections in the sample population. Table 5.5 shows the frequency distribution of homophily and heterophily ties between gang members by city, state, and gang affiliation.

**Table 5.5 Frequency Distribution of Gang Member Connections
(Location & Gang Affiliation)**

	Frequency of Homophily Ties	Frequency of Heterophily Ties
City	27.76%	72.24%
State	35.58%	64.42%
Gang Set	64.30%	35.70%
Gang Primary	82.04%	17.96%

The distribution of gangs is not isolated to highly populated urban areas. There is an even split of mid-density (population of 100,000-999,999) and small-density (population 1,000-99,000) cities of 44.44% with a few gang members discovered in high-density (population of 1-3 million) and minuscule-density (population < 1,000) cities. Table 5.6 shows the frequency distribution of gang members by city size measured in population density.

**Table 5.6 Frequency Distribution of Gang Members Across City Size
(Measured by Population Density)**

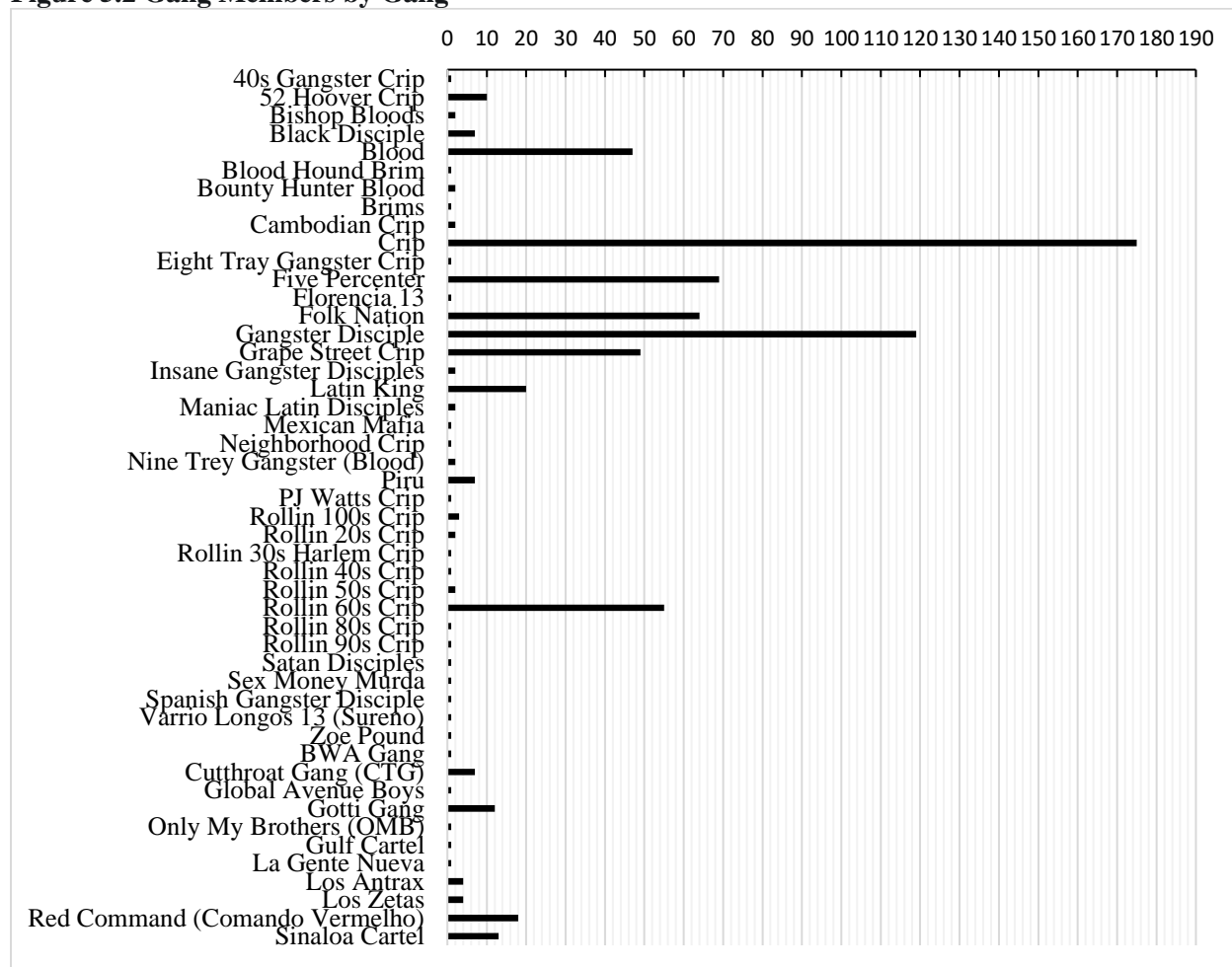
	City Population
High-Density (1-3 million)	5.98%
Mid-Density (100,000 - 999,999)	44.44%
Small-Density (1,000-99,999)	44.44%
Minuscule-Density (< 1,000)	1.71%

There are forty-two gangs and six cartels represented in the dataset. Five of the forty-two gangs discovered are considered "new" gangs. The Gotti Gang, for example, was recognized by the Norfolk Police Department in May 2017 (Edwards, 2017). Other "new" gangs include B.W.A. (Bread Winners Association) Gang, Cutthroat Gang (CTG), Global Avenue Boys, and Only My Brothers (OMB). The largest gang included in the dataset are the Crips with 175 members. When the different Crip sets are included, the Crips represent approximately a fourth of the total gang members in the dataset. The Crips are one of the largest domestic gangs in the United States whose rivalry with the Bloods began in the 1960s (Howell, 2015). Another gang in the dataset with high representation is the Gangster Disciples. I identified 119 Gangster Disciples, along with 64 members of the Folk Nation. Larry Hoover, a founder of the Gangster Disciples, played a role in establishing the Folk Nation, whose alliance includes several gangs. With the exception of the Latin Kings, their rival, the People Nation, is not well represented in the dataset. Other gangs noticeably missing from the dataset are Mara Salvatrucha (MS-13) and White gangs such as the Aryan Brotherhood. Neither the streaming nor the rest API generated any results for these gangs. In the case of MS-13, this could be due to language barriers. Although the Sinaloa Cartel and Red Command are included in the dataset, two groups with similar language constraints (their primary language is Spanish and Portuguese, respectively), they were discovered by their connections with gang members using the workflow process. Moreover, the Twitter search function did not generate results for MS-13 or White gangs, making detection difficult. Unlike the Bloods and Crips that have several hashtags and profiles created in their name, text searches for MS-13 and White gangs produced news headlines or discussions between users condemning these groups. Especially on the topics of "white power" and "white nationalism." It is worth mentioning that prominent figures espousing white

nationalism, such as David Duke, have significantly less followers than notable figureheads in other gangs. Calvin Broadus, Jr. (aka Snoop Dogg), an American rapper and former Rollin' 20s Crip, and Louis Farrakhan, leader of the Nation of Islam (NOI), have 17.8 million and 340,000 followers, respectively. With similar messages promoting Black nationalism, Farrakhan modeled his teachings after the Five Percenters when he re-structured NOI in 1981 and continues to have members from this gang serving in leadership positions (Allah, 2014).

With the exception of the Red Command, the discovery of cartels in this dataset are consistent with the findings in Way and Muggah (2016). They identified the leadership of the Sinaloa Cartel, who have reciprocal ties to one another, but not their followers. For example, Ovidio Guzmán López, son of Joaquin "El Chapo" Guzmán, follows nine Twitter accounts but has 89,000 followers. The accounts he follows consist of other leaders and family members in the cartel. Figure 5.2 provides a complete list of total gang members by gang represented in this dataset.

Figure 5.2 Gang Members by Gang



The geographic representation in the dataset reflects what we would expect to observe. Across the United States, gangs are concentrated in densely populated urban areas. In this dataset, there were seventy-four gang members discovered in Los Angeles, twenty-nine in Atlanta, twenty-eight in Chicago, and fifteen in Memphis. Twenty-eight gang members were discovered in Compton, a comparatively smaller city, but this is due to its proximity to Los Angeles. The city and county of Los Angeles are considered the "gang capital" of the United States (Los Angeles Police Department, 2020). In total, the highest number of gang members in this dataset, one hundred thirty-four, was discovered in the state of California. Of the gang

members in California, sixty-three are Crips, and another twenty-two belong to Crip sets. The geographic distribution of Crips in California includes twenty-four located in Compton, eighteen in Los Angeles, eight in Long Beach, and thirteen in other cities. Considering the Crips originated in the Los Angeles area, it makes sense to observe a high degree of clustering in this region. Additionally, as one of the largest gangs in America, it is not surprising to observe a high degree of distribution across the country and internationally. In total, Crip members were discovered in thirty-five U.S. and international cities.

Another gang more heavily concentrated in Los Angeles is the Grape Street Crips. The Grape Street Crips originated in the Jordan Down Housing Projects in Watts. Thirty-two out of the thirty-seven Grape Street Crip members identified were from Los Angeles. It is not uncommon for people to migrate, and another three were discovered in Memphis and two in Atlanta. Similarly, the Gotti Gang and Five Percenters originated from New Jersey and New York, respectively. This is reflected in the dataset with seven of the eight Gotti Gang members located in New Jersey, and fourteen Five Percenters detected in New York.

One gang that does not resemble the same pattern of having one geographic area that is highly clustered, especially where they originated, is the Gangster Disciples. As one of the original members of the Folk Nation, the Gangster Disciples originated in Chicago. This area was the focus of Balasuriya, Wijerante, Doran, and Sheth (2016) and Wijerante, Doran, Sheth, and Dustin (2015). However, the results of this study revealed that Gangster Disciples are clustered, but across a greater distribution than a single metropole. Where seven were discovered in Illinois (six of those located in Chicago), there were sixteen discovered in Georgia, sixteen in South Carolina, eight in Tennessee, and eight in Alabama. Overall, Gangster Disciples were discovered in forty-two cities across twenty-three states, and while the distribution of Gangster

Disciples is as expansive as the Crips, they have fewer international ties. The results of the workflow process revealed that the Gangster Disciples have a tie to Haiti, and the Crips have ties to South Africa, Peru, Indonesia, and the Cayman Islands. Figures 5.3 and 5.4 show the geographic concentration and distribution of select gangs by city and state, respectively. See also the Appendix for a visual map on the geographic concentration and distribution of select gangs. Figures 5.5, 5.6, and 5.7 show the total geographic concentration and distribution of gangs by city, state, and country, respectively.

Figure 5.3 Location of Select Gangs by City

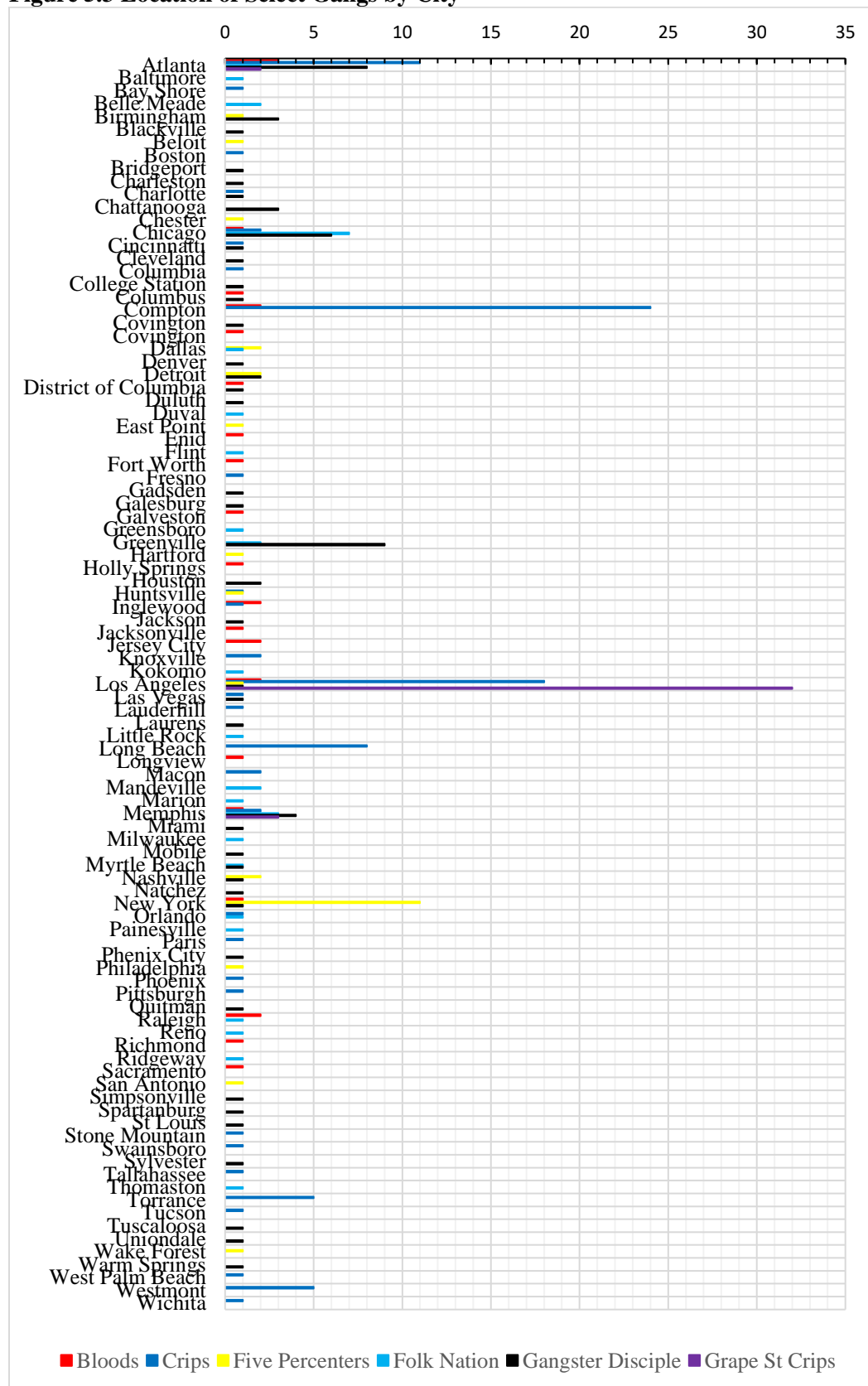


Figure 5.4 Location of Select Gangs by State

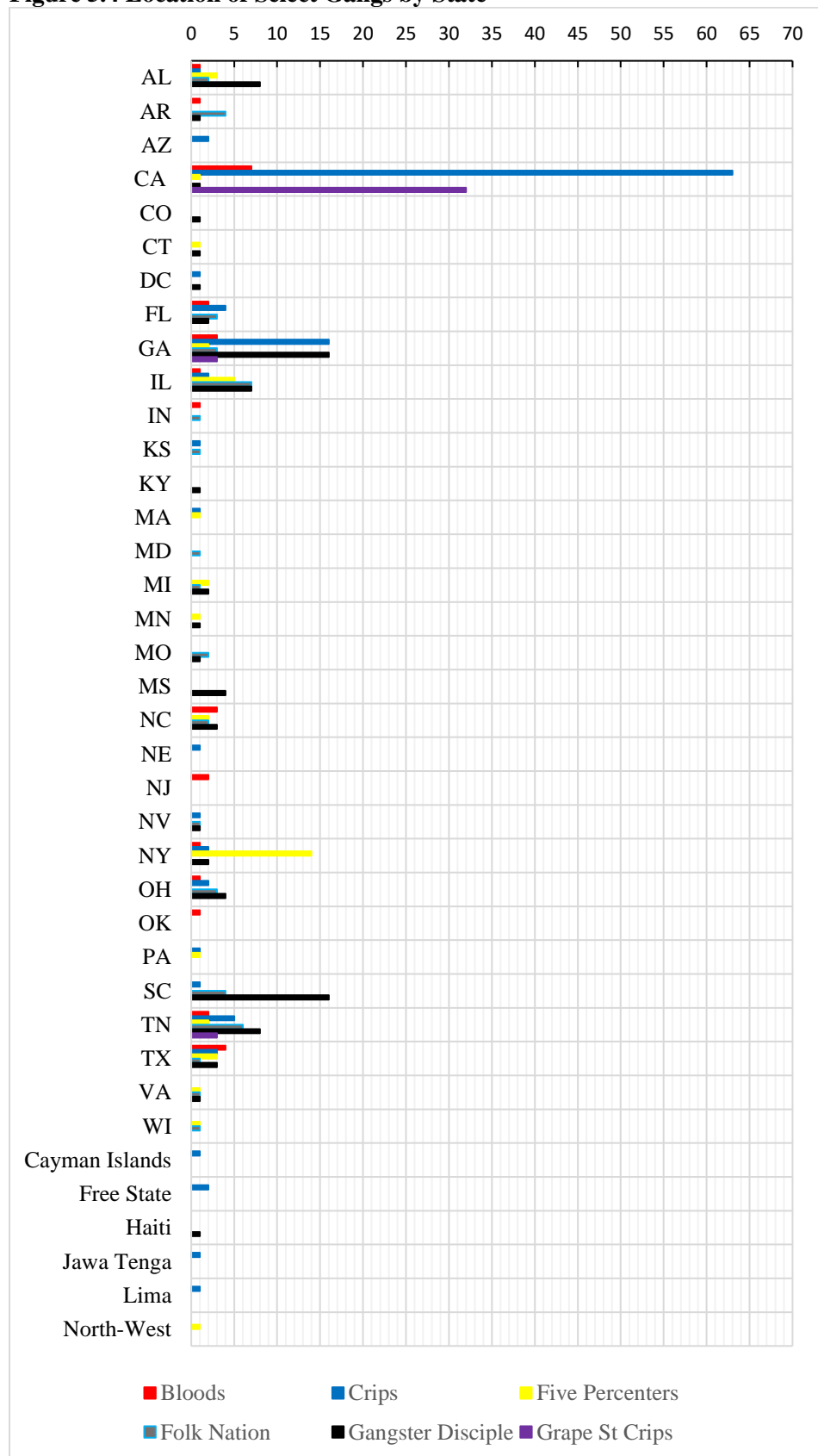


Figure 5.5 Distribution of Gang Members by City

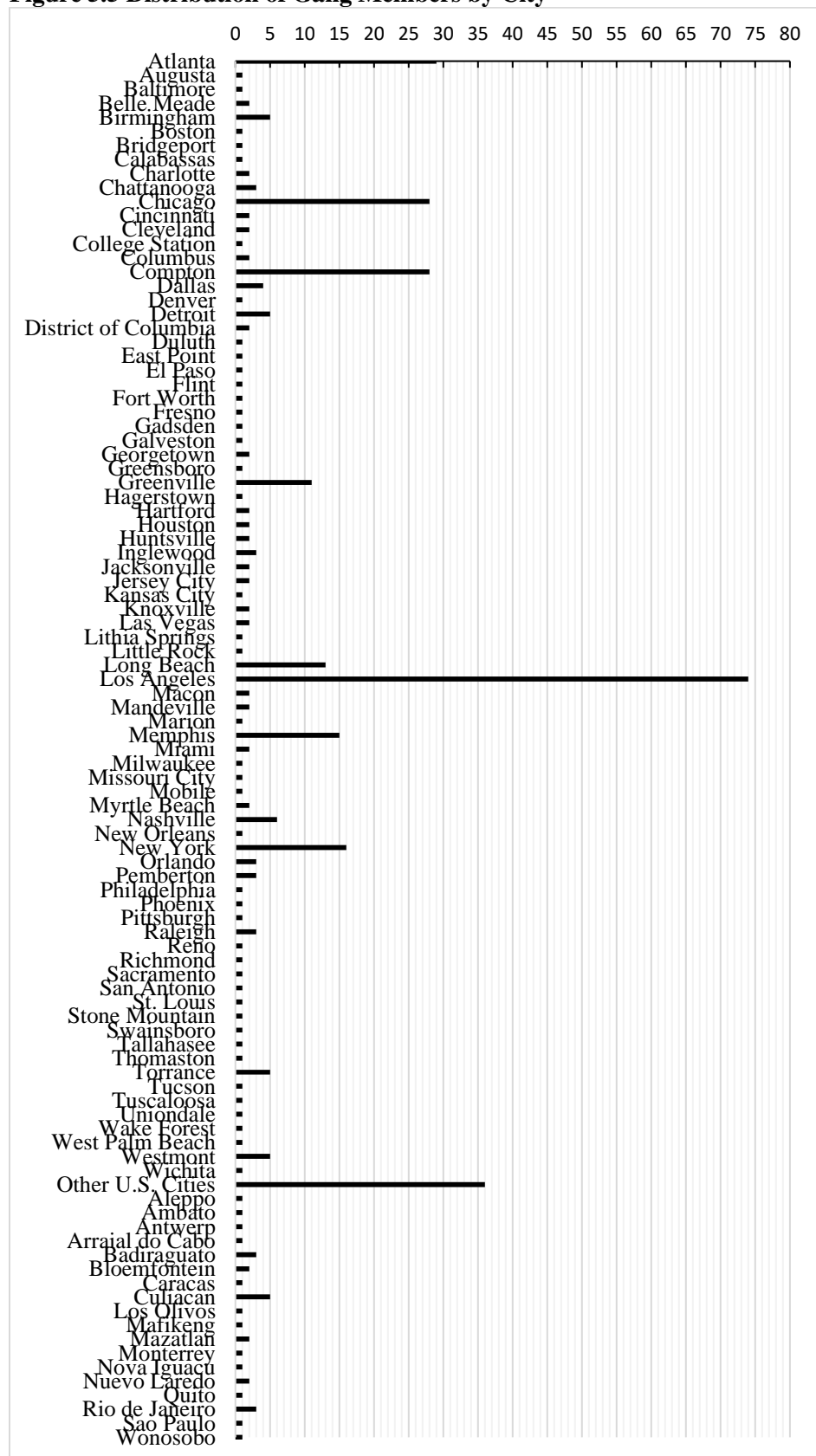


Figure 5.6 Distribution of Gang Members by State

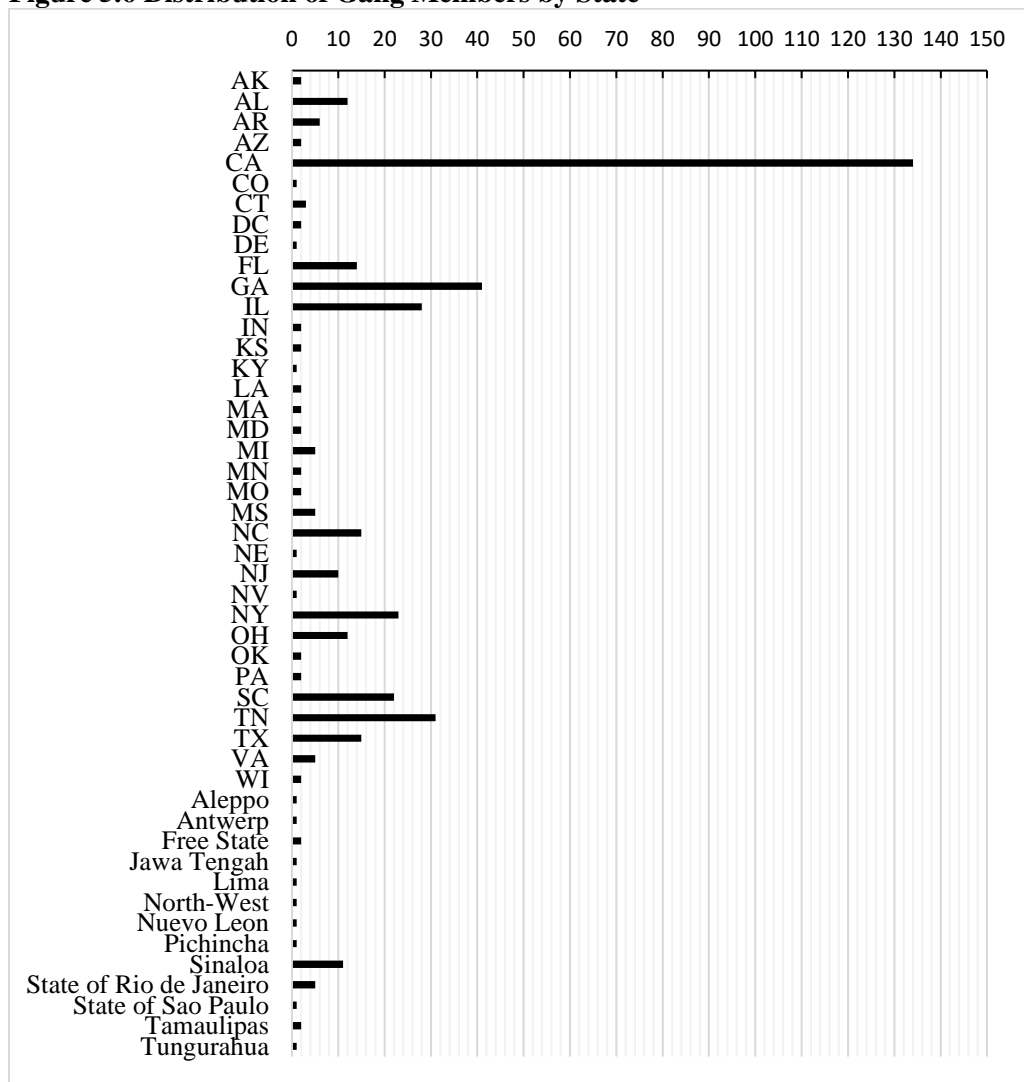
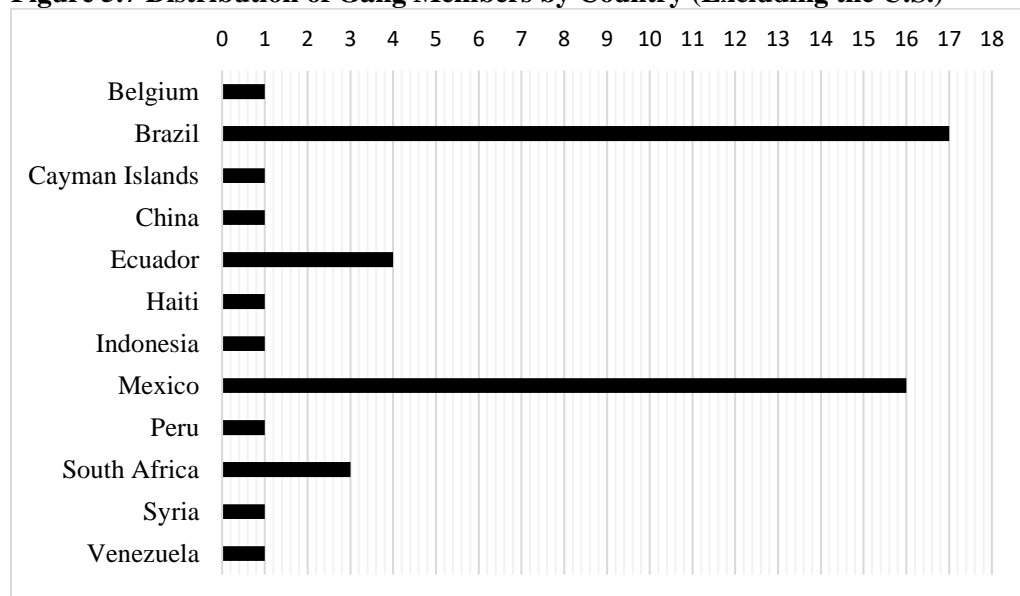


Figure 5.7 Distribution of Gang Members by Country (Excluding the U.S.)

5.6 Exponential Random Graph Model (ERGM)

Exponential Random Graph Models analyze the sub-structures of social networks to determine the patterns of relationships between vertices. Garry Robins and Dean Lusher (2012) provide the following definition of ERGMs:

Exponential random graph models (ERGMs) are statistical models for network structure, permitting inferences about how network ties are patterned. Put another way, ERGMs are tie-based models for understanding how and why social network ties arise. This focus aligns ERGMs with a principal goal of much empirical social network research, which is to understand a given “observed” network structure (i.e., a network on which a researcher has collected data), and so to obtain insight into the underlying processes that create and sustain the network-based social system (p. 9).

A more formal explanation of ERGMs can be found in David Hunter, Mark Handcock, Carter Butts, Steven Goodreau, and Martina Morris (2009). ERGMs function much the same way as linear regression models with one distinct feature. They account for path dependencies in network structures. This can be accomplished by measuring the impact of nodal attributes. For further explanation and a comparison between nodal attribute models and evolutionary models, see Riitta Toivonen et al. (2009). In addition to node attributes, edge attributes (also referred to as

relational attribute effects) can be used to determine the probability distribution of a graph (See Martina Morris, Mark Handcock, and David Hunter (2008) for a more detailed explanation). M. E. J. Newman (2015) provides an example of the underlying ERGM application.

Many of the networks we observe in the real world exist in only one instantiation, one example that we can study. There's only one Internet, for instance, and only one World Wide Web. But is the precise structure of such a network – the precise pattern of connections in the Internet, say – the only possible structure the network could have? Common sense suggests that it is not. For a start, the Internet evolves in time, so we see different structures if we look at different times and all of them are by definition plausible structures for the network. More importantly, it's clear that, had circumstances been slightly different, the Internet could easily have evolved to have a different topology, but one that in practical terms would probably have worked about as well as the present one... That is, all reasonable choices for the structure of the Internet have some basic features in common, even if they differ in similar details. Similar considerations also apply to other types of networks, including social networks, biological networks, and information networks (p. 565).

For this study, I use an ERGM with an undirected network graph to test the location homophily, or heterophily, of shared gang member connections. By using the ERG model, my research aims to understand the extent to which location impacts gang member connections. Although there is a degeneracy problem in ERGMs, this relates to issues of transitivity in social networks.

Transitivity analyzes the likelihood that a friend of a friend is your friend. For this reason, triadic closures, or network clustering, is not relevant to this study, but should be considered in future research. ERGs that model homophily, on the other hand, do not suffer from the same limitation. See Alessandro Rinaldo, Stephen Feinberg, and Yi Zhou (2009) for a detailed explanation of ERGM degeneracy.

5.6.1 ERGM Results

For each calculation, there is a null model showing the probability of a connection forming between gang members without considering attributes. The edgelist used in the city attribute model, for example, shows a 1.12% probability of a connection forming between two nodes. This means that, in the absence of any identifiable criteria, there is a low probability of

observing a connection between two individuals in the network. The edgelist models used in the state and gang affiliation nodal attribute models and the edge attribute model also show a low probability of observing connections between nodes when only edges are considered.

We can observe the relevance of the attributes by comparing them to the null models. The results of this study support the proximity principle to some degree. That is to say, individuals concentrated in a geographic space are more likely to develop interpersonal relationships. When considering nodal attributes, location has an impact on the formation of gang connections. In the first model, city attributes are statistically significant at the 95% confidence interval ($p < 0.0139$). We can reject the null hypothesis and state that gang members from the same city are more likely to form a connection. Model 1 includes 634 edges between 335 vertices. By taking the log-odds of the coefficient, we can predict that the probability of a connection forming between gang members from the same city in this model is 59.12%.⁸

When considering state location, the statistical significance of connections forming between gang members is higher. Model 2, which includes 771 edges connecting 385 vertices, measures state attributes and is statistically significant at the 99% confidence interval ($p < 0.0045$) with a probability of 57.25% that a connection between gang members will form. Although I do not include a national model in this study, it can be inferred that connections based on country would be highly statistically significant at the 99.99% confidence interval ($p < 0.001$). Especially considering that out of the 726 vertices, 672 are from the United States. Moreover, the results suggest that a more diffuse population across a broader geographic space reduces the likelihood of interaction. Defining location on a larger scale contributes to a lower probability of connections forming between gang members when comparing city (59.12%) and

⁸ The `plogis` function in R-Studio generates a log-odds likelihood ranging from 0-1.

state attributes (57.25%). The third model testing individual effects is gang affiliation homophily with 1,538 edges connecting 717 vertices. Gang affiliation is highly statistically significant at the 99.99% confidence interval ($p < 0.0002$), and accounts for a 56.78% probability that connections between gang members form based on similarities in gang affiliation. For Model 3, it is important to mention that the results are based on gang sets rather than their primary affiliation. The Rollin' 60s Neighborhood Crips, for example, are treated as separate entities from the Crips. This is an important distinction to make when considering the probability of a connection forming. If gangs were consolidated into their primary gang affiliation, then it is likely that the probability of a connection forming would be greater than 56.78%.

Unlike the three nodal attribute models, Model 4 uses an edge attribute to test the distance between vertices (measured in miles). The miles between gang members tested in Model 4 has no significant impact on the formation of a connection. Although the distance in miles is not a good predictor of observing gang member connections, we can still make inferences about the location-based perspective. If gangs are localized, we would expect to see higher clustering in terms of distance. The miles between nodes might be too scattered to make a statistical determination on the impact of distance and the formation of gang member connections, but this is not necessarily a reflection of proximity. Gang members that are 2, 3, 5, or 10 miles apart are still geographically close. However, the dataset for Model 4 (the same dataset used in Model 1) shows that the distance between nodes is decentralized rather than clustered. The average distance between vertices is 963.24 miles, with a range of 0-12,863 miles. We might not be able to reject the null hypothesis for Model 4, but the distance between nodes challenges the idea that gangs are localized. Rather than clustering, the mileage between gang members suggests they occupy a more diffuse geographic space. Table 5.7 provides the ERGM

results for the individual effects of attribute homophily (city, state, gang affiliation, and distance (miles)) on gang member connections (See the Appendix for figures illustrating the data used in the city and state attribute models).

Table 5.7 ERGM Results: Individual Effects Model of Attribute Homophily

	Model 1		Model 2		Model 3		Model 4	
	Null 1	City Nodal Attribute Model	Null 2	State Nodal Attribute Model	Null 3	Gang Nodal Attribute Model	Null 4	City Edge Attribute Model
Vertices	335	335	385	385	717	717	335	335
Edges	634	634	771	771	1538	1538	634	634
Estimate Std.	-4.4848	0.3691	-4.574	0.2921	-5.13	0.4978	-4.4848	22.5093
Error	0.0403	0.15	0.0366	0.1027	0.0259	0.0672	0.0403	210.3468
p-Value	<1e-04***	0.0139*	<1e-04***	0.0044**	<1e-04***	0.0002***	<1e-04***	0.915
Probability	0.0112	0.5912	0.0102	0.5725	0.0058	0.5678	0.0112	1

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '+' 0.1 '.' 1

The Twitter data collected for this research is best designed for testing the individual effects of attributes (e.g., location homophily) on gang member connections.⁹ As described in the methodology section, the sample population is composed of Twitter users that I validated as a gang member and the gang with which they belong. In some cases, the primary gang was identified, and in others, the gang set was identified. It is possible that members identified in a primary gang could belong to a set of that gang that was not made explicit during the discovery process. Considering the joint effects between location and gang membership changes the model

⁹ This study's data limitations are why I do not consider other network conditions (e.g., transitivity or connections with other gang members that are friends with my friend) or attributes in explaining gang member connections. Further analysis of gang member connections is possible if the data collection process supports the initial research inquiry and should be explored in subsequent studies.

by capturing the conditional effect of independent variables and their impact on the dependent variable. Nonetheless, it is worth examining since both attributes are indicative of real-world characteristics associated with gang members. That is to say, gang members in the sample population both live in a location (e.g., city, state, etc.) *and* belong to a gang. Table 5.8 shows the ERGM results for joint effects of nodal attribute homophily (e.g., city and primary gang, city and gang set, state and primary gang, state and gang set) on gang member connections.

The joint effects of nodal attributes indicate that the resolution used to study gang member connections matter. When observing gang member connections by city location and gang set, cities are approaching statistical significance at the 90% confidence interval ($p < 0.0753$), and gang affiliation is highly statistically significant at the 99.99% confidence interval ($p < 0.0001$). City and primary gang affiliation, on the other hand, are both statistically significant. City location and gang set affiliation are statistically significant at the 95% confidence interval ($p < 0.0375$ and $p < 0.0142$). When observing the joint effects by state location and gang set, states are statistically significant at the 95% confidence interval ($p < 0.0103$), while gang set affiliation is not statistically significant. State location and primary gang affiliation, on the other hand, show that states remain statistically significant at the 95% confidence interval ($p < 0.0150$) and primary gang affiliation is approaching statistical significance at the 90% confidence interval ($p < 0.0661$).

The results of the joint effects model suggest that city location is not conditioned by gang set affiliation. When compared to the individual effects model that considers the same number of edges and vertices, the statistical significance of city location decreases while the statistical significance of gang set affiliation remains constant. Conversely, comparing the joint effects of state location and gang set affiliation to the individual effects model suggests that belonging to

the same gang is not conditioned by location when observing gang member connections. This is, however, inconclusive because the number of observations for gang set affiliation is significantly less in the joint effects model (771 edges connecting 385 vertices) than the individual effects model (1,538 edges connecting 717 vertices). Future research could help clarify the relationship between the independent variables.

Table 5.8 ERGM Results: Joint Effects Model of Nodal Attributes

	City & Primary Gang		City & Gang Set		State & Primary Gang		State & Gang Set	
	City	Primary Gang	City	Gang Set	State	Primary Gang	State	Gang Set
Vertices	335	335	335	335	385	385	385	385
Edges	634	634	634	634	771	771	771	771
Estimate	0.3155	0.2261	0.2712	0.4105	0.2548	0.1571	0.2681	0.1339
Std. Error	0.1517	0.0922	0.1525	0.1047	0.1048	0.0855	0.1045	0.1044
p-Value	0.0375*	0.0142*	0.0753+	<1e-04***	0.0150*	0.0661+	0.0103*	0.1998
Probability	0.5782	0.5563	0.5674	0.6012	0.5634	0.5392	0.5666	0.5334

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '+' 0.1 '.' 1

Whereas Table 5.7 and 5.8 illustrate the interaction effects between network attributes and gang member connections, it is also important to consider the main effects. The main effects of nodal attributes show the subset of independent variables (i.e., each city, state, and gang affiliation) and their impact on the dependent variable (i.e., gang member connections). Here you can see the contribution of individual city, state, and gang affiliation attributes driving each model's results. For example, in the individual effects model, the results are determined by several cities, states, or gangs rather than being driven by a handful of locations or gangs in the sample population. There are twenty-two cities, twenty-one states, and nine gang sets that are statistically significant in each of the individual effects models, despite some locations (e.g., Los

Angeles, Compton, Chicago, California, Georgia, etc.) and gangs (e.g., Crips, Gangster Disciples, etc.) being disproportionately represented. When looking at the main effects of the joint effects model between location and gang affiliation, there are nine cities and three gang sets of statistical significance that are all positively correlated with observing shared connections between gang members. The number of statistically significant cities and gangs increase to fifty-six and ten, respectively, when consolidating gang sets into their primary gang. Those cities that are statistically significant remain positively correlated with gang member connections while primary gangs are negatively correlated. The main effects of state variables and gang set affiliation shows that there are eighteen states and twenty gang sets that are statistically significant. States are positively correlated with gang member connections, while gang sets are negatively correlated. The main effects between states and primary gangs show that twenty states and ten primary gangs are statistically significant. States remain positively correlated with gang member connections, while the correlation of primary gangs and gang member connections are mixed. Some gangs such as the Bishop Bloods, Cambodia Crips, and Gangster Disciples are positively correlated, while others such as the Gotti Gang and Bounty Hunter Bloods are negatively correlated. The statistical significance of individual nodal attributes provides areas for future research in terms of location and gang affiliation. I discuss this point further in the next section. See the Appendix for a full review of the main effects of nodal attributes in the individual and joint effects homophily models.

5.7 Discussion

The results of this study demonstrate consistency with the proximity principle. That is, location homophily plays a role in the formation of gang member connections. It is reasonable to expect that people living close together are more likely to have interpersonal relationships. Social interaction at school, work, and worship, or in shared residential spaces increase the likelihood of

localized connections forming. Within these public spaces exist, gangs, making it unsurprising that city and state attributes help explain gang member connections to some extent. However, location homophily is not as strong a predictor of gang member interconnectivity as one would expect to observe given the location-based consensus in gang studies. Depending on the unit of analysis or how location is defined (e.g., public housing complex, street, city, county, state, etc.), this research shows that the wider the geographic space, the greater the likelihood of observing a shared connection between gang members. As a result, gang member connections appear to be less localized than gang research suggests. Definitions that describe gangs as loosely organized groups of juveniles seeking to protect territory discounts their national and transnational connections. Instead, advances in communication technology and social media platforms have enabled gang members to re-spatialize how they form and maintain friendships in unbounded geographic spaces.

The findings of this study challenge the location-based perspective asserting gang localization in two important ways. First, the frequency distribution of the sample population suggests that gang affiliation is a strong indicator of gang member connectivity. Approximately sixty percent of gang members from the same set share a connection. These connections increase to eighty-two percent when gang members are consolidated into the primary gang with which that set is aligned. The increase of shared connections between gang members from 'gang set' to 'primary gang' supports the value of understanding the macro-level relationships of gangs that I presented in the previous chapter. There is a high degree of homogenous ties between gang members of the same gang or the alliance with which their gang belongs. The ERGM results support gang homophily as a strong indicator of shared gang member connections. As a singular nodal attribute, the interaction effect of gang affiliation is highly statistically significant.

However, gang members both exist in a location (e.g., city or state) *and* belong to a gang simultaneously. Although the structure of future studies should better model the interaction between these nodal attributes, the interaction effect in this study suggests that the relationship between these two variables is not reciprocal. For example, city location as a singular attribute is statistically significant, but not when conditioned by gang set affiliation. This means that the impact of city location on gang member connections is not determined by gang affiliation.

Second, the concentration of gang members in the sample population reveals that gang members are located primarily in mid- to small-density cities. If gang members were localized, we would expect to see more gang members concentrated in large-density cities since gang formation can be traced back to large urban centers such as Los Angeles, Chicago, and New York (Howell, 2015). There are nearly just as many gang members in large-density cities as there are in minuscule-density cities. Similarly, the locations represented in this study are geospatially diverse. Gang member connections are domestically and internationally more diffuse than is currently represented in gang studies. By proxy, the interconnectedness of gangs at the macro-level is spread out over a larger geographic space than is assumed by the localization of gangs. The consequence of which transposes localized security threats to the national consciousness by facilitating recruitment opportunities, disseminating gang culture, and making possible the coordination of criminal gang activity across city, state, and national borders.

In addition to challenging the location-based consensus on gangs, this study suggests further areas of research. For example, some gangs such as the Grape Street Crips appear to be more geographically concentrated than other gangs such as the Gangster Disciples and Five Percenters. Distinctions between gang typologies could help explain the geospatial distribution

of gang member connections. Whereas the Gangster Disciples and Five Percenters can be classified as ideologically-driven third-generation gangs, the Grape Street Crips are presumably a second-generation gang motivated by profits. Moreover, some gangs are easier to detect on social media than others, allowing for gang-specific studies that examine how micro-level behavioral processes influence macro-level outcomes within a specific subset of gangs. Finally, this study can be used to discover other potential research areas at the local level. The discovery of "new" gangs and their whereabouts provides an opportunity to analyze gang formation and behavior in a contemporary context. Similarly, the sample population includes several cities not typically associated with gang activity. The results of the data collection process in this study can expand on work that compares emerging gang cities to established gang cities (See Decker, Bynum, & Wiesel, 1998). Working with local law enforcement in these cities can help improve our understanding of gangs outside studies that privilege high-density cities such as Los Angeles, Chicago, and New York.

CHAPTER 6

CONCLUSION

There is little argument that criminal gang activity jeopardizes public safety in communities throughout the United States. Historically, gangs have existed in geographic spaces as localized groups. The introduction of "hard" drugs, however, was partially responsible for transforming gangs from a territorial- to a market-orientation (Coughlin & Venkatesh, 2003). While some remained 'neighborhood gangs,' others emerged as 'national gangs' with local, national, and transnational connections. Network structures as a system of connections beyond the local setting have featured prominently in the gang transformation process. By studying gang networks, we can better understand the influence gangs have on the social, political, economic, and cultural determinants of national security. Through these network structures, gangs can challenge law and order, weaken institutions, and impact the structural integrity of the state.

Social network analysis (SNA) provides an effective empirical-analytic method to examine the interconnectedness of gangs. At the macro-level, gangs are forming alliances that integrate street, prison, and outlaw motorcycle gangs (OMGs) in addition to other criminal groups like Mexican Drug Trafficking Organizations (DTOs). In some cases, these alliances transpose local gang activity onto the national security consciousness. At the micro-level, connections between individual gang members facilitate entry into "new" markets and facilitate the flow of information and resources throughout the country. Although the consensus in criminology indicates gangs are localized, the examination of micro-level network structures between gang members demonstrates the diverse geospatial distribution of gangs. Gang members are connected to other gang members in small-, medium-, and large-density cities. In some cases, these cities lack the resources and capabilities to address criminal gang activity.

The network structure of gangs also has ontological implications. There is a rigorous debate on the likelihood of a gang-terrorist nexus. Whereas the foundation of this debate considers the physical connections between gangs and terrorists, there exists a metaphysical integration of extremist ideologies into the gang construct. This "network of ideas" has reconfigured the identity of some gangs seeking to achieve political outcomes. As a result, the transformation of these gangs involves actively challenging the state. SNA can help assess the extent to which gangs resemble other criminal groups. Under what conditions should a gang be categorized as a terrorist organization? Answering this important question could potentially change the strategic and tactical responses of law enforcement as well as the agencies and resources available to address certain gangs. Further, gang members exist as social actors (Hagedorn, 2005). Despite their propensity for violence and criminal conduct, gang members often remain involved in their neighborhood or community. For this reason, gang networks are capable of influencing the social, political, economic, and cultural landscape through legitimate channels. SNA provides an analytic tool to examine the extent to which gangs undermine the efficacy of state institutions like the military and law enforcement agencies.

6.1 The Transformation of Gangs

There is a consensus that gangs in the United States are localized (Venkatesh, 2000). The underlying assertion of the location-based perspective relies on several factors that describe gangs as having young members with loose affiliations whose time in the gang is short and their mobility restricted to a narrowly defined geographic space. Early gang studies such as Frederic Thrasher (1927) established this archetypal view, which continues to be reproduced in contemporary assumptions about gangs. Local conditions undoubtedly play a role in gang formation and should not be discounted but explained as part of a larger historical context of the gang phenomenon.

James Howell (2015) points out that gangs in the northeastern region of the country emerged in 1783, while the southern region did not experience gangs until almost two centuries later in the 1970s. Between that time, the first documented gang activity in the midwestern and western regions occurred in the 1860s and 1890s, respectively. Although gang formation occurred disproportionately across regions of the United States, comparing each region reveals a pattern of similar conditions that led to gang formation. One important factor is the impact of international and intranational mass migration on regional populations. European migration to the East, the Great Migration of Southern Blacks to the West and Midwest, and migration at the southern border led to a population disequilibrium at various points in time. During the Great Migration, for example, the diffusion of Southern Blacks disproportionately impacted other parts of the country (Howell, 2015). The population in the South decreased while the West and Midwest experienced a rise in population density. Within those regions, a majority of people settled in urban areas creating city pockets of poor neighborhoods. Local politicians responded to the population increase by establishing affordable housing, which had the unintended consequence of creating concentrated disadvantage and gang consolidation. The conditions of mass migration and concentrated disadvantage contributed to social disorganization in city areas where gang norms replaced traditional forms of social control from institutions like family and school. Further, throughout U.S. history, racial tension produced frequent conflicts between white, Black, Hispanic, and Asian communities. This enmity has commonly led to gangs forming along racial lines and has been used to create gang cohesion in cases where ethnocentrism is part and parcel to the gang's identity. For example, the Crips, one of the largest African American gangs, formed in response to the civil rights movement as an offshoot of the

Black Panther Party to protect Black communities. Similarly, the Latin Kings originally formed to advocate for the Hispanic community.

Originally, gangs formed as conflict groups to protect their members and neighborhoods from predation. This included keeping drugs out of their community. After 1970, however, when large quantities of “hard” drugs such as cocaine and heroin began flooding the streets, gangs became more entrepreneurial as they saw economic opportunity in selling narcotics (Coughlin & Venkatesh, 2003). The group activity of controlling drugs as a business transformed gang motivation from territorial to market-oriented, or what John Sullivan (1997) describes as the second-generation (2-G) of gangs. As a result, gangs organized into network structures, a feature distinct to modern gangs compared to historic gangs. This is a good point to restate Phil Williams (2001) as he summarizes the benefits of a network orientation. “Criminal networks provide moving and elusive targets that operate across enemy lines, infiltrating law enforcement agencies and governments, avoiding confrontation in favor of cooption and corruption. They are resilient – although not impervious – to damage and have qualities that facilitate recuperation and regeneration” (p. 82). Network structures facilitate gang alliances, expansion, and access or control over information and resources. At the same time that gang networks function in unbounded spaces, law enforcement agencies face jurisdictional constraints. Their legal authority is often limited to a specific location. Additionally, they are restricted by bureaucratic processes that can differ between districts making the detection and apprehension of gang members more difficult. This includes the defined set of standard operating procedures that determine community engagement with gang members and how gang data is collected and shared, if at all.

6.2 A Macro-Level Structural Analysis of Gang Networks

My dissertation provides a formal analysis of the network structure of gangs. Despite the transformation of gangs since the 1970s, the interconnectedness of gangs is not well understood.

This understanding is further obscured by a lack of publicly available data and inconsistencies in data collection methods between law enforcement agencies throughout the country. Social network analysis provides an empirical-analytic tool to effectively study gang structures. At the macro-level, the establishment of national gang alliances suggests some gangs are forming criminal syndicates, exceeding the explanatory power of localized studies on the gang phenomenon. One result of my macro-level network analysis of gangs presented in Chapter 4 illustrates gang clusters. There are several primary gangs with which other gangs orbit in the network. Some of the largest gangs in the United States, like the Crips and Bloods, for example, have several affiliated sets or smaller gangs that claim allegiance. Other gangs like the People and Folk have formed "nations," which is an alliance of independent gangs that have agreed to cooperate. Similarly, outlaw motorcycle gangs (OMGs) tend to orbit the "Big Five" motorcycle clubs (MCs) that include the Hells Angels, Mongols, Pagans, Bandidos, and Sons of Silence. Instead of gang sets, several of the large MCs maintain support clubs. Except for a few connections from the Big Five MCs, however, OMGs remain loosely connected to the gang network's overall structure.

Another important finding of the macro-level analysis of gangs reveals that native gangs are more influential than immigrant gangs. That is to say, native gangs, in the context of the network structure, are better connected to other gangs (i.e., have a lot of allies), closely connected to other gangs (i.e., their alliances are cohesive), "bridge" gaps between gangs (i.e., connect other gangs), and remain connected to highly influential gangs. Network influence, or centrality, does not account for the magnitude of immigrant gangs in society (i.e., immigrant gangs are not less dangerous than native gangs) but demonstrates the relationships between gangs and shows which gangs best control the flow of information and resources in the network.

Mara Salvatrucha (MS-13), an immigrant gang, is one of the most violent in the United States. They are often politicized in public discourses that argue for stronger border security. However, their influence in the gang network is relatively low. Two of the most influential gangs, the Crips and Bloods, are native gangs. Both gangs rank among the highest across all five centrality measures (degree, closeness, betweenness, PageRank, and eigenvector) presented in this research. In some cases, politicizing immigrant gangs serves to achieve political objectives but does not address the primary source of gang formation or the outgroup pressures native gangs place on immigrant populations. Native gangs like the Crips and Bloods exploited Salvadoran migrants resettling in Los Angeles and bear some responsibility for the formation of MS-13 (Wolf, 2012).

Mexican Drug Trafficking Organizations (DTOs), or cartels, are also highly influential in the gang network. When removed, the structure of the network changes. For example, the Sinaloa Cartel contributes to the network influence of the Crips. By removing cartels from the network, ideologically motivated gangs and their allies, or what John Sullivan refers to as third-generation (3-G) gangs, appear to be more influential than market-oriented, 2-G, gangs. Similar to the Crips, MS-13 relies on cartels for their network influence. The primary allies of MS-13 include the Sinaloa, La Familia, Los Zetas, and Gulf Cartels, all of which are highly influential in the gang network. Unlike the Crips, however, MS-13 has an adversarial relationship with the Juarez, Sierra, and Tijuana Cartels, which is atypical for gangs. Additionally, as a member of La Eme, MS-13 falls under the Mexican Mafia umbrella but continues to rival gangs both within and outside this alliance. Their primary rival being Barrio 18, another Eme set.

Two immigrant gangs that demonstrate greater influence in the gang network, and are less reliant on cartels, includes Zoe Pound and La Raza. Both gangs derive their influence from

bridging gaps between rival gangs and include connections to other highly influential gangs. For example, Zoe Pound has positive ties to the Crips and Bloods and various gang sets of the Folk and People Nations. Since gangs rarely challenge them, cartels serve a similar role in the network. Cartels maintain positive relationships with most gangs, regardless of gang rivalries. As one of the largest DTOs, the Sinaloa Cartel has alliances with street, prison, and outlaw motorcycle gangs. They, too, bridge gaps between several major rivals, including the Crips and Bloods, Sureños and Norteños, and various gangs in the People and Folk Nations.

Overall, the network of native gangs tends to be more complex than immigrant gangs. The strong influence of native gangs in the network suggests that they are more likely to undermine the state's structural integrity than immigrant gangs. Immigrant gangs, on the other hand, primarily fill gaps in the network structure. These "bridges" facilitate the shortest path that brings rival gangs closer together. If removed from the network, rivals would be forced to travel longer distances or become altogether disconnected from the network. Mexican DTOs, however, serve a dual role in the gang network. Cartels are both highly influential and broker connections between gangs. This makes sense considering cartels are the primary source of narcotics entering the United States, and gangs tend to act as distributors in the criminal supply chain (Drug Enforcement Agency, 2018). Therefore, Mexican DTOs can cooperate with gangs whether or not a rivalry between them exists.

6.3 A Micro-Level Structural Analysis of Gang Networks

Although the macro-level network analysis provides valuable insight into the structural relationships between gangs, critics deride this approach in favor of localized studies arguing that gangs lack national cohesion. The second quantitative study in my dissertation, presented in Chapter 5, involves a micro-level network analysis that challenges the location-based gang consensus and reinforces the efficacy of using a macro-level methodology to improve our

understanding of gangs. The results suggest that gang affiliation is a strong indicator of connections between gang members. In other words, connections are likely to form among those that identify with the same gang. Additionally, gang member connections appear to be consistent with the proximity principle. That is, the smaller the geographic space, the higher the probability that individuals will interact. When people share public spaces, they are more likely to socialize with others in their immediate orbit. In contrast, the further individuals are from one another, the less likely they are to interact. Social media, however, has altered this calculus by re-spatializing how people form and maintain relationships. Using Twitter data, I examine location homophily by city and state. While statistically significant, location is not as strong a predictor of gang member connections as one would expect given the consensus that explains gangs as local actors. A general acceptance of fact based on an anachronistic premise limits our ability to understand gangs as they continue to evolve. Taken together, if gang members connect to other members of the same gang *and* many of those connections are geographically decentralized, then it can be inferred that some gangs possess a nationally connected network.

Moreover, the population (determined by an exponential non-discriminative snowball sample where referrals were drawn at random) represented in the dataset for this study is primarily located in small- to mid-density cities with a small percentage residing in large- and minuscule-density cities. If gangs were localized, one would expect to observe more gang members from high-density cities since the genesis of gangs can be traced to metropolitan areas like Chicago, Los Angeles, and New York. However, the population sample indicates that gang members occupy “new” geographic spaces. Instead of large urban centers, it is reasonable to assume that gangs have spread by proxy of gang member migration to small and mid-sized cities,

a fact that Howell implicitly points out when discussing the regional history and transformation of gangs.

Analyzing the structure of gang networks is one method to understanding the extent to which gangs challenge law and order, weaken institutions, and impact the structural integrity of the state, a point that Max Manwaring (2005) argues is demonstrative to measuring the threat of gangs. Network structures are the vehicle with which some gangs have transformed from localized conflict groups to criminal syndicates and, in the process, distributed local problems across a larger geographic space. In some cases, gang-related issues have been transposed nationally and internationally. In other cases, gang activity has been imported in areas where the problem exceeds the capabilities of local law enforcement. Gangs continue to exploit a criminal justice system that is, in large part, disconnected in terms of addressing gang activity. At the macro-level, gang alliances indicate structural changes that have allowed some gangs to emerge from localized control centers to resemble organized crime groups whose influence extends to state, national, and international levels. Julie Ayling (2011) concludes, “Many gangs dissolve after only short periods of time, but there are some variants that have survived over the longer term and have ultimately become more networked, technologically savvy, internationalized, less visible, more predatory and sometimes more violent. At least some of these gangs would undoubtedly fit the label ‘organized crime’... Understanding why this is happening is crucial to planning effective responses” (p. 20). The Crips, for example, formed by consolidating local gangs in the Los Angeles area. Their main rival, the Bloods, followed a similar pattern where gang consolidation was intended to counter the predatory behavior of the Crips. Both gangs have been reported in all fifty states and some countries worldwide.

Although it is often cited that gangs lack national cohesion and are united in namesake alone, some gangs maintain national and transnational connections. OMGs, for example, have regional leadership that meets on an annual, semi-annual, and monthly basis. They also have established international chapters with which they coordinate. Leadership from MS-13 has annual meetings, and prison gangs like the Mexican Mafia and Aryan Brotherhood maintain national charters and constitutions that outline rules and regulations with which members must follow. These dictums also describe the consequences of failed compliance. In fact, this is how prison gangs control street-level activity despite high-level leaders being incarcerated for lengthy sentences.

The micro-level analysis of gangs demonstrates that gangs are geospatially distributed across a larger area of the country than is considered by localized gang studies. Gang members are maintaining connections with other gang members regardless of location. From a network perspective, this means that information and resources are flowing between a diverse range of populated cities. This creates challenges for law enforcement, where authorities remain localized, and gangs have become mobile. The implications of the micro-level interconnectedness of gangs can impede gang investigations or transfer gang activity to smaller cities that lack the resources to combat gangs, both of which present challenges to law and order.

6.4 Other Applications of Structural Analysis on Gang Networks

The fact remains that both local and national gangs exist simultaneously. This is represented in the distinction that government agencies make between neighborhood and national gangs. In addition to gangs permeating into “new” geographic spaces, network structures can reshape gang identity. There is a contentious debate on the likelihood of gang-terrorist partnerships. With few empirical cases to study, Gary Wilson and John Sullivan (2007) have indicated the potential for gang-terrorist connections based on the changing conflict

environment. Using investigations conducted by the National Alliance of Gang Investigators Association [NAGIA] (2005), they conclude emergent conditions facilitate, if not incentivize, cooperation between these two seemingly divergent groups, especially when considering the global reach of 3-G gangs. In 1986, for instance, Jeff Fort, founder of El Rukn, conspired with Muammar Gaddafi and the Libyan government to carry out terrorist attacks in the United States. Cases such as this, however, have been dismissed as anecdotal (Wolf, 2012).

On the whole, critics claim that cooperation between gangs and terrorists are based on conjecture. Contrary to Wilson and Sullivan, Scott Decker and David Pyrooz (2015) conclude that divergent interests, ideological differences, and a lack of organization (decentralized leadership and a lack of control over the actions of individual gang members) undermine the potential of a gang-terrorist nexus. Moreover, they continue by pointing out, any attempt at an alliance is further exacerbated by the fact that gang members are known to law enforcement officers. When avoiding detection is an operational objective, terrorists run a higher risk of being exposed by cooperating with gangs because gangs are identifiable by tattoos, "colors," and criminal databases.

Despite the strong cases made on both sides of the debate, three oversights remain when concluding the potential for a gang-terrorist nexus. First, the term 'terrorist' is narrowly defined. After President George Bush declared the "war on terror" following the World Trade Center attack in 2001, terrorism has increasingly become synonymous with Islamic-inspired attacks. Although terrorism is politically motivated, there are a plethora of secular terrorist groups that ideologically range from left-wing to right-wing extremism. Second, the debate on a gang-terrorist nexus operationalizes 'connection' through a physical interface that includes training, guidance, or some type of material support (Byman, 2005). However, assumptions based on

direct communicate neglects the idea of homegrown terrorism where native-born citizens take up arms against their country of origin. This can take place absent the direction of a nationally recognized terrorist organization. On the topic of homegrown terrorism, former Department of Homeland Security Secretary Jeh Johnson emphasizes, “By their nature, terrorist-inspired attacks are often difficult to detect by our intelligence and law enforcement communities, could occur with little or no notice, and in general, make for a more complex homeland security challenge” (U.S. Department of Homeland Security, 2016). Self-radicalization often occurs through “soft power,” or the attractiveness of extremist ideologies, with which groups and individuals proselytize. In a sense, self-radicalized groups and individuals adopt a metaphysical attachment to an idea. Rather than a direct connection to terrorists, the crystallization of extremist norms has led to the hybridization of some gangs. “White supremacist prison gangs use race and white supremacist ideology as ways to bond members together. To this, such gangs will often add the notion of a racial “family” of sorts, with references to “our white family” or “our Aryan family,” and encouraging members to call each other brothers (and, where applicable, sisters)” (Anti-Defamation League [ADL], 2016, p. 20). Another hybrid gang, the Five Percenters, takes a similar approach but incorporates the radical teachings espoused by the Nation of Islam as part and parcel to their identity.

Third, the shrinking criminal landscape has caused gangs and terrorist groups to become functionally similar. Along the same strand of thought as the changing conflict environment posited by Wilson and Sullivan, opportunities exist for gangs and terrorists to create synergies through cooperation. Brandon Sullivan, Steven Chermak, Jeremy Wilson, and Joshua Freilich (2014) indicate that increased efforts to limit financing sources has caused terrorist groups to seek out alternative means of operational funding. Rather than relying on state sponsorship or

wealthy donors, terrorist groups have diversified their illicit activities to include credit card fraud, counterfeiting, and manufacturing narcotics. To that end, gangs provide know-how and an ally in distribution, a similar strategy utilized by cartels. Gangs, on the other hand, have increasingly become more ambitious. They can benefit from acquiring new suppliers of illicit goods and, in some cases, join forces with like-minded groups. Some gangs like MS-13, the Gangster Disciples, Black P. Stone Nation, and Black Guerilla Family, to name a few, aim to influence political outcomes, which is more consistent with the motivation of terrorist organizations than gangs.

The U.S. prison system is often considered the embodiment of gang and terrorist connections. Radicalization in prisons has been the subject of several congressional inquiries, and prisons are considered fertile ground for the incubation and exchange of radical norms (Committee on Homeland Security, 2012). Jerome Bjelopera (2015) raises two critical points on the salience of prison radicalization. First, there is empirical evidence that shows the dissemination of extremist ideologies for other terrorist subgroups in the prison setting. Second, he highlights the importance of better understanding the phenomenon of prison radicalization to mitigate potential crises in the future. Two cases that exemplify prison radicalization involve the al-Haramain Islamic Foundation (AHF), a Saudi-based charitable organization that infiltrated U.S. prisons intending to recruit inmates, and the 2005 Los Angeles bomb plot planned by Kevin Lamar James, a 76th Street Crip. He controlled *Jamiyyat Ul-Islam Is-Saheeh* (JIS) in the California prison system and used his network of followers to disseminate the JIS Protocol and plan attacks on military recruitment centers and Jewish synagogues.

Network structures have also facilitated gang connections to the state apparatus.

Will Reno (2009) refers to these structures as “fusion regimes” whereby criminal groups enrich themselves by integrating with state channels through legitimate means. At the political level, elected officials set agendas and make decisions to benefit their constituents' interests. The primary objective for law enforcement and the military is public safety and national security, respectively. These three critical institutions, however, have been exploited by gangs. From Tammany Hall in New York to Richard Daley in Chicago, gangs have historically been used to serve political agendas, influence political outcomes, and, by proxy, provide gang influence and legitimacy (Bernstein & Isackson, 2011). Gangs have also infiltrated law enforcement agencies. The Rampart scandal, for example, involved widespread corruption of the Los Angeles Police Department in the late 1990s. Investigations into this corruption revealed that several officers assigned to the anti-gang task force were gang members themselves (Berlin et al., 2007). More generally, gang members gain employment in correctional facilities to support their gang and assist members who are incarcerated. This includes gaining intelligence on correctional officers, supporting recruitment efforts, and controlling contraband entry into the prison. Gangs in the military are another example of the fusion regime discussed by Reno. According to the Federal Bureau of Investigations, 1-2% of the U.S. military is composed of gang members (National Gang Intelligence Center, 2011). Gustav Eyley (2009) explains that the presence of gangs in the military is disruptive and weakens the institution's efficacy. Upon returning home, it has been confirmed that military-connected gang members transfer training to their gang. In situations where this has occurred, gangs have overwhelmed law enforcement officials and jeopardized public safety.

6.5 Conclusion

In short, there is little argument that gangs in the United States are violent and dangerous. The extent to which this violence falls under the jurisdiction of local law enforcement is well-

established. However, while some gang researchers choose to focus on a location-based approach to study gangs, they limit our understanding of gangs to a narrowly defined geographic space. Local conditions are important insofar as they provide context on the genesis of some gangs but fail to address the transformation of other gangs that expand beyond the 'neighborhood.' One driver behind this transformation is the cultivation of network structures to facilitate criminal activity. John Hagedorn (2005) describes gangs as 'social actors' with which, "Many are deeply involved with politics, real estate, religion, and community organizations and cannot be easily destroyed by suppression or repression of the drug economy" (p. 163). At the macro-level, gang alliances provide better control over information and resource flows as some gangs have transformed into criminal enterprises. At the micro-level, gang members maintain geospatially diverse connections spreading gangs to non-traditional cities across the country. Overall, the complex web of gang interconnectedness in social and institutional spaces continues to challenge law and order, weaken institutions, and negatively impact the structural integrity of the country and other nation-states.

REFERENCES

- Abadinsky, H. (2010). *Organized crime* (9th ed). Belmont, CA: Wadsworth.
- Abbate, J. (1999). *Inventing the internet*. Cambridge, MA: MIT Press.
- Abbott, A. (1999). *Department and discipline: Chicago sociology at one hundred*. Chicago, IL: University of Chicago Press.
- Adams, J. J., & Pizarro, J. M. (2009). MS-13: A gang profile. *Journal of Gang Research*, 16(4), 1-12.
- Adamson, C. (1998). Tribute, turf, honor and the American street gang: Patterns of continuity and change since 1820. *Theoretical Criminology*, 2(1), 57-84.
- Adelstein, J. (2010). The last Yakuza. *World Policy Journal*, 27(2), 63-71.
- Agarwal, S., & Sureka, A. (2015). Uncovering hidden communities of extremist micro-bloggers: A case study of jihadist groups on Tumblr. Retrieved from <https://pdfs.semanticscholar.org/44ca/83bb127b5d2d5e7d5dbe4c3ed0945b92fb5b.pdf>.
- Agarwal, S., & Sureka, A. (2016). Spider and the flies: Focused crawling on Tumblr to detect hate promoting communities. Retrieved from <https://arxiv.org/pdf/1603.09164.pdf>.
- Aldridge, J., Medina, J., & Ralphs, R. (2012). Counting gangs: Conceptual and validity problems with the Eurogang definition. In F. Esbensen & C. L. Maxson (Eds.), *Youth gangs in international perspective: Results from the Eurogang program of research* (pp. 35-51), New York, NY: Springer.
- Allah, W. (2014). Inextricably linked: The Nation of Islam and the Five Percenters. *The Final Call*. Retrieved from http://www.finalcall.com/artman/publish/National_News_2/article_101632.shtml.
- Alonso, A. (2010). Out of the void: Street gangs in black Los Angeles. In D. Hunt & A-C. Ramón (Eds.), *Black Los Angeles: American dreams and racial realities* (pp. 140-162). New York, NY: New York University Press.
- American Academy of Child & Adolescent Psychiatry. (2016, Sept.). *Gangs and children*. Retrieved from https://www.aacap.org/aacap/families_and_youth/facts_for_families/fff-guide/Children-and-Gangs-098.aspx.
- Anbinder, T. (2001). *Five Points*. New York, NY: Free Press.
- Anderson, E. (1999). *Code of the streets: Decency, violence, and the moral life of the inner city*. New York, NY: Norton.

- Andrews, P. (2013). *“Ain’t no spook God”*: Religiosity in the Nation of Gods and Earths (Unpublished master’s thesis). Memorial University Newfoundland, St. John’s, Newfoundland.
- Anti-Defamation League. (2009). *The Aryan Circle: Crime in the name of hate*. Retrieved from <https://www.adl.org/sites/default/files/documents/assets/pdf/combating-hate/Aryan-Circle-Report.pdf>.
- Anti-Defamation league. (2016). *White supremacist prison gangs in the United States: A preliminary inventory*. Retrieved from https://www.adl.org/sites/default/files/documents/assets/pdf/combating-hate/CR_4499_WhiteSupremacist-Report_web_vff.pdf.
- Anti-Defamation League. (2020). *Peckerwood*. Retrieved from <https://www.adl.org/education/references/hate-symbols/peckerwood>.
- Arquilla, J., & Ronfeldt, D. (2001). *Networks and netwars: The future of terror, crime, and militancy*. Rand Corporation.
- Asal, V. H., Rethemeyer, R. K., & Anderson, I. (2011). Big Allied and Dangerous (BAAD) database 1 – Lethality data, 1998-2005. Retrieved from <https://dataverse.harvard.edu/dataset.xhtml?persistentId=hdl%3A1902.1/16062>.
- Ayling, J. (2011). Gang change and evolutionary theory. *Crime, Law and Social Change*, 56(1), 1-26.
- Balasuriya, L., Wijerante, S., Doran, D., & Sheth, A. (2016). Finding street gang members on Twitter. *Proceedings of the 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining* (pp. 685-692). San Francisco, CA: IEEE Press.
- Ball, R. A., & Curry, G. D. (1995). The logic of definition in criminology: Purposes and methods for defining gangs. *Criminology*, 33(2), 225-245.
- Berlin, D., Brizius, E., Bump, M., Garshelis, D., Khonsari, N., Pinheiro, E... Smith, E. (2007). Between the border and the street: A comparative look at gang reduction policies and migration in the United States and Guatemala. Retrieved from https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1003&context=hri_papers.
- Bernburg, J. G., Krohn, M. D., & Rivera, C. J. (2006). Official labeling, criminal embeddedness, and subsequent delinquency: A longitudinal test of labeling theory. *Journal of Research in Crime and Delinquency*, 43(1), 67-88.
- Bernstein, D., & Isackson, N. (2011 December). Gangs and Politicians in Chicago: An Unholy Alliance. *Chicagomag*. Retrieved from <https://chicagomag.com>.
- Bjerregard, B. (2015). Legislative approaches to addressing gangs and gang-related crime. In S.

- H. Decker & D. C. Pyrooz (Eds.), *The handbook of gangs* (pp.345-368). West Sussex, UK: Wiley-Blackwell.
- Block, C. R., & Block, R. (1993). Street gang crime in Chicago. *Research in Brief*. Washington DC: U.S. Department of Justice, National Institute of Justice.
- Blondel, V. D., Guillaume, J.-L., Lambiotte, R., & Lefebvre, E. (2008, July). Fast unfolding of communities in large networks. *arXiv:0803.0476v2*.
- Borgatti, S. P. (2005). Centrality and network flow. *Social Networks*, 27, 55-71.
- Bosmia, A. N., Quinn, J. F., Peterson, T. B., Griessenauer, C. J., & Tubbs, R. S. (2014). Outlaw Motorcycle Gangs: Aspects of the One-Percenter culture for emergency department personnel to consider. *Western Journal of Emergency Medicine*, 15(4), 523-528.
- Brantingham, P. J., Tita, G. E., Short, M. B., & Reid, S. E. (2012). The ecology of gang territorial boundaries. *Criminology*, 50(3), 851-885.
- Brennan Center for Justice. (2019, July 10). *Map: Social media monitoring by police departments, cities, and counties*. Retrieved from <https://www.brennancenter.org/our-work/research-reports/map-social-media-monitoring-police-departments-cities-and-counties>.
- Brewster, B., Polovina, S., Rankin, G., & Andrews, S. (2014). Knowledge management and human trafficking: Using conceptual knowledge representation, text analytics and open-source data to combat organized crime. In N Hernandez, R. Jaschke, & M. Croitoru (Eds.), *Graph-based representation and reasoning: Lecture notes in computer reasoning* (pp. 104-117). New York, NY: Springer Publishing.
- Brin, S., & Page, L. (1998). The anatomy of a large-scale hypertextual Web search engine. *Computer Networks*, 30, 107-117.
- Brotherton, D. C. (1997). Socially constructing the nomads. Part one. *Humanity and Society*, 21, 110-129.
- Brotherton, D. C., & Barrios, L. (2004). *The Almighty Latin King and Queen Nation*. New York, NY: Columbia University Press.
- Bursik, R. J., Jr., & Grasmick, H. G. (1993). Economic deprivation and neighborhood crime rates, 1960-1980. *Law and Society Review*, 27(2), 263-284.
- Burt, R. S. (1995). *Structural holes: The social structure of competition*. Cambridge, MA: Harvard University Press.
- Burt, R. S. (2000). The network structure of social capital. *Research in Organizational Behavior*, 22, 345-423.

- Byman, D. (2005). *Deadly connections: States that sponsor terrorism*. New York, NY: Cambridge University Press.
- California Department of Justice. (2010). *Organized crime in California: 2010 annual report to the legislature*. Sacramento, CA: Bureau of Investigation and Intelligence.
- Campbell, A. (1984). *The Girls in the Gang*. Oxford, U.K.: Basil Blackwell.
- Campbell, A., & Muncer, S. (1989). Them and us: A comparison of the cultural context of American gangs and British subcultures. *Deviant Behavior*, 10(3), 271-288.
- Cannata, M. J. (2009). Achieving peace in the streets: How legislative efforts fail in combating gang violence in comparison to successful local community-based initiatives. *New England Journal on Criminal and Civil Confinement*, 35, 243-276.
- Carpenter, A. C., & Cooper, S. (2015). Understanding transnational gangs and criminal networks: A contribution to community resilience, a social network analysis of the San Diego/Tijuana border region. *Journal of Gang Research*, 22(3), 1-18.
- Cawley, M. (2013, July 19). *El Salvador gangs use truce to strengthen drug ties: Official*. Retrieved from <https://www.insightcrime.org/news/brief/el-salvador-gangs-using-truce-to-strengthen-drug-ties-security-minister/>.
- Center on Extremism. (2016). *White supremacist prison gangs in the United States: A preliminary inventory*. New York, NY: Anti-Defamation League.
- Chein, I., Gerard, D. L., Lee, R. S., & Rosenfeld, E. (1964). *The road to H: Narcotics, delinquency, and social policy*. New York, NY: Basic Books.
- Chestnut, S. (2007). Illicit activity and proliferation: North Korean smuggling networks. *International Security*, 32(1), 80-111.
- Chicago Gang History. (2017a). *Archives: Alliances*. Retrieved from <https://chicagoganghistory.com/alliance/>.
- Chicago Gang History. (2017a). *Folk Nation*. Retrieved from <https://chicagoganghistory.com/alliance/folk-nation/>.
- Chicago Gang History. (2017b). *Gangster Disciples*. Retrieved from <https://chicagoganghistory.com/gang/gangster-disciples/>.
- Chicago Gang History. (2017b). *Latin Kings*. Retrieved from <https://chicagoganghistory.com/gang/almighty-latin-kings/>.
- Chicago Gang History. (2017c). *Spanish Cobras*. Retrieved from <https://chicagoganghistory.com/gang/insane-spanish-cobras/>.

- Cohen, A. K. (1955). *Delinquent boys: The culture of the gang*. New York, NY: Free Press.
- Cohen, L., & Felson, M. (2014). Routine activity theory. In F. T. Cullen, R. Agnew, & P. Wilcox (Eds.), *Criminological theory: Past to present* (5th ed.) (pp. 469-479). New York, NY: Oxford University Press.
- Collin, P., Rahilly, K., Richardson, I., & Third, A. (2011). *The benefits of social networking services: A literature review*. Melbourne, AU: Cooperative Research Centre for Young People, Technology, and Wellbeing.
- Committee on Homeland Security. (2012). *Compilation of Hearings on Islamist Radicalization – Volume 1* (Publication No. 112-9). Washington, DC: U.S. Government Printing Office.
- Congressional Bills 103rd Congress (1994). Violent Crime and Law Enforcement Act. Washington, DC: U.S. Government Printing Press.
- Conquergood, D. (1997). Street literacy. In J. Flood, S. B. Heath, and D. Lapp (Eds.) *Handbook on teaching literacy through the communicative and visual arts* (pp. 354-375). New York, NY: Simon and Schuster.
- Coughlin, B. C., & Venkatesh, S. A. (2003). The urban street gang after 1970. *Annual Review of Sociology*, 29, 41-64.
- Covey, H. C. (2010). *Street gangs throughout the world* (2nd ed.). Springfield, IL: Thomas Books.
- Covey, H. C., Menard, S., & Franzese, R. J. (Eds.). (1992). *Juvenile gangs*. Springfield, IL: Charles C. Thomas.
- Criminal Investigation Command. (2007). *Summary report gang activity assessment Jan 2004-Aug 2005*. Fort Belvoir, VA: Department of the Army.
- Criminal Investigation Command. (2016). *Live to ride: Soldiers encouraged to get smart on motorcycle culture*. Quantico, VA: Department of the Army.
- Crone, M., & Harrow, M. (2011). Homegrown terrorism in the West. *Terrorism and Political Violence*, 23, 521-536.
- Cullen, F. T., Agnew, R., & Wilcox, P. (Eds.). (2014). *Criminological theory: Past to present* (5th ed.). New York, NY: Oxford University Press.
- Cureton, S. R. (2009). Something wicked this way comes: A historical account of Black gangsterism offers wisdom and warning for African American leadership. *Journal of Black Studies*, 40(2), 347-361.

- Curry, G. D. (2000). Self-reported gang involvement and officially recorded delinquency. *Criminology*, 38(4), 1253-1274.
- Curry, G. D. (2015). The logic of defining gangs revisited. In S. H. Decker & D. C. Pyrooz (Eds.), *The handbook of gangs* (pp. 7-27). West Sussex, UK: Wiley-Blackwell.
- Curry, G. D., & Decker, S. H. (2002). *Confronting gangs: Crime and community*. Los Angeles: Roxbury.
- Davis, J. R., Henning, A., Domma, F., Romero, C., & Saffell, E. (2018). *The gang book: A detailed overview of street gangs in the Chicago metropolitan area*. Chicago, IL: Chicago Crime Commission.
- De Benitez, S. T. (2007). *State of the world's street children: violence*. London, UK: Consortium for Street Children.
- Decker, S. H., Bynum, T., & Weisel, D. (1998). A tale of two cities: Gangs as organized crime groups. *Justice Quarterly*, 15(3), 395-425.
- Decker, S. H., McGarrell, E. F., Perez, H., & Hipple, N. K. (2007). *Project Safe Neighborhoods: Strategic interventions*. Washington, DC: U.S. Department of Justice.
- Decker, S. H., & Pyrooz, D. C. (2011). Gangs, terrorism, and radicalization. *Journal of Strategic Security*, 4(4), 151-166.
- Decker, S. H., & Pyrooz, D. C. (2015). Street gangs, terrorists, drug smugglers, and organized crime: What's the difference? In S. H. Decker & D. C. Pyrooz (Eds.), *The handbook of gangs* (294-308). United Kingdom: Wiley-Blackwell.
- Decker, S. H., Pyrooz, D. C., Sweeten, G., & Moule, R. K., Jr. (2014). Validating self-nomination in gang research: Assessing differences in gang embeddedness across non-, current, and former gang members. *Journal of Quantitative Criminology*, 30(4), 577-598.
- Decker, S. H., van Gemert, F. & Pyrooz, D. C. (2009). Gangs, migration, and crime: The changing landscape in Europe and the USA. *Journal of International Migration and Integration*, 10(4), 393-408.
- Decker, S. H., & van Winkle, B. (1996). *Life in the gang: Family, friends, and violence*. United Kingdom: Cambridge University Press.
- DeFleur, L. B. (1967). Ecological variables in the cross-cultural study of delinquency. *Social Forces*. 45(4), 536-570.
- Densley, J. A. (2014). It's gang life, but not as we know it: The evolution of gang business. *Crime and Delinquency*, 60(4), 1-30.

- Desjardins, J. (2018, May 14). *What happens in an internet minute in 2018?* Retrieved from <https://www.visualcapitalist.com/internet-minute-2018/>.
- De Sola Pool, I., & Kochen, M. (1979). Contacts and influence. *Social Networks*, 1, 5-51.
- Deuces and Trays (n.d.) Retrieved from <https://unitedgangs.com/deuces2x-and-trays3x-gangster-crips/>.
- Dimenstein, G. (1991). *Brazil war on children*. London, UK: Latin America Bureau.
- Drug Enforcement Administration. (2018). *National drug threat assessment*. Washington, DC: U.S. Department of Justice.
- Dudley, S., Ávalos, H. S., Martínez, J. J., Hershberg, E., Stinchcomb, D., LaSusa, M., Salomón, J., Rísquez, R., Roldán, E., Rico, A. I., Valencia, M. L., García, D., Maguire, E., Katz, C., Nuño, L., Barak, M., & Leon, K. (2018). *MS13 in the Americas: How the world's most notorious gang defies logic, resists destruction*. Retrieved from <https://www.insightcrime.org/wp-content/uploads/2018/02/MS13-in-the-Americas-InSight-Crime-English.pdf>.
- Edwards, J. (2017, Aug. 24). As Norfolk killings rekindle fears of gang war, police chief says strategy to prevent it is working. *The Virginia-Pilot*. Retrieved from https://www.pilotonline.com/news/crime/article_425b1f32-579c-565a-ac84-10adbccd7122.html.
- Emory, R. (1996). *The blueprint: From Gangster Disciple to growth and development*. Kearney, NE: Morris Publishing.
- Engley, A., Jr. & Howell, J. C. (2013) *Highlights of the 2011 national youth gang survey*. Office of Juvenile Justice and Delinquent Protection: US Department of Justice. Retrieved from <https://ojjdp.ojp.gov/sites/g/files/xyckuh176/files/pubs/242884.pdf>.
- Esbensen, F.-A., Winfree, L. T., He, N., & Taylor, T. J. (2001). Youth gangs and definitional issues: When is a gang a gang, and why does it matter? *Crime and Delinquency*, 47(1), 105-130.
- Eyler, G. (2009). Gangs in the military. *The Yale Law Journal*, 118(4), 696-742.
- Fagan, J. (1990). Social processes of delinquency and drugs among urban gangs. In C. R. Huff (Ed.), *Gangs in America* (pp. 183-219). Newbury Park, CA: Sage.
- Fagan, J. (1993). The political economy of drug dealing among urban gangs. In R. C. Davis, A. J. Lurigio, & D. P. Rosenbaum (Eds.), *Drugs and the community: Involving community residents in combatting the sale of illegal drugs* (pp. 19-54). Springfield, IL, England: Charles C Thomas.
- Farah, D., & Babineau, K. (2017). The evolution of MS 13 in El Salvador. *Prism*, 7(1), 59-73.

- Federal Bureau of Investigations. (n.d.). *Gangs*. Retrieved from <https://www.fbi.gov/investigate/violent-crime/gangs>.
- Federal Bureau of Investigations. (n.d.). *Transnational organized crime*. Retrieved from <https://www.fbi.gov/investigate/organized-crime>.
- Federal Bureau of Investigations. (1974a). Freedom of Information and Privacy Acts Subject File: *Mexican Mafia*. (File 1).
- Federal Bureau of Investigations. (1974b). Freedom of Information and Privacy Acts Subject File: *Black Guerilla Family*. (File 1).
- Federal Bureau of Investigations. (1977). Freedom of Information and Privacy Acts Subject File: *La Nuestra Familia*.
- Federal Bureau of Investigations. (1981). Freedom of Information and Privacy Acts Subject File: *Black Guerilla Family*. (File 3).
- Federal Bureau of Investigations. (1982). Freedom of Information and Privacy Acts Subject File: *Aryan Brotherhood*.
- Federal Bureau of Investigations (1996). Freedom of Information and Privacy Acts Subject File: *Aryan Circle*.
- Felson, M. (2006). The street gang strategy. In M. Felson (Ed.), *Crime and nature* (pp. 305-324). Thousand Oaks, CA: Sage.
- Festinger, L., Schachter, S., & Bach, K. (1950). *Social pressures in informal groups*. New York, NY: Harper.
- Flanigan, S. T. (2012). Terrorist next door? A comparison of Mexican drug cartels and Middle Eastern terrorist organizations. *Terrorism and Political Violence*, 24(2), 279-294.
- Fox, A. (2013). *Examining gang social network structure and criminal behavior* [Unpublished doctoral dissertation]. Arizona State University.
- Freeman, L. C. (1979). Centrality in social networks conceptual clarification. *Social Networks*, 1, 215-239.
- Freeman, L. C. (2004). *The development of social network analysis: A study in the sociology of science*. Vancouver, BC: Empirical Press.
- Friman, H. R. (Ed.). (2009). *Crime and the global political economy*. Boulder, CO: Lynne Rienner.
- Gang Identification Task Force. (n.d.). *Dead Man Inc*. Retrieved from <http://whiteprisongangs>.

- blogspot.com/2009/05/dead-man-inc.html.
- Gang Identification Task Force. (n.d). *G.I.T.F. websites*. Retrieved using the search function from gangtaskforce.blogspot.com.
- Garcia, C. (2016, November 30). *How the MS13 got its foothold in transnational drug trafficking*. Retrieved from <https://www.insightcrime.org/investigations/how-the-ms13-got-its-foothold-in-transnational-drug-trafficking/>.
- Garot, R. (2010). *Who you claim: Performing gang identity in school and on the streets*. New York, NY: New York University Press.
- Gilinsky, Y. (2006). Crime in contemporary Russia. *European Journal of Criminology*, 3(3), 259-292.
- Gitelman, L. (2006). *Always already new: Media, history, and the data of culture*. Cambridge, MA: MIT Press.
- Greene, J. A. & Pranis, K. (2007). *Gang wars: The failure of enforcement and the need for effective public safety strategies*. Washington, D.C.: Justice Policy Institute.
- Gunnell, D., Hillier, J., & Blakeborough, L. (2016). *Social network analysis of an urban street gang using police intelligence data*. London, UK: Home Office.
- Hagedorn, J. M. (1988). *People and Folks: Crime and the underclass in a rustbelt city*. Chicago, IL: Lake View Press.
- Hagedorn, J. M. (1994). Neighborhoods, markets, and gang drug organization. *Journal of Research in Crime and Delinquency*, 31(3), 264-294.
- Hagedorn, J. M. (2005). The global impact of gangs. *Journal of Contemporary Criminal Justice*, 21(2), 153-169.
- Hammes, T. X. (2006). *The sling and the stone: On war in the 21st century*. St Paul, MN: Zenith Press.
- Hamm, M. S. (2007). *Terrorist recruitment in American correctional institutions: An exploratory study of non-traditional faith groups final report* (Report No. 220957). Washington, DC: US Department of Justice.
- Hankins, W. (2014). *Alpha guard*. Santa Ana, CA: Police and Fire Publishing.
- Hardaway v. Haggerty et al., 05-70362 (Mich. 2009).
- Harrigan, N., & Yap, J. (2017). Avoidance in negative ties: Inhibiting closure, reciprocity, and homophily. *Social Networks*, 48, 126-141.

- Hayes, B. (2018). *The One Percenter encyclopedia: The world of outlaw motorcycle clubs from Abyss Ghosts to Zombie Elite*. Minneapolis, MN: Motorbooks.
- Hazen, J. M., & Rodgers, D. (2014). *Global gangs: Street violence across the world*. Minneapolis, MN: University of Minnesota Press.
- Hiestand, T. (2018). *Gang membership, duration, and desistance: Empirical literature review*. Retrieved from <https://oag.ca.gov/sites/all/files/agweb/pdfs/Ab90-Literature-Review-FINAL.pdf>. Sacramento, CA: California Department of Justice.
- Hip-Hop Databasae. (n.d.). Retrieved using the search function from <https://hiphopdatabase.fandom.com>.
- Hells Angels MC. (n.d.). *Hells Angels motorcycle club North America*. Retrieved from <https://hells-angels.com/world/north-america>.
- Hodgson, G. M. (2006). What are institutions? *Journal of Economic Issues*, 40(1), 1-25.
- Horne, G. (1995). *Fire this time: The Watts uprising and the 1960s*. Charlottesville, VA: University Press of Virginia.
- Howell, J. C. (2012). *Gangs in America's communities*. Thousand Oaks, CA: Sage.
- Howell, J. C. (2015). *The history of street gangs in the United States: Their origins and transformation*. Lanham, MD: Lexington Books.
- Hubbard, J. D., Wyman, K., & Chicago Crime Commission. (2012). *The gang book: A detailed overview of street gangs in the Chicago metropolitan area*. Chicago, IL: Chicago Crime Commission.
- Huff, C. R. (1989). Youth gangs and public policy. *Crime & Delinquency*, 35(4), 524-537.
- Huff, C. R., & Barrows, J. (2015). Documenting gang activity: Intelligence databases. In S. H. Decker & D. C. Pyrooz (Eds.), *The handbook of gangs* (pp. 59-77). West Sussex, UK: Wiley-Blackwell.
- Hunter, D. R., Handcock, M. S., Butts, C. T., Goodreau, S. M., & Morris, M. (2009). ERGM: A package to fit, simulate and diagnose exponential-family models for networks. *Journal of Statistical Software*, 24(3), 1-29.
- Ikeda, K., Liu, J. H., Aida, M., & Wilson, M. (2005). Dynamics of interpersonal political environment and party identification: Longitudinal studies of voting in Japan and New Zealand. *Political Psychology*, 26(4), 517-542.
- InSight Crime and Center for Latin American & Latino Studies. (2018). *MS13 in the Americas:*

- How the world's most notorious gang defies logic, resists destruction.* Retrieved from <https://www.justice.gov/eoir/page/file/1043576/download>.
- InSight Crime. (2020). *Investigation and analysis of organized crime*. Retrieved using the search function from <https://www.insightcrime.org>.
- Ito, M., & Okabe, D. (2005). Technosocial situations: Emergent structurings of mobile email use. In M. Ito & D. Okabe (Eds.), *Personal, portable, pedestrian: Mobile phones in Japanese life* (pp. 257-275). Cambridge, MA: MIT Press.
- Jankowski, M. S-, (1991). *Islands in the street: Gangs and American urban society*. Los Angeles, CA: University of California Press.
- Johnson, C. (2006, August). *God, the black man and the Five Percenters*. Retrieved from <https://www.npr.org/templates/story/story.php?storyId=5614846>.
- Johnson, C., Webster, B., & Connors, E. (1995). Prosecuting gangs: A national assessment. In *Research in Brief*. Washington, DC: National Institute of Justice.
- Juvenile Justice Institute. (2012). *Durham comprehensive anti-gang initiative: Project bull's eye*. Durham, NC: Department of Justice, Office of Justice Program, Bureau of Justice Assistance.
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59-68.
- Kaplan, J. (1997). *Radical religion in America: Millenarian movements from the far Right to the Children of Noah*. Syracuse, NY: Syracuse University Press.
- Katz, C. M., & Webb, V. (2006). *Policing gangs in America*. New York, NY: Cambridge University Press.
- Katz, J., & Jacobs, C. J-. (2004). The criminologists' gang. In C. Sumner (Ed.) *Blackwell Companion to Criminology* (pp. 91-124). Oxford, UK: Blackwell.
- Keiser, R. L. (1969). *The Vice Lords: Warriors of the street*. New York, NY: Holt, Rinehart & Winston.
- Klein, M. W. (1971). *Street gangs and street gang workers*. Englewood Cliffs, NJ: Prentice Hall.
- Klein, M. W. (1995). *The American street gang: Its nature, prevalence, and control*. New York, NY: Oxford University Press.
- Klein, M. W. (1996). Gangs in the United States and Europe. *European Journal on Criminal Policy and Research*, 4(2), 63-80.
- Klein, M. W. (2001). Resolving the Eurogang paradox. In M. W. Klein, H. J. Kerner, C. L.

- Maxson, & E G. M. Weitekamp (Eds.), *The Eurogang paradox: Street gangs and youth groups in the U.S. and Europe* (pp. 7-19). London, UK: Kluwer Academic.
- Klein, M. W., Kerner, H., Waxson, C. L., & Wietekamp, E. G. M. (Eds.). (2001). *The eurogang paradox: Street gangs and youth groups in the U.S. and Europe*. Dordrecht, Germany: Kluwer Academy.
- Klein, M. W., & Maxson, C. L. (2006). *Street gang patterns and policies*. Oxford, UK: Oxford University Press.
- Knox, G. W. (1994). *An introduction to gangs*. Bristol, IN: Wyndham Hall.
- Knox, G. W. (2008a). *Gang profile update: The Black P. Stone Nation (BPSN)*. Retrieved from <https://www.ngcrc.com/ngcrc/bpsn2003.htm>.
- Knox, G. W. (2008b). *The impact of the federal prosecution of the Gangster Disciples*. Retrieved from <https://ngcrc.com/ngcrc/page14.htm>.
- Knox, G. W. (2010). *Gang profile: The Latin Kings*. Retrieved from <https://ngcrc.com/ngcrc/page15.htm>.
- Knox, G. W. (2012). The problem of gangs and security threat groups (STG's) in American prisons and jails today: Recent findings from the 2012 NGCRC national gang/STG survey. *Journal of Gang Research*, 20(1), 51-76.
- Knox, G. W., Etter, G. W., & Smith, C. F. (2019). *Gangs and organized crime*. New York, NY: Routledge.
- Kontos, L., & Brotherton, D. C. (2008). *Encyclopedia of gangs*. Westport, CT: Greenwood Press.
- Koschade, S. (2006). A social network analysis of Jemaah Islamiyah: The applications to counter-terrorism and intelligence. *Studies in Conflict and Terrorism*, 29(6), 559-575.
- Kroeker, M., & Haut, F. (1995). A tale of two cities: The street gangs of Paris and Los Angeles. *The Police Chief*, 62(5), 32, 34-35, 44-46.
- Kuhn, T. S. (1962). *The structure of scientific revolutions*. Chicago, IL: University of Chicago Press.
- Lane, J., & Meeker, J. W. (2003). Fear of gang crime: A look at three theoretical models. *Law & Society Reviews*, 37, 425-456.
- Lasley, J. R. (1992). Age, social context, and street gang membership: Are "youth" gangs becoming "adult" gangs? *Youth & Society*, 23(4), 434-451.

- Law Enforcement Access to Data Stored Across Borders: Facilitating Cooperation and Protecting Rights: Hearings before the Subcommittee on Crime and Terrorism, Senate, 115th Cong. 5 (2017) (Testimony of Brad Wiegmann).
- Levitt, S., & Venkatesh, S. A. (2000). An economic analysis of a drug-selling gang's finances. *Quarterly Journal of Economics*, 115(3), 755-789.
- Lomborg, S., & Bechmann, A. (2014). Using APIs for data collection on social media. *The Information Society*, 30(4), 256-265.
- Los Angeles Police Department. (2019, October). *Gangs*. Retrieved from http://www.lapdonline.org/la_gangs/content_basic_view/1396.
- Los Angeles Police Department. (2020). *Gangs*. Retrieved from http://www.lapdonline.org/get_informed/content_basic_view/1396.
- Lu, H., Halappanavar, M., & Kalyanaraman, A. (2014, Oct.). Parallel heuristics for scalable community detection. *arXiv preprint arXiv:1410.1237*.
- Luke, D. A. (2015). *A user's guide to network analysis in R*. New York, NY: Springer.
- Maclure, R., & Sotelo, M. (2004). Youth gangs in Nicaragua: Gang membership as structured individualization. *Journal of Youth Studies*, 7(4), 417-432.
- Malone, M. F. T., & Rowe, C. B. M-. (2014). Transnational organized crime in Latin America. In J. Albanese & P. Reichel (Eds.), *Transnational organized crime* (57-74). Los Angeles, CA: Sage Publications.
- Manwaring, M. G. (2005). Street gangs: The new urban insurgency. Army War College Strategic Studies Institute Carlisle Barracks PA.
- Marie', A. (2015, March 3). Things that make you go hmmm: The acronyms of Bloods & Crips [Blog Post]. Retrieved from <http://www.andralemarie.com/Writers-Canvas-Blog/2015/3/Things-That-Make-You-Go-Hmmm-The-Acronyms-Of-Bloods-Crips>.
- Martinez, J. F. E. (2008). Bloods. In L. Kontos & D. C. Brotherton (Eds.), *Encyclopedia of gangs* (pp. 12-15). Westport, CT: Greenwood Publishing Group.
- Martinez, J. F. E., & Ramos, M. A. (2008). Crips. In L. Kontos & D. C. Brotherton (Eds.), *Encyclopedia of gangs* (pp. 43-46). Westport, CT: Greenwood Publishing Group.
- Martin, P. (2015). Economic aspects of migration. In C. B. Brettell, & J. F. Hollifield (Eds.), *Migration theory: Talking across disciplines* (pp. 90-114). New York, NY: Routledge.
- Matheron, M. S. (1988). China: Chinese Triads, the Oriental Mafia. *CJ International*, 4(3), 26-27.

- McGloin, J. (2005). Policy and intervention considerations of a network analysis of street gangs. *Criminology and Public Policy*, 4, 607-636.
- McGloin, J. M. (2006). *Street gangs and interventions: Innovative problem solving with network analysis*. Washington, DC: US Department of Justice.
- McGloin, J. M., & Kirk, D. S. (2010). An overview of social network analysis. *Journal of Criminal Justice Education*, 21(2), 169-181.
- Mendoza, R. (2012). *Mexican Mafia from altar boy to hitman: The gang of gangs*. Santa Ana, CA: Police and Fire Publishing.
- Microsoft v. United States, No. 14-2985 (2nd Cir. 2017). Retrieved from <https://www.politico.com/f/?id=00000159-d101-da97-a9dd-d5c58f880001>.
- Miethe, R. C., & McCokle, T. D. (1997). Gang membership and criminal processing: A test of the "master status" concept. *Justice Quarterly*, 14(3), 407-427.
- Milgrim, S. (1967). The small-world problem. *Psychology Today*, 1(1), 61-67.
- Miller, W. B. (1958). Lower class culture as a generating milieu of gang delinquency. *Journal of Social Issues*. 14(3), 5-19.
- Miller, W. B. (1975). *Violence by youth gangs and youth groups as a crime problem in major American cities*. Washington, DC: US Government Printing Office.
- Miller, W. B. (2001). *The Growth of youth gang problems in the United States: 1970-1998*. Washington, DC: Office of Juvenile Justice and Delinquency Prevention.
- Moghaddam, F. M. (2005). The staircase to terrorism: A psychological exploration. *American Psychologist*, 60(2), 161-169.
- Montaldo, C. (2019, Aug. 8). *The Aryan Brotherhood: One of the most notorious prison gangs*. Retrieved from <https://www.thoughtco.com/the-aryan-brotherhood-971943>.
- Moore, J. W. (1991). *Going down to the barrio: Homeboys and homegirls in change*. Philadelphia, PA: Temple University Press.
- Moore, J. W. (1998). Understanding youth street gangs: Economic restructuring and the urban underclass. In M. W. Watts (Ed.) *Cross-cultural perspectives on youth and violence* (pp. 65-78). Stamford, CT: Jai Press.
- Moorehead, C. (1990, November). Fighting for life in the streets: If they manage to find food they still face the terror of police death squads. *The Independent (London)*, 28, 22.

- Moreno, J. L. (1934). *Who shall survive?* Beacon, NY: Beacon House.
- Morris, M., Handcock, M. S., & Hunter, D. R. (2008). Specification of exponential-family random graph models: Terms and computational aspects. *Journal of Statistical Software*, 24(4), 1-24.
- Naím, M. (2012). Mafia states: Organized crime takes office. *Foreign Affairs*, 91(3), 100-111.
- National Alliance of Gang Investigators Association. (2005). *National gang threat assessment*. Washington, DC: Bureau of Justice Assistance.
- National Drug Intelligence Center. (2003). *Drugs and crime gang profile: United Blood Nation*. Johnstown, PA: Department of Justice.
- National Gang Intelligence Center. (2007). *Gang-related activity in the US Armed Forces increasing*. Washington, DC: Federal Bureau of Investigations.
- National Gang Intelligence Center. (2009). *National gang threat assessment*. Washington, DC: Federal Bureau of Investigations.
- National Gang Intelligence Center. (2011). *2011 national gang threat assessment: Emerging trends*. Washington, DC: Federal Bureau of Investigations.
- National Gang Intelligence Center. (2012). *Demographics: Age of gang members*. Retrieved from <https://www.nationalgangcenter.gov/Survey-Analysis/Demographics#anchorage>.
- National Gang Intelligence Center. (2013). *The 2013 national gang report*. Washington, DC: Federal Bureau of Investigations.
- National Gang Intelligence Center. (2015). *The 2015 national gang report*. Washington, DC: Federal Bureau of Investigations.
- National Youth Gang Survey. (1999). *National youth gang survey*. Washington, DC: Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.
- Needham, M., & Hodler, A. E. (2019). Community detection algorithms. In M. Needham & A. E. Hodler (Eds.) *Graph algorithms: Practical examples in Apache Spark & Neo4j*. Retrieved from <https://neo4j.com/docs/graph-algorithms/current/algorithms/louvain/>.
- Newcomb, T. M. (1960). Varieties of interpersonal attraction. In D. Cartwright & A. Zander (Eds.), *Group dynamics: Research and theory* (2nd ed., pp. 104-119). Evanston, IL: Row, Peterson.
- Newman, M. E. J. (2006, Feb). Modularity and community structure in networks. *arXiv:physics/0602124v1*.

- Newman, M. E. J. (2015). *Networks: An introduction*. Oxford, UK: Oxford University Press.
- North Carolina Correctional Officer Training. (2016). *Security threat groups*. Raleigh, NC: North Carolina Department of Public Safety.
- North Carolina Department of Justice. (2017, February 1). *Former North Carolina correctional officer sentenced to 5 years imprisonment*. Retrieved from <https://www.justice.gov/usao-ednc/pr/former-north-carolina-correctional-officer-sentenced-5-years-imprisonment>.
- North Carolina State Highway Patrol. (2014). *Gangs in North Carolina: An analysis of NC GangNET Data*. Raleigh, NC: North Carolina Department of Public Safety.
- Office of Juvenile Justice and Delinquency Prevention. (1997). *Juvenile justice reform initiatives in the states: 1994-1996* (96-JN-FX-0001). Washington, DC: U.S. G.P.O.
- Omori, M., & Thompkins, D. E. (2008). Gangster Disciples. In L. Kontos & D. C. Brotherton (Eds.), *Encyclopedia of gangs* (pp. 106-110). Westport, CT: Greenwood Press.
- One Percenter Bikers. (2020). *Bandidos MC (Motorcycle Club)*. Retrieved from <https://onepercenterbikers.com/bandidos-motorcycle-club/>.
- One Percenter Bikers. (2020a). *List of one percenters motorcycle clubs*. Retrieved from <https://onepercenterbikers.com/list-of-one-percenters-motorcycle-clubs>.
- One Percenter Bikers. (2020b). *Iron Order MC*. Retrieved from <https://onepercenterbikers.com/iron-order-mc-motorcycle-club>.
- Overton, A. B. (2008). Federal gang laws: A new tool against a growing threat or overboard and dangerous? *Rutgers Race and the Law Review*, 9, 405-440.
- Padilla v. Bush, Rumsfeld, and Marr, 02 Civ. 4445 (New York, 2002).
- Papachristos A. V. (2001) A.D., *After the Disciples: The neighborhood impact of federal gang prosecution*. Peotone, IL: New Chicago School Press.
- Papachristos, A. V., & Kirk, D. S. (2006). Neighborhood effects on street gang behavior In J. F. Short, Jr. & L. A. Hughes (Eds.), *Studying youth gangs* (pp. 63-84). Walnut Creek, CA: AltaMira.
- Patton, D. U. (2015). Gang violence, crime, and substance use on Twitter: A snapshot of gang communication in Detroit. *Proceedings of the Society for Social Work and Research 19th Annual Conference: The Social and Behavioral Importance of Increased Longevity*. New Orleans, LA: SSWR.
- Patton, D. U., Eschmann, R. D., & Butler, D. A. (2013). Internet banging: New trends in social media, gang violence, masculinity and hip hop. *Computers in Human Behavior*, 29, 54-59.

- Perkins, U. E. (1987). *Explosion of Chicago's black street gangs 1900 to present*. Chicago, IL: Third World Press.
- Peterson, D., Taylor, T. J., & Esbensen, F. A. (2004). Gang membership and violent victimization. *Justice Quarterly*, *21*, 793-815.
- Pew Research. (2019a, June 25). *Network news fact sheet*. Retrieved from <https://www.journalism.org/fact-sheet/network-news/>.
- Pew Research. (2019b, July 9). *Newspapers fact sheet*. Retrieved from <https://www.journalism.org/fact-sheet/newspapers/>.
- Pinnock, D., & Hamilton, M. D-. (1997). *Gangs, rituals and rites of passage*. Cape Town, South Africa: African Sun Press.
- Piquette, J. C., Smith, C. M., & Papachristos, A. V. (2014). Social network analysis of urban street gangs. In: G. Bruinsma & D. Weisburd (eds.) *Encyclopedia of criminology and criminal justice* (pp. 4981-4991. New York, NY: Springer.
- Police Law Enforcement Solutions. (2020). Retrieved using the search function from <https://www.policemag.com>.
- Preciado, P., Snijders, T. A. B., Burk, W. J., Stattin, H., & Kerr, M. (2012). Does proximity matter? Distance dependence of adolescent friendships. *Social Networks*, *34*(1), 18-31.
- Pujol, J. M., Erramilli, V., & Rodriguez, P. (2009). Divide and conquer: Partitioning online social networks. Retrieved from <http://arxiv.org/abs/0905.4918v1>.
- Pyrooz, D. C. (2014). From your first cigarette to your last dyin' day: The patterning of gang membership in the life-course. *Journal of Quantitative Criminology*, *30*(2), 349-372.
- Pyrooz, D. C., & Decker, S. H. (2019). *Competing for control: Gangs and the social order of prisons*. New York, NY: Cambridge University Press.
- Pyrooz, D. C., Fox, A. M., & Decker, S. H. (2010). Racial and ethnic heterogeneity, economic disadvantage, and gangs: A macro-level study of gang membership in urban America. *Justice Quarterly*, *27*(6), 1-26.
- Pyrooz, D. C., & Mitchell, M. M. (2015). Little gang research, big gang research. In S. H. Decker & D. C. Pyrooz (Eds.), *The handbook of gangs* (pp. 28-58). Hoboken, NJ: Wiley-Blackwell.
- Pyrooz, D. C., & Moule, R. K. (2019). Gangs and social media. In *Oxford research encyclopedia of criminology and criminal justice*. Oxford University Press. Retrieved from <https://doi.org/10.1093/acrefore/9780190264079.013.439>.

- Quinn, J. F. (1987). Sex roles and hedonism among members of “outlaw” motorcycle clubs. *Deviant Behavior*, 8(1), 47-63.
- Quinn, J. F., & Forsyth, C. J. (2009). Leathers and Rolexes: The symbolism and values of the motorcycle club. *Deviant Behavior*, 30(3), 235-265.
- Radil, S. M., Flint, C., & Tita, G. E. (2010). Spatializing social networks: Using social network analysis to investigate geographies of gang rivalry, territoriality, and violence in Los Angeles. *Annals of the Association of American Geographers*, 100(2), 307-326.
- Raghavan, U. N., Albert, R., & Kumara, S. (2007, Sept.). Near linear time algorithm to detect community structures in large-scale networks. *arXiv:0709.2938v1*.
- Rap Dictionary. (n.d.). Retrieved using the search function from <http://www.rapdict.org>.
- Rap Dictionary. (2015a). *Eight Tray Gangster Crips*. Retrieved from http://www.rapdict.org/Eight_Tray_Gangster_Crips
- Rap Dictionary. (2015b). *Tree Top Pirus*. Retrieved from http://www.rapdict.org/Tree_Top_Pirus.
- Reese, R. (2003). The multiple causes of the LAPD Rampart scandal. *Journal of Interdisciplinary Studies*, 16, 85-97.
- Reeve, E. (2013, April 5). White supremacists think the Aryan Brotherhood is a gang of race traitors. Retrieved from <https://www.theatlantic.com/politics/archive/2013/04/white-supremacists-think-aryan-brotherhood-gang-race-traitors/316583/>.
- Reiss, A. J., Jr. (1988). Co-offending and criminal careers. *Crime and Justice*, 10, 117–170.
- Reno, W. (2009). Illicit commerce in peripheral states. In H. R. Friman (Ed.), *Crime and the global political economy* (67-84). Boulder, CO: Lynne Rienner.
- Richardson, A. (1991). *Outlaw Motorcycle Gangs: USA Overview*. Sacramento, CA: California Department of Justice. Retrieved from <https://www.ncjrs.gov/pdffiles1/Digitization/147691NCJRS.pdf>.
- Rinaldo, A., Fienberg, S. E., & Zhou, Y. (2009). On the geometry of discrete exponential families with application to exponential random graph models. *Electronic Journal of Statistics*, 3, 446-484.
- Roberts, R., & Collins, A. (2020). Islamic Extremism and the crystallization of norms: An agent-based model of prison radicalization. In T. Carmichael & Z. Tang (Eds.), *Proceedings of the 2018 Conference of the Social Science Society of the Americas* (pp. 67-81). Cham, Switzerland: Springer.

- Robins, G., & Lusher, D. (2012). What are exponential graph models? In D. Lusher, J. Koskinen, & G. Robins (Eds.), *Exponential random graph models for social networks* (pp. 9-15). New York, NY: Cambridge University Press.
- Rocky Mountain Information Network. (2008). *Sureños 2008*. Retrieved from <https://info.publicintelligence.net/surenosreport.pdf>. Phoenix, AZ: Bureau of Justice Assistance, Office of Justice Programs.
- Rogers, J. (2007). Gangs and terrorists in the Americas: An unlikely nexus. *Journal of Gang Research, 14*(2), 19-31.
- Roser, M. (2019). War and peace. Retrieved from <https://ourworldindata.org/war-and-peace>.
- Rudd, P., & Evans, K. (1998). Structure and agency in youth transitions: Student experiences of vocational further education. *Journal of Youth Studies, 1*(1), 39-62.
- Sampson, R. J., Morenoff, J. D., & Gannon-Rowley, T. (2002). Assessing “neighborhood effects”: Social processes and new directions in research. *Annual Review of Sociology, 28*, 443-478.
- Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multilevel study of collective efficacy. *Science, 277*(5328), 918-924.
- Sanchez-Jankowski, M. (1991). *Islands in the street: Gangs and the American urban society*. Berkeley, CA: University of California Press.
- Santa Cruz County Gang Task. (2018). Levels of gang involvement. Retrieved from http://www.basta.santacruz.k12.ca.us/levels_of_gang_involvement.html.
- Sante, L. (1991). *Low life: Lures and snares of old New York*. New York: Vintage Books.
- Sartori, G. (1969). Politics, ideology, and belief systems. *American Political Science Review, 63*, 398-411.
- Schneider, E. C. (1999). *Vampires, dragons, and Egyptian kings: Youth gangs in postwar New York*. Princeton, NJ: Princeton University Press.
- Sela-Shayovitz, R. (2012). Gangs and the web: Gang members’ online behavior. *Journal of Contemporary Criminal Justice, 28*(4), 389-405.
- Sessions, J. (2018, October 15). *Attorney General Jeff Sessions delivers remarks announcing the creation of a transnational organized crime task force*. US Department of Justice. Retrieved from <https://www.justice.gov/opa/speech/attorney-general-jeff-sessions-delivers-remarks-announcing-creation-transnational>.
- Shaw, C. R., & McKay, H. D. (1942). *Juvenile delinquency and urban areas*. Chicago, IL:

University of Chicago Press.

Sheldon, R. G., Tracy, S. K., & Brown, W. B. (2001). *Youth gangs in American society*. Belmont, CA: Wadsworth Thomas Learning.

Short, J. F., Jr. (1996). *Gangs and adolescent violence*. Boulder, CO: University of Colorado, Center for the Study and Prevention of Violence.

Short, J. F. Jr., & Strodbeck, F. L. (1965). *Group process and gang delinquency*. Chicago, IL: University of Chicago Press.

Shute, J., & Medina, J. (2014). Hunting Gruffalo: “Gangs,” unreason and the big bad coalition: Jon Schute and Juanjo Medina point to the rhetoric and inaccuracies behind recent policy responses. *Criminal Justice Matters*, 96(1), 26-27.

Sierra-Arevalo, M., & Papachristos, A. (2015). Social network analysis and gangs. In S. Decker & D. Pyrooz (Eds.), *The Handbook of Gangs* (157-177). Oxford, UK: Wiley-Blackwell.

Silber, M. D., & Bhatt, A. (2007). *Radicalization in the West: The homegrown threat*. New York, NY: New York Police Department.

Skarbek, D. (2011). Governance and prison gangs. *The American Political Science Review*, 105(4), 702-716.

Skogan, W. G. (1990). *Disorder and decline: Crime and the spiral decay in American cities*. New York, NY: Free Press.

Skolnick, J. (1990). *Gang organization and migration: Drugs, gangs, and law enforcement*. Sacramento, CA: California Department of Justice.

Smith, C. F. (2011). A comprehensive literature review of military-trained gang members. *Journal of Gang Research*, 19(1), 9-20.

Smith, C. F. (2015). Military-trained gang members: Two different perspectives. *Journal of Gang Research*, 22(2), 23-38.

Southern Poverty Law Center (n.d.a). Retrieved using the search function from <https://www.splcenter.org>.

Southern Poverty Law Center. (n.d.b) *Aryan Brotherhood*. Retrieved from <https://www.splcenter.org/fighting-hate/extremist-files/group/aryan-brotherhood>.

Southern Poverty Law Center. (2005). *Intelligence report: Aryan prison gangs: A violent movement spreads from the prisons to the streets*. Montgomery, AL: SPLC Intelligence Project.

- Southern Poverty Law Center (2016). *Nation of Islam*. Retrieved from <https://www.splcenter.org/fighting-hate/extremist-files/group/nation-islam>.
- Spergel, I. A. (1964). *Racketville, slumtown, haulburg: An exploratory study of delinquent subcultures*. Chicago, IL: University of Chicago Press.
- Spergel I. A. (1995). *The youth gang Problem: A community approach*. New York, NY: Oxford University Press.
- Spergel, I. A., & Curry, G. D. (1993). The national youth gang survey: Research and development process. In A. Goldstein & C. R. Huff (Eds.), *Gang intervention handbook* (pp. 359-400). Champagne-Urbana, IL: Research Press.
- Stack, R. (Director). (2003). *Gangsta king: Raymond Lee Washington: The definitive history of the Crips and the man behind the gang* [Film]. Koch Vision.
- State of California v. Maciel, S070536 (Cali. 2007).
- State of North Carolina v. Kelvin Melton, COA13-940 (NC Court of Appeals, 2014).
- Statista (2018a). Number of monthly active Twitter users worldwide from 1st quarter 2010 to 4th quarter 2017 (in millions). Retrieved from <https://www.statista.com/statistics/282087/number-of-monthly-active-twitter-users>.
- Statista (2018b). Most popular social networks worldwide as of April 2018, ranked by number of active users (in millions). Retrieved from <https://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users>.
- Stephenson, S. (2008). Searching for home: Russian street youth and the criminal community. In M. Flynn, & D. C. Brotherton (Eds.), *Globalizing the streets: Cross-cultural perspectives on youth, social control, and empowerment* (pp. 77-93). New York, NY: Columbia University Press.
- Stroup, Z. (2016). North Carolina gang overview JPS Oversight Committee 2016 [PowerPoint slides]. Retrieved from https://www.ncleg.gov/documentsites/committees/JLOCJPS/2015-16%20Interim/March%202010,%202016%20Subcom%20Reports,%20Gangs,%20ICAC,%20H ERO%20Grants/010%20DPS_SHP_Gang_Overview_2016-03-10.pdf.
- Sullivan, B. A., Chermak, S. M., Wilson, J. M., & Freilich, J. D. (2014) The nexus between terrorism and product counterfeiting in the United States. *Global Crime*, 15(3-4), 357-378.
- Sullivan, J. P. (1997). Third generation street gangs: Turfs, cartels, and net warriors. *Transnational Organized Crime*, 3(3), 95-108.
- Sullivan, J. P. (2001). Gangs, hooligans, and anarchists-The vanguard of netwar in the streets. In J. Arquilla & D. Ronfeldt (Eds.), *Networks and netwars: The future of terror, crime, and*

- militancy* (pp. 99-126). Santa Monica, CA: Rand.
- Sullivan, J. P. (2006). Maras morphing: Revisiting third generation gangs. *Global crime*, 7(3-4), 487-504.
- Sullivan, J. P., & Bunker, R. J. (2007). Third generation gang studies: An introduction. *Journal of Gang Research*, 14(4), 1-10.
- Sullivan, R. (2002). *Labyrinth*. New York, NY: Grove Press.
- Sutherland, E. H., & Cressey, D. R. (2014). A theory of differential association. In F. T. Cullen, R. Agnew, & P. Wilcox (Eds.), *Criminological theory: Past to present* (5th ed.) (pp. 136-139). New York, NY: Oxford University Press.
- Tajfel, H., & Turner, J. C. (2004). The social identity theory of intergroup behavior. In J. T. Jost, & J. Sidanius (Eds.), *Political psychology: Key readings in social psychology* (pp. 276-293). New York, NY: Psychology Press.
- Terror Inmates: Countering Violent Extremism in Prison and Beyond*, Committee on Homeland Security Subcommittee on Counterterrorism and Intelligence, House of Representatives, 114th Cong. 1 (2015) (Testimony of Jerome Bjelopera).
- The R Foundation (n.d.). *What is R?* Retrieved from <https://www.r-project.org/about.html>.
- Thornberry, T. P., Krohn, M. D., Lizotte, A. J., & Chard-Wierschem, D. (1993). The role of juvenile gangs in facilitating delinquent behavior. *Journal of Research in Crime and Delinquency*, 30, 55-87.
- Thornberry, T. P., Krohn, M. D., Lizotte, A. J., Smith, C. A., & Tobin, K. (2003). *Gangs and delinquency in developmental perspective*. Cambridge, UK: Cambridge University Press.
- Thrasher, F.M. (1927). *The gang: A study of 1,313 gangs in Chicago*. Chicago: University of Chicago Press.
- Thrasher, F. M. (2013). *The gang: A study of 1,313 gangs in Chicago* (2nd ed.). Chicago: University of Chicago Press.
- Tita, G. E., Cohen, J., & Engberg, J. (2005). An ecological study of the location of gang “set space.” *Social Problems*, 52, 272–299.
- Tita, G. E., & Radil, S. M. (2011). Spatializing the social networks of gangs to explore patterns of violence. *Journal of Quantitative Criminology*, 27(4), 521-545.
- Tita, G., Riley, K. G., Ridgeway, G., Grammich, C., Abrahamse, A. F., & Greenwood, P. W. (2003). *Reducing gun violence: results from an intervention in East Los Angeles*. Santa Monica, CA: Rand.

- Toivonen, R., Kovanen, L., Kivelä, M., Onnela, J. P., Saramä, J., & Kaski, K. (2009). A comparative study of social network models: Network evolution models and nodal attribute models. *Social Networks*, 31(4), 240-254.
- Totten, M. J., Schenker, D., & Abdul-Hussain, H. (2012). Arab spring or Islamist winter? Three views. *World Affairs*, 174(5), 23-42.
- Travers, J., & Milgram, S. (1969). An experimental study of the small world problem. *Sociometry*, 32(4), 425-443.
- Trump, D. (2017, July 28). *Remarks by President Trump to law enforcement officials on MS-13*. Whitehouse. Retrieved from <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-law-enforcement-officials-ms-13/>.
- Trump, D. (2018, May 16). *Remarks by President Trump at a California sanctuary state roundtable*. Whitehouse. Retrieved from <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-california-sanctuary-state-roundtable/>.
- Trump, D. (2019, May 16). *Remarks by President Trump on modernizing our immigration system for a stronger America*. Whitehouse. Retrieved from <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-modernizing-immigration-system-stronger-america/>.
- Twitter Help Center. (n.d.). *Guidelines for law enforcement: What is Twitter?* Retrieved from <https://help.twitter.com/en/rules-and-policies/twitter-law-enforcement-support#1>.
- United States of America v. Kelvin Melton, 5:14-CR-72-D-1 (E. D. North Carolina, 2014).
- United Gangs. (2020). Retrieved using the search function from <https://unitedgangs.com>.
- United Gangs. (2020). *Bounty Hunter Bloods (Watts)*. Retrieved from <https://unitedgangs.com/bounty-hunters/>.
- United Nations. (2004). United Nations Convention against transnational organized crime and the protocols thereto. New York, NY: Office on Drugs and Crime.
- United Nations. (2013). Global study on homicide 2013: Trends, contexts, data. Vienna, Austria: Office on Drugs and Crime.
- United States v. Aguirre et al. (1994). Indictment. Federal District Court, Central District of California, June.
- U.S. Army. (2016). *Live to ride: Soldiers encouraged to get smart on motorcycle culture*. Quantico, VA: Criminal Investigation Command. Retrieved from <https://www.cid.army.mil/assets/docs/press-releases/Livetoride.pdf>.

- U.S. Army Criminal Investigation Command. (2007). *Summary report gang activity assessment Jan 2004-Aug 2005*. Retrieved from https://www.governmentattic.org/docs/USArmyCICCommand_GangActivityAssessmt_2004-2005.pdf. Fort Belvoir, VA: Department of the Army.
- U.S. Department of Homeland Security. (2016). Written testimony of DHS Secretary Jeh Johnson for a House Committee on Homeland Security hearing titled “worldwide threats to the homeland: ISIS and the new wave of terror.” Retrieved from <https://www.dhs.gov/news/2016/07/14/written-testimony-dhs-secretary-jeh-johnson-house-committee-homeland-security>.
- U.S. Department of Justice. (1991). *Outlaw motorcycle gangs: USA overview*. State of California: Bureau of Organized Crime and Criminal Intelligence.
- U.S. Department of Justice. (2009). *United States Code, Title 18 – Crimes and criminal procedure*. Retrieved from <https://www.govinfo.gov/content/pkg/USCODE-2009-title18/html/USCODE-2009-title18-partI-chap113B-sec2331.htm>. Washington, DC: Government Publishing Office.
- U.S. Department of Justice. (2018). Gang Statistics. In the *Justice Manual* (Section 103 in the Criminal Resource Manual). Retrieved from <https://www.justice.gov/jm/criminal-resource-manual-103-gang-statistics>.
- U.S. Immigration and Customs. (2020). *Combating gangs*. Retrieved from <https://www.ice.gov/features/gangs>.
- U.S. Senate Committee on Homeland Security and Governmental Affairs. (2008). *Violent Islamist extremism, the internet, and the homegrown terrorist threat*. Washington, DC: US Government Printing Office.
- Utas, M. (2014). “Playing the game”: Gang-militia logics in war-torn Sierra Leone. In J. M. Hazen & D. Rodgers (Eds.), *European street gangs and troublesome youth groups* (171-191). Lanham, MD: Alta Mira Press.
- Valdez, A. (January 1, 2000). The Tiny Rascal Gang: Big trouble. *Police Magazine*. Retrieved from <https://www.policemag.com/338717/the-tiny-rascal-gang-big-trouble>.
- Valenzuela, J. M. (1988). *Jalabrava e’sel*. Mexico: El Colegio de la Frontera Norte.
- Van Creveld, M. (1991). *The transformation of war*. New York, NY: The Free Press.
- Van Dijck, J. (2013). *The culture of connectivity: A critical history of social media*. New York, NY: Oxford University Press.
- Van Gemert, F. (2005). Youth groups and gangs in Amsterdam: A pretest of the Eurogang expert

- survey. In S. H. Decker & F. M. Weerman (Eds.), *European street gangs and troublesome youth groups* (129-152). Lanham, MD: Alta Mira Press.
- Vargas, R. (2016). *Wounded city: Violent turf wars in a Chicago barrio*. New York, NY: Oxford University Press.
- Venkatesh, S. A. (1997). The social organization of street gang activity in an urban ghetto. *American Journal of Sociology*, *103*(1), 82-111.
- Venkatesh, S. A. (2000). *American project: The rise and fall of a modern ghetto*. Cambridge, MA: Harvard University Press.
- Venkatesh, S. A. (2014). The inevitable gang. In J. M. Hazen & D. Rodgers (Eds.), *Global gangs: Street violence across the world* (281-287). Minneapolis, MN: University of Minnesota Press.
- Venkatesh, S. A., & Levitt, S. D. (2000). "Are we a family or a business?" History and disjuncture in the urban American street gang. *Theory and Society*, *29*(4), 427-462.
- Vigil, J. D. (1988). *Barrio gangs: Street life and identity in Southern California*. Austin, TX: University of Texas Press.
- Vigil, J. D. (1999). Streets and schools: How educators can help Chicano marginalized gang youth. *Harvard Educational Review*, *69*(3), 270-288.
- Vigil, J. D. (2002). *Rainbow of gangs*. Austin, TX: University of Texas Press.
- Vigil, J. D. (2003). Urban violence and street gangs. *Annual Review of Anthropology*, *32*, 225-242.
- Vigil, J. D. (2004). Gangs and group membership: Implications for schooling. In M.A. Gibson, P. Gándara, & J. P. Koyama (Eds.), *School connections: U.S. Mexican youth, peers, and school achievement* (pp. 63-86). New York, NY: Teachers College Press.
- Virginia State Police. (2011). *Gang Reference Sheets*. Richmond, VA: Virginia Fusion Center.
- Way, J., & Muggah, R. (2016). Charting out the digital ecosystem of gangs in the U.S. and Mexico. Retrieved from <https://smallwarsjournal.com/jrnl/art/charting-out-the-digital-ecosystem-of-gangs-in-the-us-and-mexico>.
- Weisheit, R. A., & Wells, L. E. (2001). *Gangs in rural America* (Report No. 190228). Washington, DC: US Department of Justice.
- Wijeratne, S., Sheth, A., Bhatt, S., Balasuriya, L., Al-Olimat, H. S., Gaur, M., Yazdavar, A. H., & Thirunarayan, K. (2018). Feature engineering for Twitter-based Applications. In G. Dong & H. Liu (Eds.), *Feature Engineering for Machine Learning and Data Analytics* (359-394).

Boca Raton, FL: Taylor & Francis.

- Wijeratne, S., Doran, D., Sheth, A., & Dustin, J. (2015). Analyzing the social media footprint of street gangs. *Proceedings of the IEEE International Conference on Intelligence and Security Informatics (ISI)*. Baltimore, MD: IEEE Publishing.
- Williams, P. (2001). Transnational criminal networks. J. Arquilla & D. Ronfeldt (Eds.), *Networks and netwars: The future of terror, crime, and militancy* (61-97). Rand Corporation.
- Wilson, G. I., & Sullivan, J. P. (2007). On gangs, crime, and terrorism. *Defense and the National Interest*, 28, 1-19.
- Wolf, S. (2012). Mara Salvatrucha: The most dangerous street gang in the Americas? *Latin American Politics and Society*, 54(1), 65-99.
- Xu, J., & Chen, H. (2005). Criminal network analysis and visualization. *Communications of the ACM*, 48(6), 100-107.

APPENDIX A
CENTRALITY MEASURES

Baseline Model					
Degree Centrality					
Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Crips	1	73	4.58	Street	US
Bloods	2	71	4.43	Street	US
Sureños	3	45	2.41	Street	US
Aryan Brotherhood	4	37	1.78	Prison	US
Latin Kings	5	36	1.71	Street	US
Black P Stones	6	35	1.63	Street	US
Gangster Disciples	6	35	1.63	Street	US
Aryan Nation	7	34	1.55	Street	US
Norteños	7	34	1.55	Street	US
Black Disciples	8	33	1.47	Street	US
Black Guerrilla Family	8	33	1.47	Prison	US
MS-13	9	31	1.32	Street	El Salvador
Sinaloa Cartel	10	29	1.16	Cartel	Mexico
Zoe Pound	11	28	1.08	Street	Haiti
Folk Nation	12	26	0.93	Street	US
Peckerwood	12	26	0.93	Street	US
People Nation	12	26	0.93	Street	US
Mexican Mafia	13	25	0.85	Prison	US
Aryan Circle	14	24	0.77	Prison	US
La Raza	14	24	0.77	Street	Mexico
Traveling Vice Lords	14	24	0.77	Street	US
Nazi Low Riders	15	23	0.70	Prison	US
Vice Lords	15	23	0.70	Street	US
Conservative Vice Lords	16	22	0.62	Street	US
Neo Nazi	16	22	0.62	Street	UK
White Power	16	22	0.62	Street	US
White Supremacists	16	22	0.62	Street	US
Zetas Cartel	16	22	0.62	Cartel	Mexico
Gulf Cartel	17	21	0.54	Cartel	Mexico
Skinheads	17	21	0.54	Street	UK
White Aryan Resistance	17	21	0.54	Street	US
Black Panther	18	20	0.46	Street	US
Hammerskins	18	20	0.46	Street	US
Supreme White Power	18	20	0.46	Prison	US
Four Corner Hustlers	19	19	0.38	Street	US
Imperial Gangster Disciples	19	19	0.38	Street	Puerto Rico

Insane Unknowns	19	19	0.38	Street	Puerto Rico
Latin Counts	19	19	0.38	Street	Mexico
Piru	19	19	0.38	Street	US
Tijuana Cartel	19	19	0.38	Cartel	Mexico
Insane Gangster Disciple	20	18	0.31	Street	US
Maniac Latin Disciples	20	18	0.31	Street	US
Mexikanemi	20	18	0.31	Prison	US
Nuestra Familia	20	18	0.31	Prison	US
Satans Disciples	20	18	0.31	Street	US
Hells Angels	21	17	0.23	OMG	US
Five Percenter	22	16	0.15	Street	US
La Familia Michoacana Cartel	22	16	0.15	Cartel	Mexico
Rollin 60s Crips	22	16	0.15	Street	US
Juarez Cartel	23	15	0.07	Cartel	Mexico
Vatos Locos	23	15	0.07	Street	Mexico
18th St	24	14	0.00	Street	El Salvador
Juggalos	24	14	0.00	Street	US
Outlaws MC	24	14	0.00	OMG	US
Florencia 13	25	13	-0.08	Street	US
Rollin 20s Crips	25	13	-0.08	Street	US
Border Brothers	26	12	-0.16	Prison	Mexico
Rollin 30s Crips	26	12	-0.16	Street	Belize
Rollin 40s Crips	26	12	-0.16	Street	US
Spanish Cobras	26	12	-0.16	Street	Puerto Rico
Mongols MC	27	11	-0.24	OMG	US
Texas Syndicate	27	11	-0.24	Prison	Mexico
Trinitarios	27	11	-0.24	Street	Dominican Republic
Bandidos MC	28	10	-0.31	OMG	US
Hoover Gangsters	28	10	-0.31	Street	US
Ñetas	28	10	-0.31	Prison	Puerto Rico
Pagans MC	28	10	-0.31	OMG	US
Sex Money Murder	28	10	-0.31	Street	US
Desperados MC	29	9	-0.39	OMG	NA
Red Devils MC	29	9	-0.39	OMG	Canada
Tiny Rascal Gang	29	9	-0.39	Street	Cambodia
Vagos MC	29	9	-0.39	OMG	US
BelLey Cartel	30	8	-0.47	Cartel	Mexico
Bounty Hunter Bloods	30	8	-0.47	Street	US
Dead Man Incorporated	30	8	-0.47	Prison	US
Grape Street Crips	30	8	-0.47	Street	US
JalNewGen Cartel	30	8	-0.47	Cartel	Mexico
Shotgun Crips	30	8	-0.47	Street	US

Asian Boyz (Crips)	31	7	-0.55	Street	Cambodia
Black Angels	31	7	-0.55	Street	US
Black Pistons MC	31	7	-0.55	OMG	Germany
Dirty White Boys	31	7	-0.55	Prison	US
Sons of Samoa	31	7	-0.55	Street	Samoa
Sons of Silence MC	31	7	-0.55	OMG	US
Tree Top Piru	31	7	-0.55	Street	US
Athens Park Bloods	32	6	-0.63	Street	US
El Forastero MC	32	6	-0.63	OMG	US
Native Mob	33	5	-0.70	Street	US
Raza Unida	33	5	-0.70	Prison	US
Six Deuce Brim	34	4	-0.78	Street	US
Texas Chicano Brotherhood	34	4	-0.78	Prison	US
Renegades MC	35	3	-0.86	OMG	US
Tango Blast	35	3	-0.86	Prison	US
Warlocks MC	35	3	-0.86	OMG	US
Brown Pride	36	2	-0.94	Street	NA
Grupo 27	36	2	-0.94	Prison	Puerto Rico
Hilltop Crips	36	2	-0.94	Street	US
Money Over Bitches	36	2	-0.94	Street	US
Nine Trey Gangster Blood	36	2	-0.94	Street	US
Wheels of Soul MC	36	2	-0.94	OMG	US
Avengers MC	37	1	-1.01	OMG	US
Devils Disciples MC	37	1	-1.01	OMG	US
Diablos MC	37	1	-1.01	OMG	US
Grupo 25	37	1	-1.01	Prison	Puerto Rico
Iron Horsemen MC	37	1	-1.01	OMG	US
Outcast MC	37	1	-1.01	OMG	US
Prison Motorcycle Brotherhood	37	1	-1.01	Prison	US
Rebels 13 MC	37	1	-1.01	OMG	Australia
Rough Riders MC	37	1	-1.01	OMG	US
Tribe MC	37	1	-1.01	OMG	NA
Bandits	38	0	-1.09	Street	NA
Click Clack	38	0	-1.09	Street	NA
Code Red	38	0	-1.09	Street	NA
Hard Times	38	0	-1.09	Street	NA
Midnight Riders MC	38	0	-1.09	OMG	NA
Oriental Boy Soldiers	38	0	-1.09	Street	NA
Russian Gangs	38	0	-1.09	Street	Russia
Sin City Deciples MC	38	0	-1.09	OMG	US
Somali Gangs	38	0	-1.09	Street	Somalia
The Cool Kids	38	0	-1.09	Street	NA

Zulus MC	38	0	-1.09	OMG	US
Closeness Centrality					
Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Bloods	1	0.000668	0.56	Street	US
Crips	1	0.000668	0.56	Street	US
Aryan Brotherhood	2	0.000658	0.50	Prison	US
Aryan Nation	3	0.000657	0.49	Street	US
Sureños	4	0.000656	0.49	Street	US
Black Guerrilla Family	5	0.000651	0.46	Prison	US
Mexican Mafia	5	0.000651	0.46	Prison	US
MS-13	5	0.000651	0.46	Street	El Salvador
Norteños	5	0.000651	0.46	Street	US
Sinaloa Cartel	5	0.000651	0.46	Cartel	Mexico
Black P Stones	6	0.000649	0.44	Street	US
Gulf Cartel	6	0.000649	0.44	Cartel	Mexico
Latin Kings	6	0.000649	0.44	Street	US
Nazi Low Riders	6	0.000649	0.44	Prison	US
Gangster Disciples	7	0.000647	0.43	Street	US
Peckerwood	8	0.000645	0.42	Street	US
Aryan Circle	9	0.000644	0.41	Prison	US
Juarez Cartel	9	0.000644	0.41	Cartel	Mexico
La Familia Michoacana Cartel	9	0.000644	0.41	Cartel	Mexico
Traveling Vice Lords	9	0.000644	0.41	Street	US
Neo Nazi	10	0.000643	0.41	Street	UK
Nuestra Familia	10	0.000643	0.41	Prison	US
White Power	10	0.000643	0.41	Street	US
Zetas Cartel	10	0.000643	0.41	Cartel	Mexico
Zoe Pound	10	0.000643	0.41	Street	Haiti
La Raza	11	0.000642	0.40	Street	Mexico
Skinheads	11	0.000642	0.40	Street	UK
Supreme White Power	11	0.000642	0.40	Prison	US
Tijuana Cartel	11	0.000642	0.40	Cartel	Mexico
White Aryan Resistance	11	0.000642	0.40	Street	US
White Supremacists	11	0.000642	0.40	Street	US
Black Panther	12	0.000641	0.39	Street	US
Black Disciples	13	0.000640	0.39	Street	US
Juggalos	13	0.000640	0.39	Street	US
18th St	14	0.000639	0.38	Street	El Salvador
Five Percenters	14	0.000639	0.38	Street	US
Conservative Vice Lords	15	0.000638	0.38	Street	US
Florencia 13	15	0.000638	0.38	Street	US

Mexikanemi	15	0.000638	0.38	Prison	US
Rollin 60s Crips	15	0.000638	0.38	Street	US
Folk Nation	16	0.000637	0.37	Street	US
Hammerskins	16	0.000637	0.37	Street	US
People Nation	16	0.000637	0.37	Street	US
Border Brothers	17	0.000635	0.36	Prison	Mexico
JalNewGen Cartel	17	0.000635	0.36	Cartel	Mexico
Tiny Rascal Gang	17	0.000635	0.36	Street	Cambodia
Vice Lords	17	0.000635	0.36	Street	US
Black Angels	18	0.000634	0.35	Street	US
Hells Angels	18	0.000634	0.35	OMG	US
Piru	18	0.000634	0.35	Street	US
Four Corner Hustlers	19	0.000633	0.35	Street	US
Imperial Gangster Disciples	19	0.000633	0.35	Street	Puerto Rico
Insane Gangster Disciple	19	0.000633	0.35	Street	US
Insane Unknowns	19	0.000633	0.35	Street	Puerto Rico
Latin Counts	19	0.000633	0.35	Street	Mexico
Maniac Latin Disciples	19	0.000633	0.35	Street	US
Satans Disciples	19	0.000633	0.35	Street	US
Vatos Locos	19	0.000633	0.35	Street	Mexico
Trinitarios	20	0.000632	0.34	Street	Dominican Republic
Hoover Gangsters	21	0.000631	0.33	Street	US
Ñetas	21	0.000631	0.33	Prison	Puerto Rico
Sex Money Murder	22	0.000630	0.33	Street	US
Spanish Cobras	22	0.000630	0.33	Street	Puerto Rico
Asian Boyz (Crips)	23	0.000629	0.32	Street	Cambodia
Outlaws MC	23	0.000629	0.32	OMG	US
Rollin 20s Crips	23	0.000629	0.32	Street	US
Rollin 30s Crips	24	0.000628	0.31	Street	Belize
Rollin 40s Crips	24	0.000628	0.31	Street	US
Bounty Hunter Bloods	25	0.000627	0.31	Street	US
Grape Street Crips	25	0.000627	0.31	Street	US
Shotgun Crips	25	0.000627	0.31	Street	US
Texas Syndicate	25	0.000627	0.31	Prison	Mexico
Vagos MC	25	0.000627	0.31	OMG	US
Athens Park Bloods	26	0.000626	0.30	Street	US
Dead Man Incorporated	26	0.000626	0.30	Prison	US
Sons of Samoa	26	0.000626	0.30	Street	Samoa
Tree Top Piru	26	0.000626	0.30	Street	US
BelLey Cartel	27	0.000625	0.30	Cartel	Mexico
Native Mob	27	0.000625	0.30	Street	US
Six Deuce Brim	27	0.000625	0.30	Street	US

Hilltop Crips	28	0.000624	0.29	Street	US
Money Over Bitches	28	0.000624	0.29	Street	US
Nine Trey Gangster Blood	28	0.000624	0.29	Street	US
Pagans MC	28	0.000624	0.29	OMG	US
Bandidos MC	29	0.000622	0.28	OMG	US
Dirty White Boys	29	0.000622	0.28	Prison	US
Raza Unida	29	0.000622	0.28	Prison	US
Sons of Silence MC	29	0.000622	0.28	OMG	US
Mongols MC	30	0.000616	0.24	OMG	US
Brown Pride	31	0.000614	0.23	Street	NA
Texas Chicano Brotherhood	32	0.000609	0.20	Prison	US
Desperados MC	33	0.000603	0.16	OMG	NA
Red Devils MC	33	0.000603	0.16	OMG	Canada
El Forastero MC	34	0.000601	0.15	OMG	US
Black Pistons MC	35	0.000599	0.14	OMG	Germany
Tango Blast	36	0.000598	0.13	Prison	US
Renegades MC	37	0.000597	0.12	OMG	US
Devils Disciples MC	38	0.000593	0.10	OMG	US
Grupo 27	39	0.000592	0.09	Prison	Puerto Rico
Warlocks MC	39	0.000592	0.09	OMG	US
Diablos MC	40	0.000589	0.07	OMG	US
Iron Horsemen MC	40	0.000589	0.07	OMG	US
Prison Motorcycle Brotherhood	40	0.000589	0.07	Prison	US
Avengers MC	41	0.000585	0.05	OMG	US
Rough Riders MC	41	0.000585	0.05	OMG	US
Tribe MC	41	0.000585	0.05	OMG	NA
Wheels of Soul MC	42	0.000583	0.04	OMG	US
Rebels 13 MC	43	0.000582	0.03	OMG	Australia
Grupo 25	44	0.000556	-0.13	Prison	Puerto Rico
Outcast MC	45	0.000549	-0.17	OMG	US
Bandits	46	0.000069	-3.14	Street	NA
Click Clack	46	0.000069	-3.14	Street	NA
Code Red	46	0.000069	-3.14	Street	NA
Hard Times	46	0.000069	-3.14	Street	NA
Midnight Riders MC	46	0.000069	-3.14	OMG	NA
Oriental Boy Soldiers	46	0.000069	-3.14	Street	NA
Russian Gangs	46	0.000069	-3.14	Street	Russia
Sin City Deciples MC	46	0.000069	-3.14	OMG	US
Somali Gangs	46	0.000069	-3.14	Street	Somalia
The Cool Kids	46	0.000069	-3.14	Street	NA
Zulus MC	46	0.000069	-3.14	OMG	US

Betweenness Centrality					
Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Crips	1	1107.86	6.10	Street	US
Bloods	2	984.21	5.37	Street	US
Aryan Brotherhood	3	628.69	3.28	Prison	US
Aryan Nation	4	572.02	2.95	Street	US
Outlaws MC	5	503.26	2.54	OMG	US
Pagans MC	6	379.49	1.82	OMG	US
Bandidos MC	7	371.62	1.77	OMG	US
Hells Angels	8	354.91	1.67	OMG	US
Sureños	9	256.70	1.10	Street	US
Sinaloa Cartel	10	243.29	1.02	Cartel	Mexico
Gulf Cartel	11	237.80	0.98	Cartel	Mexico
Mexican Mafia	12	224.05	0.90	Prison	US
Ñetas	13	214.79	0.85	Prison	Puerto Rico
Latin Kings	14	191.40	0.71	Street	US
Zetas Cartel	15	190.54	0.71	Cartel	Mexico
MS-13	16	188.37	0.69	Street	El Salvador
Black P Stones	17	136.35	0.39	Street	US
Tijuana Cartel	18	123.95	0.32	Cartel	Mexico
Mexikanemi	19	114.94	0.26	Prison	US
Grupo 27	20	108.00	0.22	Prison	Puerto Rico
Wheels of Soul MC	20	108.00	0.22	OMG	US
Black Guerrilla Family	21	91.77	0.13	Prison	US
Zoe Pound	22	91.22	0.12	Street	Haiti
Norteños	23	88.92	0.11	Street	US
Gangster Disciples	24	85.87	0.09	Street	US
Juarez Cartel	25	80.80	0.06	Cartel	Mexico
Nazi Low Riders	26	74.73	0.03	Prison	US
Vagos MC	27	58.49	-0.07	OMG	US
Traveling Vice Lords	28	57.24	-0.08	Street	US
Black Disciples	29	46.14	-0.14	Street	US
Texas Syndicate	30	44.07	-0.15	Prison	Mexico
Mongols MC	31	37.79	-0.19	OMG	US
Piru	32	33.01	-0.22	Street	US
La Raza	33	32.48	-0.22	Street	Mexico
Sons of Silence MC	34	31.71	-0.23	OMG	US
Rollin 60s Crips	35	30.89	-0.23	Street	US
Folk Nation	36	29.64	-0.24	Street	US
People Nation	36	29.64	-0.24	Street	US
Conservative Vice Lords	37	27.66	-0.25	Street	US
Aryan Circle	38	26.70	-0.26	Prison	US

Peckerwood	39	24.40	-0.27	Street	US
Nuestra Familia	40	19.73	-0.30	Prison	US
Desperados MC	41	17.83	-0.31	OMG	NA
Red Devils MC	41	17.83	-0.31	OMG	Canada
Juggalos	42	17.23	-0.31	Street	US
Supreme White Power	43	12.74	-0.34	Prison	US
La Familia Michoacana Cartel	44	11.83	-0.34	Cartel	Mexico
Black Panther	45	11.50	-0.35	Street	US
Florencia 13	46	9.35	-0.36	Street	US
Vatos Locos	47	7.71	-0.37	Street	Mexico
Vice Lords	48	7.53	-0.37	Street	US
Tiny Rascal Gang	49	7.26	-0.37	Street	Cambodia
Border Brothers	50	7.20	-0.37	Prison	Mexico
18th St	51	6.61	-0.37	Street	El Salvador
El Forastero MC	52	6.55	-0.37	OMG	US
Rollin 20s Crips	53	6.30	-0.38	Street	US
Black Pistons MC	54	5.81	-0.38	OMG	Germany
Hoover Gangsters	55	5.04	-0.38	Street	US
Neo Nazi	56	4.95	-0.38	Street	UK
White Power	56	4.95	-0.38	Street	US
White Supremacists	56	4.95	-0.38	Street	US
Skinheads	57	4.46	-0.39	Street	UK
Rollin 40s Crips	58	4.35	-0.39	Street	US
Five Percenter	59	4.19	-0.39	Street	US
White Aryan Resistance	60	3.63	-0.39	Street	US
Rollin 30s Crips	61	3.28	-0.39	Street	Belize
Warlocks MC	62	3.09	-0.39	OMG	US
Trinitarios	63	2.82	-0.40	Street	Dominican Republic
Texas Chicano Brotherhood	64	2.47	-0.40	Prison	US
Hammerskins	65	2.38	-0.40	Street	US
BelLey Cartel	66	2.36	-0.40	Cartel	Mexico
Grape Street Crips	67	1.98	-0.40	Street	US
JalNewGen Cartel	68	1.86	-0.40	Cartel	Mexico
Imperial Gangster Disciples	69	1.51	-0.40	Street	Puerto Rico
Sex Money Murder	70	1.11	-0.41	Street	US
Shotgun Crips	71	1.03	-0.41	Street	US
Asian Boyz (Crips)	72	0.90	-0.41	Street	Cambodia
Athens Park Bloods	73	0.74	-0.41	Street	US
Bounty Hunter Bloods	74	0.70	-0.41	Street	US
Four Corner Hustlers	75	0.58	-0.41	Street	US
Insane Unknowns	75	0.58	-0.41	Street	Puerto Rico
Latin Counts	75	0.58	-0.41	Street	Mexico

Sons of Samoa	76	0.51	-0.41	Street	Samoa
Raza Unida	77	0.32	-0.41	Prison	US
Dirty White Boys	78	0.18	-0.41	Prison	US
Black Angels	79	0.10	-0.41	Street	US
Avengers MC	80	0.00	-0.41	OMG	US
Bandits	80	0.00	-0.41	Street	NA
Brown Pride	80	0.00	-0.41	Street	NA
Click Clack	80	0.00	-0.41	Street	NA
Code Red	80	0.00	-0.41	Street	NA
Dead Man Incorporated	80	0.00	-0.41	Prison	US
Devils Disciples MC	80	0.00	-0.41	OMG	US
Diablos MC	80	0.00	-0.41	OMG	US
Grupo 25	80	0.00	-0.41	Prison	Puerto Rico
Hard Times	80	0.00	-0.41	Street	NA
Hilltop Crips	80	0.00	-0.41	Street	US
Insane Gangster Disciple	80	0.00	-0.41	Street	US
Iron Horsemen MC	80	0.00	-0.41	OMG	US
Maniac Latin Disciples	80	0.00	-0.41	Street	US
Midnight Riders MC	80	0.00	-0.41	OMG	NA
Money Over Bitches	80	0.00	-0.41	Street	US
Native Mob	80	0.00	-0.41	Street	US
Nine Trey Gangster Blood	80	0.00	-0.41	Street	US
Oriental Boy Soldiers	80	0.00	-0.41	Street	NA
Outcast MC	80	0.00	-0.41	OMG	US
Prison Motorcycle Brotherhood	80	0.00	-0.41	Prison	US
Rebels 13 MC	80	0.00	-0.41	OMG	Australia
Renegades MC	80	0.00	-0.41	OMG	US
Rough Riders MC	80	0.00	-0.41	OMG	US
Russian Gangs	80	0.00	-0.41	Street	Russia
Satans Disciples	80	0.00	-0.41	Street	US
Sin City Deciples MC	80	0.00	-0.41	OMG	US
Six Deuce Brim	80	0.00	-0.41	Street	US
Somali Gangs	80	0.00	-0.41	Street	Somalia
Spanish Cobras	80	0.00	-0.41	Street	Puerto Rico
Tango Blast	80	0.00	-0.41	Prison	US
The Cool Kids	80	0.00	-0.41	Street	NA
Tree Top Piru	80	0.00	-0.41	Street	US
Tribe MC	80	0.00	-0.41	OMG	NA
Zulus MC	80	0.00	-0.41	OMG	US
PageRank Centrality					
Gang	Rank	Centrality Score	Zscore	Gang Type	Country

Crips	1	0.0365	4.79	Street	US
Bloods	2	0.0353	4.59	Street	US
Sureños	3	0.022	2.33	Street	US
Aryan Brotherhood	4	0.0198	1.96	Prison	US
Aryan Nation	5	0.0184	1.72	Street	US
Latin Kings	6	0.017	1.48	Street	US
Outlaws MC	7	0.0165	1.40	OMG	US
MS-13	8	0.0164	1.38	Street	El Salvador
Norteños	8	0.0164	1.38	Street	US
Black P Stones	9	0.0163	1.36	Street	US
Gangster Disciples	10	0.016	1.31	Street	US
Black Guerrilla Family	11	0.0158	1.28	Prison	US
Hells Angels	11	0.0158	1.28	OMG	US
Sinaloa Cartel	12	0.0155	1.23	Cartel	Mexico
Black Disciples	13	0.015	1.14	Street	US
Mexican Mafia	14	0.0136	0.91	Prison	US
Zoe Pound	15	0.0134	0.87	Street	Haiti
Pagans MC	16	0.0132	0.84	OMG	US
Folk Nation	17	0.0125	0.72	Street	US
People Nation	17	0.0125	0.72	Street	US
Peckerwood	18	0.0124	0.70	Street	US
Gulf Cartel	19	0.012	0.64	Cartel	Mexico
Zetas Cartel	19	0.012	0.64	Cartel	Mexico
Aryan Circle	20	0.0117	0.58	Prison	US
Nazi Low Riders	21	0.0116	0.57	Prison	US
Bandidos MC	22	0.0114	0.53	OMG	US
La Raza	23	0.0113	0.52	Street	Mexico
Traveling Vice Lords	23	0.0113	0.52	Street	US
Tijuana Cartel	24	0.0111	0.48	Cartel	Mexico
Piru	25	0.011	0.47	Street	US
Mongols MC	26	0.0109	0.45	OMG	US
Vice Lords	27	0.0108	0.43	Street	US
Conservative Vice Lords	28	0.0105	0.38	Street	US
Mexikanemi	28	0.0105	0.38	Prison	US
Neo Nazi	29	0.0104	0.36	Street	UK
White Power	29	0.0104	0.36	Street	US
White Supremacists	29	0.0104	0.36	Street	US
Skinheads	30	0.01	0.30	Street	UK
White Aryan Resistance	30	0.01	0.30	Street	US
Black Panther	31	0.0097	0.24	Street	US
Supreme White Power	31	0.0097	0.24	Prison	US
Desperados MC	32	0.0095	0.21	OMG	NA
Hammerskins	32	0.0095	0.21	Street	US

Nuestra Familia	32	0.0095	0.21	Prison	US
Red Devils MC	32	0.0095	0.21	OMG	Canada
Rollin 60s Crips	33	0.0094	0.19	Street	US
Four Corner Hustlers	34	0.0091	0.14	Street	US
Insane Unknowns	34	0.0091	0.14	Street	Puerto Rico
Latin Counts	34	0.0091	0.14	Street	Mexico
Imperial Gangster Disciples	35	0.009	0.13	Street	Puerto Rico
Juarez Cartel	36	0.0088	0.09	Cartel	Mexico
Insane Gangster Disciple	37	0.0086	0.06	Street	US
La Familia Michoacana Cartel	37	0.0086	0.06	Cartel	Mexico
Maniac Latin Disciples	37	0.0086	0.06	Street	US
Satans Disciples	37	0.0086	0.06	Street	US
Black Pistons MC	38	0.0082	-0.01	OMG	Germany
Rollin 20s Crips	38	0.0082	-0.01	Street	US
Five Percenters	39	0.0081	-0.03	Street	US
Vatos Locos	40	0.0078	-0.08	Street	Mexico
18th St	41	0.0076	-0.11	Street	El Salvador
Rollin 40s Crips	41	0.0076	-0.11	Street	US
Vagos MC	41	0.0076	-0.11	OMG	US
Rollin 30s Crips	42	0.0075	-0.13	Street	Belize
Florencia 13	43	0.0074	-0.15	Street	US
Texas Syndicate	43	0.0074	-0.15	Prison	Mexico
Juggalos	44	0.0073	-0.16	Street	US
Ñetas	44	0.0073	-0.16	Prison	Puerto Rico
Border Brothers	45	0.0069	-0.23	Prison	Mexico
Sons of Silence MC	46	0.0066	-0.28	OMG	US
El Forastero MC	47	0.0065	-0.30	OMG	US
Hoover Gangsters	48	0.0063	-0.33	Street	US
Spanish Cobras	49	0.0062	-0.35	Street	Puerto Rico
Trinitarios	49	0.0062	-0.35	Street	Dominican Republic
Tiny Rascal Gang	50	0.0056	-0.45	Street	Cambodia
Bounty Hunter Bloods	51	0.0054	-0.48	Street	US
Sex Money Murder	51	0.0054	-0.48	Street	US
Shotgun Crips	51	0.0054	-0.48	Street	US
Wheels of Soul MC	51	0.0054	-0.48	OMG	US
Grape Street Crips	52	0.0052	-0.52	Street	US
BelLey Cartel	53	0.0051	-0.54	Cartel	Mexico
JalNewGen Cartel	53	0.0051	-0.54	Cartel	Mexico
Dead Man Incorporated	54	0.0049	-0.57	Prison	US
Grupo 27	54	0.0049	-0.57	Prison	Puerto Rico
Asian Boyz (Crips)	55	0.0048	-0.59	Street	Cambodia
Sons of Samoa	55	0.0048	-0.59	Street	Samoa

Tree Top Piru	55	0.0048	-0.59	Street	US
Warlocks MC	56	0.0045	-0.64	OMG	US
Black Angels	57	0.0043	-0.67	Street	US
Dirty White Boys	57	0.0043	-0.67	Prison	US
Athens Park Bloods	58	0.0042	-0.69	Street	US
Renegades MC	59	0.0041	-0.71	OMG	US
Raza Unida	60	0.0038	-0.76	Prison	US
Texas Chicano Brotherhood	60	0.0038	-0.76	Prison	US
Outcast MC	61	0.0036	-0.79	OMG	US
Grupo 25	62	0.0034	-0.82	Prison	Puerto Rico
Native Mob	62	0.0034	-0.82	Street	US
Six Deuce Brim	63	0.0032	-0.86	Street	US
Tango Blast	63	0.0032	-0.86	Prison	US
Avengers MC	64	0.0025	-0.98	OMG	US
Rough Riders MC	64	0.0025	-0.98	OMG	US
Tribe MC	64	0.0025	-0.98	OMG	NA
Diablos MC	65	0.0023	-1.01	OMG	US
Iron Horsemen MC	65	0.0023	-1.01	OMG	US
Prison Motorcycle Brotherhood	65	0.0023	-1.01	Prison	US
Rebels 13 MC	65	0.0023	-1.01	OMG	Australia
Brown Pride	66	0.0022	-1.03	Street	NA
Hilltop Crips	66	0.0022	-1.03	Street	US
Money Over Bitches	66	0.0022	-1.03	Street	US
Nine Trey Gangster Blood	66	0.0022	-1.03	Street	US
Devils Disciples MC	67	0.0021	-1.04	OMG	US
Bandits	68	0.0013	-1.18	Street	NA
Click Clack	68	0.0013	-1.18	Street	NA
Code Red	68	0.0013	-1.18	Street	NA
Hard Times	68	0.0013	-1.18	Street	NA
Midnight Riders MC	68	0.0013	-1.18	OMG	NA
Oriental Boy Soldiers	68	0.0013	-1.18	Street	NA
Russian Gangs	68	0.0013	-1.18	Street	Russia
Sin City Deciples MC	68	0.0013	-1.18	OMG	US
Somali Gangs	68	0.0013	-1.18	Street	Somalia
The Cool Kids	68	0.0013	-1.18	Street	NA
Zulus MC	68	0.0013	-1.18	OMG	US

Eigenvector Centrality

Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Crips	1	1.0000	3.45	Street	US
Bloods	2	0.9931	3.41	Street	US
Sureños	3	0.6894	2.04	Street	US

Gangster Disciples	4	0.6355	1.80	Street	US
Black P Stones	5	0.6254	1.76	Street	US
Latin Kings	6	0.6156	1.71	Street	US
Black Disciples	7	0.6128	1.70	Street	US
Black Guerrilla Family	8	0.5959	1.62	Prison	US
Norteños	9	0.5929	1.61	Street	US
Aryan Brotherhood	10	0.5851	1.57	Prison	US
Aryan Nation	11	0.5550	1.44	Street	US
Zoe Pound	12	0.5404	1.37	Street	Haiti
Peckerwood	13	0.5218	1.29	Street	US
Neo Nazi	14	0.4831	1.11	Street	UK
White Power	14	0.4831	1.11	Street	US
White Supremacists	14	0.4831	1.11	Street	US
Traveling Vice Lords	15	0.4788	1.09	Street	US
Sinaloa Cartel	16	0.4694	1.05	Cartel	Mexico
Skinheads	17	0.4660	1.04	Street	UK
La Raza	18	0.4627	1.02	Street	Mexico
White Aryan Resistance	19	0.4622	1.02	Street	US
Aryan Circle	20	0.4554	0.99	Prison	US
MS-13	21	0.4551	0.99	Street	El Salvador
Nazi Low Riders	22	0.4517	0.97	Prison	US
Folk Nation	23	0.4492	0.96	Street	US
People Nation	23	0.4492	0.96	Street	US
Hammerskins	24	0.4401	0.92	Street	US
Vice Lords	25	0.4316	0.88	Street	US
Supreme White Power	26	0.4293	0.87	Prison	US
Black Panther	27	0.4194	0.83	Street	US
Conservative Vice Lords	28	0.4093	0.78	Street	US
Mexican Mafia	29	0.3910	0.70	Prison	US
Imperial Gangster Disciples	30	0.3890	0.69	Street	Puerto Rico
Four Corner Hustlers	31	0.3784	0.64	Street	US
Insane Unknowns	31	0.3784	0.64	Street	Puerto Rico
Latin Counts	31	0.3784	0.64	Street	Mexico
Zetas Cartel	32	0.3723	0.61	Cartel	Mexico
Insane Gangster Disciple	33	0.3687	0.60	Street	US
Maniac Latin Disciples	33	0.3687	0.60	Street	US
Satans Disciples	33	0.3687	0.60	Street	US
Gulf Cartel	34	0.3525	0.52	Cartel	Mexico
Nuestra Familia	35	0.3385	0.46	Prison	US
Vatos Locos	36	0.3170	0.36	Street	Mexico
Juggalos	37	0.3163	0.36	Street	US
La Familia Michoacana Cartel	38	0.3118	0.34	Cartel	Mexico
Five Percenters	39	0.3112	0.34	Street	US

18th St	40	0.2720	0.16	Street	El Salvador
Mexikanemi	41	0.2599	0.11	Prison	US
Spanish Cobras	42	0.2577	0.10	Street	Puerto Rico
Piru	43	0.2521	0.07	Street	US
Trinitarios	44	0.2465	0.05	Street	Dominican Republic
Tijuana Cartel	45	0.2451	0.04	Cartel	Mexico
Sex Money Murder	46	0.2414	0.02	Street	US
Juarez Cartel	47	0.2367	0.00	Cartel	Mexico
Florencia 13	48	0.2322	-0.02	Street	US
Border Brothers	49	0.2272	-0.04	Prison	Mexico
Rollin 60s Crips	50	0.2194	-0.08	Street	US
Ñetas	51	0.1985	-0.17	Prison	Puerto Rico
Black Angels	52	0.1845	-0.23	Street	US
Tiny Rascal Gang	53	0.1774	-0.27	Street	Cambodia
Hoover Gangsters	54	0.1587	-0.35	Street	US
Rollin 30s Crips	55	0.1575	-0.36	Street	Belize
Rollin 40s Crips	56	0.1562	-0.36	Street	US
Dead Man Incorporated	57	0.1529	-0.38	Prison	US
Rollin 20s Crips	58	0.1451	-0.41	Street	US
Texas Syndicate	59	0.1396	-0.44	Prison	Mexico
JalNewGen Cartel	60	0.1358	-0.45	Cartel	Mexico
Dirty White Boys	61	0.1325	-0.47	Prison	US
Asian Boyz (Crips)	62	0.1319	-0.47	Street	Cambodia
Grape Street Crips	63	0.1267	-0.49	Street	US
Native Mob	64	0.1231	-0.51	Street	US
Athens Park Bloods	65	0.1215	-0.52	Street	US
Bounty Hunter Bloods	66	0.1191	-0.53	Street	US
Shotgun Crips	67	0.1155	-0.55	Street	US
Tree Top Piru	68	0.1144	-0.55	Street	US
Sons of Samoa	69	0.1142	-0.55	Street	Samoa
BelLey Cartel	70	0.1116	-0.56	Cartel	Mexico
Hells Angels	71	0.1057	-0.59	OMG	US
Six Deuce Brim	72	0.0939	-0.64	Street	US
Vagos MC	73	0.0797	-0.71	OMG	US
Hilltop Crips	74	0.0780	-0.71	Street	US
Money Over Bitches	74	0.0780	-0.71	Street	US
Nine Trey Gangster Blood	74	0.0780	-0.71	Street	US
Raza Unida	75	0.0717	-0.74	Prison	US
Outlaws MC	76	0.0683	-0.76	OMG	US
Sons of Silence MC	77	0.0518	-0.83	OMG	US
Pagans MC	78	0.0517	-0.83	OMG	US
Bandidos MC	79	0.0449	-0.86	OMG	US

Brown Pride	80	0.0362	-0.90	Street	NA
Texas Chicano Brotherhood	81	0.0301	-0.93	Prison	US
Mongols MC	82	0.0277	-0.94	OMG	US
Desperados MC	83	0.0179	-0.99	OMG	NA
Red Devils MC	83	0.0179	-0.99	OMG	Canada
Tango Blast	84	0.0168	-0.99	Prison	US
El Forastero MC	85	0.0148	-1.00	OMG	US
Black Pistons MC	86	0.0098	-1.02	OMG	Germany
Grupo 27	87	0.0078	-1.03	Prison	Puerto Rico
Renegades MC	88	0.0072	-1.03	OMG	US
Warlocks MC	89	0.0051	-1.04	OMG	US
Devils Disciples MC	90	0.0041	-1.05	OMG	US
Diablos MC	91	0.0027	-1.05	OMG	US
Iron Horsemen MC	91	0.0027	-1.05	OMG	US
Prison Motorcycle Brotherhood	91	0.0027	-1.05	Prison	US
Avengers MC	92	0.0020	-1.06	OMG	US
Rough Riders MC	92	0.0020	-1.06	OMG	US
Tribe MC	92	0.0020	-1.06	OMG	NA
Rebels 13 MC	93	0.0018	-1.06	OMG	Australia
Wheels of Soul MC	93	0.0018	-1.06	OMG	US
Grupo 25	94	0.0003	-1.07	Prison	Puerto Rico
Outcast MC	95	0.0001	-1.07	OMG	US
Bandits	96	0.0000	-1.07	Street	NA
Click Clack	96	0.0000	-1.07	Street	NA
Code Red	96	0.0000	-1.07	Street	NA
Hard Times	96	0.0000	-1.07	Street	NA
Midnight Riders MC	96	0.0000	-1.07	OMG	NA
Oriental Boy Soldiers	96	0.0000	-1.07	Street	NA
Russian Gangs	96	0.0000	-1.07	Street	Russia
Sin City Deciples MC	96	0.0000	-1.07	OMG	US
Somali Gangs	96	0.0000	-1.07	Street	Somalia
The Cool Kids	96	0.0000	-1.07	Street	NA
Zulus MC	96	0.0000	-1.07	OMG	US

Gang Nexus Model 1					
Degree Centrality					
Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Crips	1	30	3.75	Street	US
Bloods	2	28	3.43	Street	US
Sinaloa Cartel	3	24	2.80	Cartel	Mexico
Sureños	3	24	2.80	Street	US

Latin Kings	4	20	2.17	Street	US
Aryan Brotherhood	5	17	1.70	Prison	US
Aryan Nation	5	17	1.70	Street	US
Mexican Mafia	5	17	1.70	Prison	US
Gulf Cartel	6	16	1.54	Cartel	Mexico
Zetas Cartel	6	16	1.54	Cartel	Mexico
Black P Stones	7	15	1.38	Street	US
Peckerwood	7	15	1.38	Street	US
Black Guerrilla Family	8	14	1.22	Prison	US
Gangster Disciples	8	14	1.22	Street	US
Tijuana Cartel	8	14	1.22	Cartel	Mexico
Zoe Pound	8	14	1.22	Street	Haiti
Nazi Low Riders	9	13	1.07	Prison	US
People Nation	9	13	1.07	Street	US
Vice Lords	9	13	1.07	Street	US
Conservative Vice Lords	10	12	0.91	Street	US
La Familia Michoacana Cartel	10	12	0.91	Cartel	Mexico
La Raza	10	12	0.91	Street	Mexico
Juggalos	11	11	0.75	Street	US
Nortefios	11	11	0.75	Street	US
Traveling Vice Lords	11	11	0.75	Street	US
Black Disciples	12	10	0.59	Street	US
Folk Nation	12	10	0.59	Street	US
Hells Angels	12	10	0.59	OMG	US
Juarez Cartel	12	10	0.59	Cartel	Mexico
Neo Nazi	12	10	0.59	Street	UK
White Aryan Resistance	12	10	0.59	Street	US
White Power	12	10	0.59	Street	US
White Supremacists	12	10	0.59	Street	US
Aryan Circle	13	9	0.43	Prison	US
Four Corner Hustlers	13	9	0.43	Street	US
Hammerskins	13	9	0.43	Street	US
Insane Unknowns	13	9	0.43	Street	Puerto Rico
Mexikanemi	13	9	0.43	Prison	US
Supreme White Power	13	9	0.43	Prison	US
Imperial Gangster Disciples	14	8	0.28	Street	Puerto Rico
Latin Counts	14	8	0.28	Street	Mexico
Maniac Latin Disciples	14	8	0.28	Street	US
MS-13	14	8	0.28	Street	El Salvador
Skinheads	14	8	0.28	Street	UK
18th St	15	7	0.12	Street	El Salvador
Black Panther	15	7	0.12	Street	US
Insane Gangster Disciple	15	7	0.12	Street	US

Mongols MC	15	7	0.12	OMG	US
Satans Disciples	15	7	0.12	Street	US
Vatos Locos	15	7	0.12	Street	Mexico
Border Brothers	16	6	-0.04	Prison	Mexico
Florencia 13	16	6	-0.04	Street	US
Piru	16	6	-0.04	Street	US
Rollin 60s Crips	16	6	-0.04	Street	US
Sex Money Murder	16	6	-0.04	Street	US
JalNewGen Cartel	17	5	-0.20	Cartel	Mexico
Nuestra Familia	17	5	-0.20	Prison	US
Outlaws MC	17	5	-0.20	OMG	US
Rollin 20s Crips	17	5	-0.20	Street	US
Rollin 30s Crips	17	5	-0.20	Street	Belize
Vagos MC	17	5	-0.20	OMG	US
Bandidos MC	18	4	-0.35	OMG	US
BelLey Cartel	18	4	-0.35	Cartel	Mexico
Ñetas	18	4	-0.35	Prison	Puerto Rico
Pagans MC	18	4	-0.35	OMG	US
Rollin 40s Crips	18	4	-0.35	Street	US
Asian Boyz (Crips)	19	3	-0.51	Street	Cambodia
Athens Park Bloods	19	3	-0.51	Street	US
Black Angels	19	3	-0.51	Street	US
Dead Man Incorporated	19	3	-0.51	Prison	US
Dirty White Boys	19	3	-0.51	Prison	US
Five Percenter	19	3	-0.51	Street	US
Sons of Silence MC	19	3	-0.51	OMG	US
Black Pistons MC	20	2	-0.67	OMG	Germany
Desperados MC	20	2	-0.67	OMG	NA
Grape Street Crips	20	2	-0.67	Street	US
Hoover Gangsters	20	2	-0.67	Street	US
Raza Unida	20	2	-0.67	Prison	US
Red Devils MC	20	2	-0.67	OMG	Canada
Shotgun Crips	20	2	-0.67	Street	US
Six Deuce Brim	20	2	-0.67	Street	US
Sons of Samoa	20	2	-0.67	Street	Samoa
Spanish Cobras	20	2	-0.67	Street	Puerto Rico
Texas Syndicate	20	2	-0.67	Prison	Mexico
Bounty Hunter Bloods	21	1	-0.83	Street	US
Brown Pride	21	1	-0.83	Street	NA
Devils Disciples MC	21	1	-0.83	OMG	US
El Forastero MC	21	1	-0.83	OMG	US
Grupo 25	21	1	-0.83	Prison	Puerto Rico
Grupo 27	21	1	-0.83	Prison	Puerto Rico

Hilltop Crips	21	1	-0.83	Street	US
Money Over Bitches	21	1	-0.83	Street	US
Nine Trey Gangster Blood	21	1	-0.83	Street	US
Prison Motorcycle Brotherhood	21	1	-0.83	Prison	US
Renegades MC	21	1	-0.83	OMG	US
Rough Riders MC	21	1	-0.83	OMG	US
Texas Chicano Brotherhood	21	1	-0.83	Prison	US
Trinitarios	21	1	-0.83	Street	Dominican Republic
Avengers MC	22	0	-0.99	OMG	US
Bandits	22	0	-0.99	Street	NA
Click Clack	22	0	-0.99	Street	NA
Code Red	22	0	-0.99	Street	NA
Diablos MC	22	0	-0.99	OMG	US
Hard Times	22	0	-0.99	Street	NA
Iron Horsemen MC	22	0	-0.99	OMG	US
Midnight Riders MC	22	0	-0.99	OMG	NA
Native Mob	22	0	-0.99	Street	US
Oriental Boy Soldiers	22	0	-0.99	Street	NA
Outcast MC	22	0	-0.99	OMG	US
Rebels 13 MC	22	0	-0.99	OMG	Australia
Russian Gangs	22	0	-0.99	Street	Russia
Sin City Deciples MC	22	0	-0.99	OMG	US
Somali Gangs	22	0	-0.99	Street	Somalia
Tango Blast	22	0	-0.99	Prison	US
The Cool Kids	22	0	-0.99	Street	NA
Tiny Rascal Gang	22	0	-0.99	Street	Cambodia
Tree Top Piru	22	0	-0.99	Street	US
Tribe MC	22	0	-0.99	OMG	NA
Warlocks MC	22	0	-0.99	OMG	US
Wheels of Soul MC	22	0	-0.99	OMG	US
Zulus MC	22	0	-0.99	OMG	US

Closeness Centrality

Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Sinaloa Cartel	1	0.000313	0.60	Cartel	Mexico
Crips	2	0.000311	0.58	Street	US
Gulf Cartel	2	0.000311	0.58	Cartel	Mexico
La Familia Michoacana Cartel	2	0.000311	0.58	Cartel	Mexico
Mexican Mafia	2	0.000311	0.58	Prison	US
Zetas Cartel	2	0.000311	0.58	Cartel	Mexico
Aryan Brotherhood	3	0.000310	0.57	Prison	US
Bloods	3	0.000310	0.57	Street	US

Juggalos	3	0.000310	0.57	Street	US
Sureños	3	0.000310	0.57	Street	US
Zoe Pound	3	0.000310	0.57	Street	Haiti
Aryan Nation	4	0.000309	0.56	Street	US
Black Guerrilla Family	4	0.000309	0.56	Prison	US
Gangster Disciples	4	0.000309	0.56	Street	US
Juarez Cartel	4	0.000309	0.56	Cartel	Mexico
Latin Kings	4	0.000309	0.56	Street	US
Norteños	4	0.000309	0.56	Street	US
Tijuana Cartel	4	0.000309	0.56	Cartel	Mexico
Black P Stones	5	0.000308	0.55	Street	US
Conservative Vice Lords	5	0.000308	0.55	Street	US
La Raza	5	0.000308	0.55	Street	Mexico
Mexikanemi	5	0.000308	0.55	Prison	US
Nazi Low Riders	5	0.000308	0.55	Prison	US
18th St	6	0.000307	0.54	Street	El Salvador
Hells Angels	6	0.000307	0.54	OMG	US
JalNewGen Cartel	6	0.000307	0.54	Cartel	Mexico
MS-13	6	0.000307	0.54	Street	El Salvador
Nuestra Familia	6	0.000307	0.54	Prison	US
Peckerwood	6	0.000307	0.54	Street	US
Rollin 60s Crips	6	0.000307	0.54	Street	US
Vice Lords	6	0.000307	0.54	Street	US
Black Disciples	7	0.000306	0.53	Street	US
Black Panther	7	0.000306	0.53	Street	US
Border Brothers	7	0.000306	0.53	Prison	Mexico
Florencia 13	7	0.000306	0.53	Street	US
Folk Nation	7	0.000306	0.53	Street	US
People Nation	7	0.000306	0.53	Street	US
Vagos MC	7	0.000306	0.53	OMG	US
Vatos Locos	7	0.000306	0.53	Street	Mexico
BelLey Cartel	8	0.000305	0.52	Cartel	Mexico
Maniac Latin Disciples	8	0.000305	0.52	Street	US
Outlaws MC	8	0.000305	0.52	OMG	US
Piru	8	0.000305	0.52	Street	US
Traveling Vice Lords	8	0.000305	0.52	Street	US
Bandidos MC	9	0.000304	0.50	OMG	US
Black Angels	9	0.000304	0.50	Street	US
Brown Pride	9	0.000304	0.50	Street	NA
Five Percenter	9	0.000304	0.50	Street	US
Imperial Gangster Disciples	9	0.000304	0.50	Street	Puerto Rico
Insane Gangster Disciple	9	0.000304	0.50	Street	US
Raza Unida	9	0.000304	0.50	Prison	US

Sex Money Murder	9	0.000304	0.50	Street	US
Aryan Circle	10	0.000303	0.49	Prison	US
Asian Boyz (Crips)	10	0.000303	0.49	Street	Cambodia
Four Corner Hustlers	10	0.000303	0.49	Street	US
Insane Unknowns	10	0.000303	0.49	Street	Puerto Rico
Latin Counts	10	0.000303	0.49	Street	Mexico
Ñetas	10	0.000303	0.49	Prison	Puerto Rico
Rollin 20s Crips	10	0.000303	0.49	Street	US
Rollin 30s Crips	10	0.000303	0.49	Street	Belize
Rollin 40s Crips	10	0.000303	0.49	Street	US
Satans Disciples	10	0.000303	0.49	Street	US
Shotgun Crips	10	0.000303	0.49	Street	US
Spanish Cobras	10	0.000303	0.49	Street	Puerto Rico
Texas Syndicate	10	0.000303	0.49	Prison	Mexico
White Aryan Resistance	10	0.000303	0.49	Street	US
White Power	10	0.000303	0.49	Street	US
White Supremacists	10	0.000303	0.49	Street	US
Athens Park Bloods	11	0.000302	0.48	Street	US
Dead Man Incorporated	11	0.000302	0.48	Prison	US
Dirty White Boys	11	0.000302	0.48	Prison	US
Hilltop Crips	11	0.000302	0.48	Street	US
Mongols MC	11	0.000302	0.48	OMG	US
Neo Nazi	11	0.000302	0.48	Street	UK
Pagans MC	11	0.000302	0.48	OMG	US
Six Deuce Brim	11	0.000302	0.48	Street	US
Sons of Samoa	11	0.000302	0.48	Street	Samoa
Supreme White Power	11	0.000302	0.48	Prison	US
Texas Chicano Brotherhood	11	0.000302	0.48	Prison	US
Bounty Hunter Bloods	12	0.000301	0.47	Street	US
Hammerskins	12	0.000301	0.47	Street	US
Money Over Bitches	12	0.000301	0.47	Street	US
Nine Trey Gangster Blood	12	0.000301	0.47	Street	US
Sons of Silence MC	12	0.000301	0.47	OMG	US
Trinitarios	12	0.000301	0.47	Street	Dominican Republic
Skinheads	13	0.000300	0.46	Street	UK
Desperados MC	14	0.000299	0.45	OMG	NA
Devils Disciples MC	14	0.000299	0.45	OMG	US
El Forastero MC	14	0.000299	0.45	OMG	US
Red Devils MC	14	0.000299	0.45	OMG	Canada
Renegades MC	14	0.000299	0.45	OMG	US
Black Pistons MC	15	0.000298	0.44	OMG	Germany
Prison Motorcycle Brotherhood	16	0.000296	0.42	Prison	US

Grape Street Crips	17	0.000295	0.41	Street	US
Hoover Gangsters	17	0.000295	0.41	Street	US
Rough Riders MC	18	0.000293	0.39	OMG	US
Avengers MC	19	0.000069	-1.96	OMG	US
Bandits	19	0.000069	-1.96	Street	NA
Click Clack	19	0.000069	-1.96	Street	NA
Code Red	19	0.000069	-1.96	Street	NA
Diablos MC	19	0.000069	-1.96	OMG	US
Grupo 25	19	0.000069	-1.96	Prison	Puerto Rico
Grupo 27	19	0.000069	-1.96	Prison	Puerto Rico
Hard Times	19	0.000069	-1.96	Street	NA
Iron Horsemen MC	19	0.000069	-1.96	OMG	US
Midnight Riders MC	19	0.000069	-1.96	OMG	NA
Native Mob	19	0.000069	-1.96	Street	US
Oriental Boy Soldiers	19	0.000069	-1.96	Street	NA
Outcast MC	19	0.000069	-1.96	OMG	US
Rebels 13 MC	19	0.000069	-1.96	OMG	Australia
Russian Gangs	19	0.000069	-1.96	Street	Russia
Sin City Deciples MC	19	0.000069	-1.96	OMG	US
Somali Gangs	19	0.000069	-1.96	Street	Somalia
Tango Blast	19	0.000069	-1.96	Prison	US
The Cool Kids	19	0.000069	-1.96	Street	NA
Tiny Rascal Gang	19	0.000069	-1.96	Street	Cambodia
Tree Top Piru	19	0.000069	-1.96	Street	US
Tribe MC	19	0.000069	-1.96	OMG	NA
Warlocks MC	19	0.000069	-1.96	OMG	US
Wheels of Soul MC	19	0.000069	-1.96	OMG	US
Zulus MC	19	0.000069	-1.96	OMG	US

Betweenness Centrality

Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Crips	1	1077.05	6.38	Street	US
Sinaloa Cartel	2	838.78	4.88	Cartel	Mexico
Bloods	3	707.55	4.05	Street	US
Hells Angels	4	460.53	2.49	OMG	US
Sureños	5	375.68	1.96	Street	US
Mexican Mafia	6	338.21	1.72	Prison	US
Aryan Nation	7	312.53	1.56	Street	US
Gulf Cartel	8	311.45	1.55	Cartel	Mexico
Aryan Brotherhood	9	287.30	1.40	Prison	US
Juggalos	10	276.86	1.33	Street	US
Zetas Cartel	11	226.78	1.02	Cartel	Mexico

Zoe Pound	12	209.04	0.91	Street	Haiti
Tijuana Cartel	13	207.86	0.90	Cartel	Mexico
Peckerwood	14	191.26	0.79	Street	US
Latin Kings	15	184.25	0.75	Street	US
Outlaws MC	16	159.74	0.60	OMG	US
Black Guerrilla Family	17	140.62	0.48	Prison	US
Black P Stones	18	134.54	0.44	Street	US
Nazi Low Riders	19	117.34	0.33	Prison	US
La Familia Michoacana Cartel	20	112.67	0.30	Cartel	Mexico
Gangster Disciples	21	105.71	0.26	Street	US
Pagans MC	22	97.49	0.20	OMG	US
Rollin 30s Crips	23	93.50	0.18	Street	Belize
Norteños	24	92.67	0.17	Street	US
Shotgun Crips	25	90.50	0.16	Street	US
La Raza	26	87.93	0.14	Street	Mexico
Mongols MC	27	56.14	-0.06	OMG	US
Juarez Cartel	28	54.89	-0.07	Cartel	Mexico
Rollin 60s Crips	29	53.55	-0.07	Street	US
Conservative Vice Lords	30	46.63	-0.12	Street	US
Aryan Circle	31	35.07	-0.19	Prison	US
People Nation	32	32.59	-0.21	Street	US
Folk Nation	33	32.41	-0.21	Street	US
Black Panther	34	27.50	-0.24	Street	US
Vice Lords	35	26.26	-0.25	Street	US
Vatos Locos	36	25.38	-0.25	Street	Mexico
Nuestra Familia	37	20.51	-0.28	Prison	US
Bandidos MC	38	20.38	-0.28	OMG	US
JalNewGen Cartel	39	19.18	-0.29	Cartel	Mexico
Black Disciples	40	18.73	-0.29	Street	US
White Aryan Resistance	41	18.26	-0.30	Street	US
White Power	41	18.26	-0.30	Street	US
White Supremacists	41	18.26	-0.30	Street	US
Mexikanemi	42	15.65	-0.31	Prison	US
Piru	43	15.38	-0.31	Street	US
Maniac Latin Disciples	44	14.44	-0.32	Street	US
Vagos MC	45	14.12	-0.32	OMG	US
18th St	46	12.58	-0.33	Street	El Salvador
MS-13	47	11.46	-0.34	Street	El Salvador
Neo Nazi	48	9.96	-0.35	Street	UK
Supreme White Power	49	8.22	-0.36	Prison	US
Traveling Vice Lords	50	7.75	-0.36	Street	US
Sons of Silence MC	51	3.49	-0.39	OMG	US
BelLey Cartel	52	3.20	-0.39	Cartel	Mexico

Florencia 13	53	2.67	-0.39	Street	US
Grape Street Crips	54	2.50	-0.40	Street	US
Rollin 20s Crips	55	2.00	-0.40	Street	US
Border Brothers	56	1.99	-0.40	Prison	Mexico
Hammerskins	57	1.74	-0.40	Street	US
Ñetas	58	1.19	-0.40	Prison	Puerto Rico
Sex Money Murder	59	1.12	-0.40	Street	US
Hoover Gangsters	60	1.00	-0.41	Street	US
Four Corner Hustlers	61	0.80	-0.41	Street	US
Insane Unknowns	61	0.80	-0.41	Street	Puerto Rico
Imperial Gangster Disciples	62	0.69	-0.41	Street	Puerto Rico
Athens Park Bloods	63	0.67	-0.41	Street	US
Insane Gangster Disciple	64	0.54	-0.41	Street	US
Asian Boyz (Crips)	65	0.50	-0.41	Street	Cambodia
Texas Syndicate	66	0.27	-0.41	Prison	Mexico
Satans Disciples	67	0.24	-0.41	Street	US
Dead Man Incorporated	68	0.20	-0.41	Prison	US
Avengers MC	69	0.00	-0.41	OMG	US
Bandits	69	0.00	-0.41	Street	NA
Black Angels	69	0.00	-0.41	Street	US
Black Pistons MC	69	0.00	-0.41	OMG	Germany
Bounty Hunter Bloods	69	0.00	-0.41	Street	US
Brown Pride	69	0.00	-0.41	Street	NA
Click Clack	69	0.00	-0.41	Street	NA
Code Red	69	0.00	-0.41	Street	NA
Desperados MC	69	0.00	-0.41	OMG	NA
Devils Disciples MC	69	0.00	-0.41	OMG	US
Diablos MC	69	0.00	-0.41	OMG	US
Dirty White Boys	69	0.00	-0.41	Prison	US
El Forastero MC	69	0.00	-0.41	OMG	US
Five Percenters	69	0.00	-0.41	Street	US
Grupo 25	69	0.00	-0.41	Prison	Puerto Rico
Grupo 27	69	0.00	-0.41	Prison	Puerto Rico
Hard Times	69	0.00	-0.41	Street	NA
Hilltop Crips	69	0.00	-0.41	Street	US
Iron Horsemen MC	69	0.00	-0.41	OMG	US
Latin Counts	69	0.00	-0.41	Street	Mexico
Midnight Riders MC	69	0.00	-0.41	OMG	NA
Money Over Bitches	69	0.00	-0.41	Street	US
Native Mob	69	0.00	-0.41	Street	US
Nine Trey Gangster Blood	69	0.00	-0.41	Street	US
Oriental Boy Soldiers	69	0.00	-0.41	Street	NA
Outcast MC	69	0.00	-0.41	OMG	US

Prison Motorcycle Brotherhood	69	0.00	-0.41	Prison	US
Raza Unida	69	0.00	-0.41	Prison	US
Rebels 13 MC	69	0.00	-0.41	OMG	Australia
Red Devils MC	69	0.00	-0.41	OMG	Canada
Renegades MC	69	0.00	-0.41	OMG	US
Rollin 40s Crips	69	0.00	-0.41	Street	US
Rough Riders MC	69	0.00	-0.41	OMG	US
Russian Gangs	69	0.00	-0.41	Street	Russia
Sin City Deciples MC	69	0.00	-0.41	OMG	US
Six Deuce Brim	69	0.00	-0.41	Street	US
Skinheads	69	0.00	-0.41	Street	UK
Somali Gangs	69	0.00	-0.41	Street	Somalia
Sons of Samoa	69	0.00	-0.41	Street	Samoa
Spanish Cobras	69	0.00	-0.41	Street	Puerto Rico
Tango Blast	69	0.00	-0.41	Prison	US
Texas Chicano Brotherhood	69	0.00	-0.41	Prison	US
The Cool Kids	69	0.00	-0.41	Street	NA
Tiny Rascal Gang	69	0.00	-0.41	Street	Cambodia
Tree Top Piru	69	0.00	-0.41	Street	US
Tribe MC	69	0.00	-0.41	OMG	NA
Trinitarios	69	0.00	-0.41	Street	Dominican Republic
Warlocks MC	69	0.00	-0.41	OMG	US
Wheels of Soul MC	69	0.00	-0.41	OMG	US
Zulus MC	69	0.00	-0.41	OMG	US

PageRank Centrality

Gang	Ran k	Centrality Score	Zscor e	Gang Type	Country
Crips	1	0.0374	4.34	Street	US
Bloods	2	0.0335	3.76	Street	US
Sinaloa Cartel	3	0.0272	2.82	Cartel	Mexico
Sureños	4	0.0259	2.62	Street	US
Latin Kings	5	0.0209	1.88	Street	US
Aryan Brotherhood	6	0.0207	1.85	Prison	US
Aryan Nation	7	0.0199	1.73	Street	US
Gulf Cartel	8	0.0195	1.67	Cartel	Mexico
Mexican Mafia	9	0.0192	1.63	Prison	US
Hells Angels	10	0.0188	1.57	OMG	US
Zetas Cartel	11	0.0183	1.49	Cartel	Mexico
Tijuana Cartel	12	0.0168	1.27	Cartel	Mexico
Zoe Pound	13	0.0163	1.20	Street	Haiti
Black Guerrilla Family	14	0.0161	1.17	Prison	US
Black P Stones	14	0.0161	1.17	Street	US

Peckerwood	15	0.0159	1.14	Street	US
Gangster Disciples	16	0.0155	1.08	Street	US
Nazi Low Riders	17	0.0144	0.91	Prison	US
People Nation	18	0.0141	0.87	Street	US
Vice Lords	19	0.0138	0.82	Street	US
La Familia Michoacana Cartel	20	0.0134	0.76	Cartel	Mexico
La Raza	20	0.0134	0.76	Street	Mexico
Conservative Vice Lords	21	0.0129	0.69	Street	US
Norteños	22	0.0128	0.67	Street	US
Juggalos	23	0.0122	0.58	Street	US
Folk Nation	24	0.0119	0.54	Street	US
Traveling Vice Lords	25	0.0118	0.53	Street	US
Black Disciples	26	0.0116	0.50	Street	US
Juarez Cartel	26	0.0116	0.50	Cartel	Mexico
Mongols MC	27	0.0114	0.47	OMG	US
Neo Nazi	28	0.0107	0.36	Street	UK
White Aryan Resistance	29	0.0106	0.35	Street	US
White Power	29	0.0106	0.35	Street	US
White Supremacists	29	0.0106	0.35	Street	US
Mexikanemi	30	0.0102	0.29	Prison	US
Grupo 25	31	0.0099	0.24	Prison	Puerto Rico
Grupo 27	31	0.0099	0.24	Prison	Puerto Rico
Four Corner Hustlers	31	0.0098	0.23	Street	US
Insane Unknowns	31	0.0098	0.23	Street	Puerto Rico
Supreme White Power	31	0.0098	0.23	Prison	US
Aryan Circle	32	0.0097	0.21	Prison	US
Hammerskins	32	0.0097	0.21	Street	US
Imperial Gangster Disciples	33	0.0095	0.18	Street	Puerto Rico
MS-13	33	0.0095	0.18	Street	El Salvador
Maniac Latin Disciples	34	0.0094	0.17	Street	US
Outlaws MC	34	0.0094	0.17	OMG	US
Rollin 30s Crips	35	0.009	0.11	Street	Belize
Latin Counts	36	0.0089	0.09	Street	Mexico
Rollin 60s Crips	36	0.0089	0.09	Street	US
Skinheads	37	0.0088	0.08	Street	UK
Black Panther	38	0.0087	0.06	Street	US
Insane Gangster Disciple	39	0.0085	0.03	Street	US
Satans Disciples	39	0.0085	0.03	Street	US
18th St	40	0.0084	0.02	Street	El Salvador
Rollin 20s Crips	40	0.0084	0.02	Street	US
Piru	41	0.0082	-0.01	Street	US
Vatos Locos	41	0.0082	-0.01	Street	Mexico
Border Brothers	42	0.0076	-0.10	Prison	Mexico

Florencia 13	43	0.0075	-0.12	Street	US
Pagans MC	43	0.0075	-0.12	OMG	US
Sex Money Murder	44	0.0071	-0.17	Street	US
Vagos MC	45	0.0069	-0.20	OMG	US
Nuestra Familia	46	0.0068	-0.22	Prison	US
Rollin 40s Crips	46	0.0068	-0.22	Street	US
JalNewGen Cartel	47	0.0066	-0.25	Cartel	Mexico
Hoover Gangsters	48	0.006	-0.34	Street	US
Bandidos MC	49	0.0059	-0.35	OMG	US
Asian Boyz (Crips)	50	0.0057	-0.38	Street	Cambodia
Grape Street Crips	51	0.0056	-0.40	Street	US
BelLey Cartel	52	0.0054	-0.43	Cartel	Mexico
Desperados MC	52	0.0054	-0.43	OMG	NA
Red Devils MC	52	0.0054	-0.43	OMG	Canada
Ñetas	53	0.0053	-0.44	Prison	Puerto Rico
Shotgun Crips	54	0.0051	-0.47	Street	US
Sons of Silence MC	55	0.0049	-0.50	OMG	US
Athens Park Bloods	56	0.0046	-0.55	Street	US
Dead Man Incorporated	56	0.0046	-0.55	Prison	US
Five Percenter	57	0.0045	-0.56	Street	US
Black Angels	58	0.0044	-0.58	Street	US
Black Pistons MC	58	0.0044	-0.58	OMG	Germany
Dirty White Boys	58	0.0044	-0.58	Prison	US
Sons of Samoa	59	0.0042	-0.61	Street	Samoa
Six Deuce Brim	60	0.0037	-0.68	Street	US
Spanish Cobras	61	0.0035	-0.71	Street	Puerto Rico
Texas Syndicate	61	0.0035	-0.71	Prison	Mexico
Raza Unida	62	0.0034	-0.73	Prison	US
Devils Disciples MC	63	0.0031	-0.77	OMG	US
El Forastero MC	63	0.0031	-0.77	OMG	US
Prison Motorcycle Brotherhood	63	0.0031	-0.77	Prison	US
Renegades MC	63	0.0031	-0.77	OMG	US
Rough Riders MC	63	0.0031	-0.77	OMG	US
Bounty Hunter Bloods	64	0.0025	-0.86	Street	US
Hilltop Crips	64	0.0025	-0.86	Street	US
Money Over Bitches	64	0.0025	-0.86	Street	US
Nine Trey Gangster Blood	64	0.0025	-0.86	Street	US
Texas Chicano Brotherhood	64	0.0025	-0.86	Prison	US
Trinitarios	64	0.0025	-0.86	Street	Dominican Republic
Brown Pride	65	0.0024	-0.87	Street	NA
Avengers MC	66	0.0015	-1.01	OMG	US
Bandits	66	0.0015	-1.01	Street	NA

Click Clack	66	0.0015	-1.01	Street	NA
Code Red	66	0.0015	-1.01	Street	NA
Diablos MC	66	0.0015	-1.01	OMG	US
Hard Times	66	0.0015	-1.01	Street	NA
Iron Horsemen MC	66	0.0015	-1.01	OMG	US
Midnight Riders MC	66	0.0015	-1.01	OMG	NA
Native Mob	66	0.0015	-1.01	Street	US
Oriental Boy Soldiers	66	0.0015	-1.01	Street	NA
Outcast MC	66	0.0015	-1.01	OMG	US
Rebels 13 MC	66	0.0015	-1.01	OMG	Australia
Russian Gangs	66	0.0015	-1.01	Street	Russia
Sin City Deciples MC	66	0.0015	-1.01	OMG	US
Somali Gangs	66	0.0015	-1.01	Street	Somalia
Tango Blast	66	0.0015	-1.01	Prison	US
The Cool Kids	66	0.0015	-1.01	Street	NA
Tiny Rascal Gang	66	0.0015	-1.01	Street	Cambodia
Tree Top Piru	66	0.0015	-1.01	Street	US
Tribe MC	66	0.0015	-1.01	OMG	NA
Warlocks MC	66	0.0015	-1.01	OMG	US
Wheels of Soul MC	66	0.0015	-1.01	OMG	US
Zulus MC	66	0.0015	-1.01	OMG	US

Eigenvector Centrality

Gang	Rank	Centrality Score	Zscore	Gang Type	Country
18th St	30	0.3460	0.47	Street	El Salvador
Aryan Brotherhood	10	0.6266	1.64	Prison	US
Aryan Circle	50	0.2099	-0.09	Prison	US
Aryan Nation	11	0.6190	1.60	Street	US
Asian Boyz (Crips)	72	0.0815	-0.62	Street	Cambodia
Athens Park Bloods	58	0.1380	-0.39	Street	US
Avengers MC	87	0.0000	-0.96	OMG	US
Bandidos MC	56	0.1497	-0.34	OMG	US
Bandits	87	0.0000	-0.96	Street	NA
BellLeY Cartel	54	0.1648	-0.28	Cartel	Mexico
Black Angels	55	0.1580	-0.30	Street	US
Black Disciples	32	0.3223	0.38	Street	US
Black Guerrilla Family	15	0.5384	1.27	Prison	US
Black P Stones	13	0.5992	1.52	Street	US
Black Panther	33	0.3111	0.33	Street	US
Black Pistons MC	82	0.0167	-0.89	OMG	Germany
Bloods	2	0.9263	2.88	Street	US
Border Brothers	42	0.2502	0.08	Prison	Mexico

Bounty Hunter Bloods	75	0.0735	-0.65	Street	US
Brown Pride	73	0.0793	-0.63	Street	NA
Click Clack	87	0.0000	-0.96	Street	NA
Code Red	87	0.0000	-0.96	Street	NA
Conservative Vice Lords	18	0.5130	1.17	Street	US
Crips	4	0.8462	2.55	Street	US
Dead Man Incorporated	66	0.1047	-0.53	Prison	US
Desperados MC	80	0.0227	-0.86	OMG	NA
Devils Disciples MC	81	0.0209	-0.87	OMG	US
Diablos MC	87	0.0000	-0.96	OMG	US
Dirty White Boys	59	0.1360	-0.40	Prison	US
El Forastero MC	81	0.0209	-0.87	OMG	US
Five Percenter	57	0.1409	-0.38	Street	US
Florencia 13	37	0.2783	0.19	Street	US
Folk Nation	35	0.3062	0.31	Street	US
Four Corner Hustlers	29	0.4048	0.72	Street	US
Gangster Disciples	14	0.5480	1.31	Street	US
Grape Street Crips	84	0.0086	-0.92	Street	US
Grupo 25	87	0.0000	-0.96	Prison	Puerto Rico
Grupo 27	87	0.0000	-0.96	Prison	Puerto Rico
Gulf Cartel	7	0.6932	1.91	Cartel	Mexico
Hammerskins	51	0.2097	-0.09	Street	US
Hard Times	87	0.0000	-0.96	Street	NA
Hells Angels	39	0.2632	0.13	OMG	US
Hilltop Crips	77	0.0671	-0.68	Street	US
Hoover Gangsters	86	0.0060	-0.93	Street	US
Imperial Gangster Disciples	40	0.2554	0.10	Street	Puerto Rico
Insane Gangster Disciple	44	0.2347	0.01	Street	US
Insane Unknowns	29	0.4048	0.72	Street	Puerto Rico
Iron Horsemen MC	87	0.0000	-0.96	OMG	US
JalNewGen Cartel	49	0.2135	-0.07	Cartel	Mexico
Juarez Cartel	27	0.4508	0.91	Cartel	Mexico
Juggalos	19	0.5031	1.12	Street	US
La Familia Michoacana Cartel	9	0.6467	1.72	Cartel	Mexico
La Raza	26	0.4588	0.94	Street	Mexico
Latin Counts	31	0.3447	0.47	Street	Mexico
Latin Kings	5	0.8179	2.43	Street	US
Maniac Latin Disciples	36	0.2822	0.21	Street	US
Mexican Mafia	6	0.7277	2.05	Prison	US
Mexikanemi	22	0.4711	0.99	Prison	US
Midnight Riders MC	87	0.0000	-0.96	OMG	NA
Money Over Bitches	75	0.0735	-0.65	Street	US
Mongols MC	69	0.0938	-0.57	OMG	US

MS-13	28	0.4115	0.75	Street	El Salvador
Native Mob	87	0.0000	-0.96	Street	US
Nazi Low Riders	20	0.5007	1.11	Prison	US
Neo Nazi	41	0.2552	0.10	Street	UK
Ñetas	52	0.1798	-0.21	Prison	Puerto Rico
Nine Trey Gangster Blood	75	0.0735	-0.65	Street	US
Norteños	16	0.5379	1.27	Street	US
Nuestra Familia	43	0.2429	0.05	Prison	US
Oriental Boy Soldiers	87	0.0000	-0.96	Street	NA
Outcast MC	87	0.0000	-0.96	OMG	US
Outlaws MC	61	0.1169	-0.47	OMG	US
Pagans MC	63	0.1069	-0.52	OMG	US
Peckerwood	23	0.4692	0.98	Street	US
People Nation	21	0.4960	1.10	Street	US
Piru	49	0.2135	-0.07	Street	US
Prison Motorcycle Brotherhood	83	0.0093	-0.92	Prison	US
Raza Unida	60	0.1227	-0.45	Prison	US
Rebels 13 MC	87	0.0000	-0.96	OMG	Australia
Red Devils MC	80	0.0227	-0.86	OMG	Canada
Renegades MC	81	0.0209	-0.87	OMG	US
Rollin 20s Crips	62	0.1074	-0.51	Street	US
Rollin 30s Crips	67	0.1020	-0.54	Street	Belize
Rollin 40s Crips	68	0.1014	-0.54	Street	US
Rollin 60s Crips	45	0.2227	-0.04	Street	US
Rough Riders MC	85	0.0085	-0.92	OMG	US
Russian Gangs	87	0.0000	-0.96	Street	Russia
Satans Disciples	47	0.2217	-0.04	Street	US
Sex Money Murder	34	0.3067	0.31	Street	US
Shotgun Crips	76	0.0676	-0.68	Street	US
Sin City Deciples MC	87	0.0000	-0.96	OMG	US
Sinaloa Cartel	1	1.0000	3.18	Cartel	Mexico
Six Deuce Brim	71	0.0904	-0.58	Street	US
Skinheads	53	0.1729	-0.24	Street	UK
Somali Gangs	87	0.0000	-0.96	Street	Somalia
Sons of Samoa	74	0.0736	-0.65	Street	Samoa
Sons of Silence MC	65	0.1063	-0.52	OMG	US
Spanish Cobras	70	0.0914	-0.58	Street	Puerto Rico
Supreme White Power	48	0.2184	-0.05	Prison	US
Sureños	3	0.8530	2.57	Street	US
Tango Blast	87	0.0000	-0.96	Prison	US
Texas Chicano Brotherhood	78	0.0550	-0.73	Prison	US
Texas Syndicate	64	0.1065	-0.52	Prison	Mexico
The Cool Kids	87	0.0000	-0.96	Street	NA

Tijuana Cartel	25	0.4638	0.96	Cartel	Mexico
Tiny Rascal Gang	87	0.0000	-0.96	Street	Cambodia
Traveling Vice Lords	24	0.4669	0.97	Street	US
Tree Top Piru	87	0.0000	-0.96	Street	US
Tribe MC	87	0.0000	-0.96	OMG	NA
Trinitarios	79	0.0482	-0.76	Street	Dominican Republic
Vagos MC	46	0.2224	-0.04	OMG	US
Vatos Locos	31	0.3447	0.47	Street	Mexico
Vice Lords	17	0.5344	1.25	Street	US
Warlocks MC	87	0.0000	-0.96	OMG	US
Wheels of Soul MC	87	0.0000	-0.96	OMG	US
White Aryan Resistance	38	0.2724	0.17	Street	US
White Power	38	0.2724	0.17	Street	US
White Supremacists	38	0.2724	0.17	Street	US
Zetas Cartel	8	0.6498	1.73	Cartel	Mexico
Zoe Pound	12	0.6079	1.56	Street	Haiti
Zulus MC	87	0.0000	-0.96	OMG	US

Gang Nexus Model 2					
Degree Centrality					
Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Bloods	1	24	3.65	Street	US
Crips	1	24	3.65	Street	US
Sureños	2	17	2.30	Street	US
Aryan Nation	3	14	1.72	Street	US
Black P Stones	3	14	1.72	Street	US
Latin Kings	3	14	1.72	Street	US
Aryan Brotherhood	4	13	1.53	Prison	US
Mexican Mafia	4	13	1.53	Prison	US
Peckerwood	4	13	1.53	Street	US
People Nation	4	13	1.53	Street	US
Vice Lords	4	13	1.53	Street	US
Black Guerrilla Family	5	12	1.34	Prison	US
Nazi Low Riders	5	12	1.34	Prison	US
Zoe Pound	5	12	1.34	Street	Haiti
Gangster Disciples	6	11	1.14	Street	US
Juggalos	6	11	1.14	Street	US
La Raza	6	11	1.14	Street	Mexico
Traveling Vice Lords	6	11	1.14	Street	US
Black Disciples	7	10	0.95	Street	US
Conservative Vice Lords	7	10	0.95	Street	US

Folk Nation	7	10	0.95	Street	US
Neo Nazi	7	10	0.95	Street	UK
White Aryan Resistance	7	10	0.95	Street	US
White Power	7	10	0.95	Street	US
White Supremacists	7	10	0.95	Street	US
Aryan Circle	8	9	0.76	Prison	US
Four Corner Hustlers	8	9	0.76	Street	US
Hammerskins	8	9	0.76	Street	US
Insane Unknowns	8	9	0.76	Street	Puerto Rico
Supreme White Power	8	9	0.76	Prison	US
Hells Angels	9	8	0.57	OMG	US
Imperial Gangster Disciples	9	8	0.57	Street	Puerto Rico
Latin Counts	9	8	0.57	Street	Mexico
Maniac Latin Disciples	9	8	0.57	Street	US
Skinheads	9	8	0.57	Street	UK
Black Panther	10	7	0.37	Street	US
Insane Gangster Disciple	10	7	0.37	Street	US
Norteños	10	7	0.37	Street	US
Satans Disciples	10	7	0.37	Street	US
Vatos Locos	10	7	0.37	Street	Mexico
Mexikanemi	11	6	0.18	Prison	US
Mongols MC	11	6	0.18	OMG	US
Piru	11	6	0.18	Street	US
Sex Money Murder	11	6	0.18	Street	US
18th St	12	5	-0.01	Street	El Salvador
Outlaws MC	12	5	-0.01	OMG	US
Rollin 20s Crips	12	5	-0.01	Street	US
Rollin 30s Crips	12	5	-0.01	Street	Belize
MS-13	13	4	-0.20	Street	El Salvador
Ñetas	13	4	-0.20	Prison	Puerto Rico
Nuestra Familia	13	4	-0.20	Prison	US
Pagans MC	13	4	-0.20	OMG	US
Rollin 40s Crips	13	4	-0.20	Street	US
Rollin 60s Crips	13	4	-0.20	Street	US
Asian Boyz (Crips)	14	3	-0.40	Street	Cambodia
Athens Park Bloods	14	3	-0.40	Street	US
Black Angels	14	3	-0.40	Street	US
Border Brothers	14	3	-0.40	Prison	Mexico
Dead Man Incorporated	14	3	-0.40	Prison	US
Dirty White Boys	14	3	-0.40	Prison	US
Five Percenters	14	3	-0.40	Street	US
Florencia 13	14	3	-0.40	Street	US
Sons of Silence MC	14	3	-0.40	OMG	US

Vagos MC	14	3	-0.40	OMG	US
Black Pistons MC	15	2	-0.59	OMG	Germany
Desperados MC	15	2	-0.59	OMG	NA
Grape Street Crips	15	2	-0.59	Street	US
Hoover Gangsters	15	2	-0.59	Street	US
Red Devils MC	15	2	-0.59	OMG	Canada
Shotgun Crips	15	2	-0.59	Street	US
Six Deuce Brim	15	2	-0.59	Street	US
Sons of Samoa	15	2	-0.59	Street	Samoa
Spanish Cobras	15	2	-0.59	Street	Puerto Rico
Bandidos MC	16	1	-0.78	OMG	US
Bounty Hunter Bloods	16	1	-0.78	Street	US
Devils Disciples MC	16	1	-0.78	OMG	US
El Forastero MC	16	1	-0.78	OMG	US
Grupo 25	16	1	-0.78	Prison	Puerto Rico
Grupo 27	16	1	-0.78	Prison	Puerto Rico
Hilltop Crips	16	1	-0.78	Street	US
Money Over Bitches	16	1	-0.78	Street	US
Nine Trey Gangster Blood	16	1	-0.78	Street	US
Prison Motorcycle Brotherhood	16	1	-0.78	Prison	US
Raza Unida	16	1	-0.78	Prison	US
Renegades MC	16	1	-0.78	OMG	US
Rough Riders MC	16	1	-0.78	OMG	US
Trinitarios	16	1	-0.78	Street	Dominican Republic
Avengers MC	17	0	-0.98	OMG	US
Bandits	17	0	-0.98	Street	NA
Brown Pride	17	0	-0.98	Street	NA
Click Clack	17	0	-0.98	Street	NA
Code Red	17	0	-0.98	Street	NA
Diablos MC	17	0	-0.98	OMG	US
Hard Times	17	0	-0.98	Street	NA
Iron Horsemen MC	17	0	-0.98	OMG	US
Midnight Riders MC	17	0	-0.98	OMG	NA
Native Mob	17	0	-0.98	Street	US
Oriental Boy Soldiers	17	0	-0.98	Street	NA
Outcast MC	17	0	-0.98	OMG	US
Rebels 13 MC	17	0	-0.98	OMG	Australia
Russian Gangs	17	0	-0.98	Street	Russia
Sin City Deciples MC	17	0	-0.98	OMG	US
Somali Gangs	17	0	-0.98	Street	Somalia
Tango Blast	17	0	-0.98	Prison	US
Texas Chicano Brotherhood	17	0	-0.98	Prison	US

Texas Syndicate	17	0	-0.98	Prison	Mexico
The Cool Kids	17	0	-0.98	Street	NA
Tiny Rascal Gang	17	0	-0.98	Street	Cambodia
Tree Top Piru	17	0	-0.98	Street	US
Tribe MC	17	0	-0.98	OMG	NA
Warlocks MC	17	0	-0.98	OMG	US
Wheels of Soul MC	17	0	-0.98	OMG	US
Zulus MC	17	0	-0.98	OMG	US

Closeness Centrality

Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Juggalos	1	0.0003	0.66	Street	US
Mexican Mafia	1	0.0003	0.66	Prison	US
Crips	2	0.000299	0.65	Street	US
Bloods	3	0.000298	0.63	Street	US
Sureños	3	0.000298	0.63	Street	US
Aryan Brotherhood	4	0.000297	0.62	Prison	US
Aryan Nation	4	0.000297	0.62	Street	US
La Raza	4	0.000297	0.62	Street	Mexico
Mexikanemi	4	0.000297	0.62	Prison	US
Nazi Low Riders	4	0.000297	0.62	Prison	US
Gangster Disciples	5	0.000296	0.61	Street	US
Latin Kings	5	0.000296	0.61	Street	US
Peckerwood	5	0.000296	0.61	Street	US
People Nation	5	0.000296	0.61	Street	US
Vatos Locos	5	0.000296	0.61	Street	Mexico
Vice Lords	5	0.000296	0.61	Street	US
Zoe Pound	5	0.000296	0.61	Street	Haiti
18th St	6	0.000295	0.60	Street	El Salvador
Black Disciples	6	0.000295	0.60	Street	US
Black Guerrilla Family	6	0.000295	0.60	Prison	US
Black P Stones	6	0.000295	0.60	Street	US
Folk Nation	6	0.000295	0.60	Street	US
Norteros	6	0.000295	0.60	Street	US
Outlaws MC	6	0.000295	0.60	OMG	US
Piru	6	0.000295	0.60	Street	US
Aryan Circle	7	0.000294	0.59	Prison	US
Black Angels	7	0.000294	0.59	Street	US
Black Panther	7	0.000294	0.59	Street	US
Florencia 13	7	0.000294	0.59	Street	US
Maniac Latin Disciples	7	0.000294	0.59	Street	US
MS-13	7	0.000294	0.59	Street	El Salvador

Nuestra Familia	7	0.000294	0.59	Prison	US
Traveling Vice Lords	7	0.000294	0.59	Street	US
Five Percenter	8	0.000293	0.58	Street	US
Imperial Gangster Disciples	8	0.000293	0.58	Street	Puerto Rico
Insane Gangster Disciple	8	0.000293	0.58	Street	US
Sex Money Murder	8	0.000293	0.58	Street	US
Asian Boyz (Crips)	9	0.000292	0.57	Street	Cambodia
Athens Park Bloods	9	0.000292	0.57	Street	US
Conservative Vice Lords	9	0.000292	0.57	Street	US
Four Corner Hustlers	9	0.000292	0.57	Street	US
Hells Angels	9	0.000292	0.57	OMG	US
Insane Unknowns	9	0.000292	0.57	Street	Puerto Rico
Latin Counts	9	0.000292	0.57	Street	Mexico
Ñetas	9	0.000292	0.57	Prison	Puerto Rico
Rollin 20s Crips	9	0.000292	0.57	Street	US
Rollin 30s Crips	9	0.000292	0.57	Street	Belize
Rollin 40s Crips	9	0.000292	0.57	Street	US
Rollin 60s Crips	9	0.000292	0.57	Street	US
Satans Disciples	9	0.000292	0.57	Street	US
Shotgun Crips	9	0.000292	0.57	Street	US
Sons of Samoa	9	0.000292	0.57	Street	Samoa
Spanish Cobras	9	0.000292	0.57	Street	Puerto Rico
White Aryan Resistance	9	0.000292	0.57	Street	US
White Power	9	0.000292	0.57	Street	US
White Supremacists	9	0.000292	0.57	Street	US
Border Brothers	10	0.000291	0.56	Prison	Mexico
Bounty Hunter Bloods	10	0.000291	0.56	Street	US
Dirty White Boys	10	0.000291	0.56	Prison	US
Hammerskins	10	0.000291	0.56	Street	US
Hilltop Crips	10	0.000291	0.56	Street	US
Money Over Bitches	10	0.000291	0.56	Street	US
Neo Nazi	10	0.000291	0.56	Street	UK
Nine Trey Gangster Blood	10	0.000291	0.56	Street	US
Pagans MC	10	0.000291	0.56	OMG	US
Raza Unida	10	0.000291	0.56	Prison	US
Six Deuce Brim	10	0.000291	0.56	Street	US
Sons of Silence MC	10	0.000291	0.56	OMG	US
Supreme White Power	10	0.000291	0.56	Prison	US
Vagos MC	10	0.000291	0.56	OMG	US
Skinheads	11	0.00029	0.55	Street	UK
Dead Man Incorporated	12	0.000289	0.54	Prison	US
Mongols MC	12	0.000289	0.54	OMG	US

Trinitarios	12	0.000289	0.54	Street	Dominican Republic
Black Pistons MC	13	0.000288	0.53	OMG	Germany
Prison Motorcycle Brotherhood	13	0.000288	0.53	Prison	US
Desperados MC	14	0.000285	0.49	OMG	NA
Devils Disciples MC	14	0.000285	0.49	OMG	US
El Forastero MC	14	0.000285	0.49	OMG	US
Grape Street Crips	14	0.000285	0.49	Street	US
Hoover Gangsters	14	0.000285	0.49	Street	US
Red Devils MC	14	0.000285	0.49	OMG	Canada
Renegades MC	14	0.000285	0.49	OMG	US
Rough Riders MC	15	0.000284	0.48	OMG	US
Bandidos MC	16	0.000282	0.46	OMG	US
Grupo 25	17	0.00008	-1.73	Prison	Puerto Rico
Grupo 27	17	0.00008	-1.73	Prison	Puerto Rico
Avengers MC	18	0.000079	-1.74	OMG	US
Bandits	18	0.000079	-1.74	Street	NA
Brown Pride	18	0.000079	-1.74	Street	NA
Click Clack	18	0.000079	-1.74	Street	NA
Code Red	18	0.000079	-1.74	Street	NA
Diablos MC	18	0.000079	-1.74	OMG	US
Hard Times	18	0.000079	-1.74	Street	NA
Iron Horsemen MC	18	0.000079	-1.74	OMG	US
Midnight Riders MC	18	0.000079	-1.74	OMG	NA
Native Mob	18	0.000079	-1.74	Street	US
Oriental Boy Soldiers	18	0.000079	-1.74	Street	NA
Outcast MC	18	0.000079	-1.74	OMG	US
Rebels 13 MC	18	0.000079	-1.74	OMG	Australia
Russian Gangs	18	0.000079	-1.74	Street	Russia
Sin City Deciples MC	18	0.000079	-1.74	OMG	US
Somali Gangs	18	0.000079	-1.74	Street	Somalia
Tango Blast	18	0.000079	-1.74	Prison	US
Texas Chicano Brotherhood	18	0.000079	-1.74	Prison	US
Texas Syndicate	18	0.000079	-1.74	Prison	Mexico
The Cool Kids	18	0.000079	-1.74	Street	NA
Tiny Rascal Gang	18	0.000079	-1.74	Street	Cambodia
Tree Top Piru	18	0.000079	-1.74	Street	US
Tribe MC	18	0.000079	-1.74	OMG	NA
Warlocks MC	18	0.000079	-1.74	OMG	US
Wheels of Soul MC	18	0.000079	-1.74	OMG	US
Zulus MC	18	0.000079	-1.74	OMG	US

Betweenness Centrality

Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Crips	1	1049.08	5.86	Street	US
Mexican Mafia	2	781.29	4.26	Prison	US
Bloods	3	716.03	3.87	Street	US
Juggalos	4	689.87	3.72	Street	US
Aryan Nation	5	419.54	2.11	Street	US
Sureños	6	418.20	2.10	Street	US
Hells Angels	7	404.00	2.02	OMG	US
Aryan Brotherhood	8	403.23	2.01	Prison	US
Outlaws MC	9	259.12	1.16	OMG	US
Zoe Pound	10	211.86	0.87	Street	Haiti
Nazi Low Riders	11	173.19	0.64	Prison	US
La Raza	12	157.12	0.55	Street	Mexico
Peckerwood	13	124.02	0.35	Street	US
Black Guerrilla Family	14	105.07	0.24	Prison	US
Black P Stones	15	101.27	0.22	Street	US
Pagans MC	16	100.29	0.21	OMG	US
Latin Kings	17	94.88	0.18	Street	US
Mongols MC	18	94.14	0.17	OMG	US
Rollin 30s Crips	19	82.50	0.10	Street	Belize
Shotgun Crips	20	79.50	0.09	Street	US
Norteños	21	77.16	0.07	Street	US
Aryan Circle	22	75.85	0.07	Prison	US
Mexikanemi	23	75.48	0.06	Prison	US
Vatos Locos	24	72.78	0.05	Street	Mexico
Gangster Disciples	25	70.10	0.03	Street	US
Vice Lords	26	65.22	0.00	Street	US
People Nation	27	64.71	0.00	Street	US
18th St	28	51.21	-0.08	Street	El Salvador
Folk Nation	29	40.61	-0.14	Street	US
Black Panther	30	36.85	-0.17	Street	US
Piru	31	31.53	-0.20	Street	US
Nuestra Familia	32	28.39	-0.22	Prison	US
Black Disciples	33	21.45	-0.26	Street	US
Maniac Latin Disciples	34	19.87	-0.27	Street	US
White Aryan Resistance	35	17.44	-0.28	Street	US
White Power	35	17.44	-0.28	Street	US
White Supremacists	35	17.44	-0.28	Street	US
Sons of Silence MC	36	17.29	-0.28	OMG	US
Vagos MC	37	17.29	-0.28	OMG	US
Neo Nazi	38	10.25	-0.33	Street	UK
Traveling Vice Lords	39	8.99	-0.33	Street	US

Supreme White Power	40	8.36	-0.34	Prison	US
Florencia 13	41	4.66	-0.36	Street	US
Grape Street Crips	42	2.50	-0.37	Street	US
Sex Money Murder	43	2.30	-0.37	Street	US
Rollin 20s Crips	44	2.00	-0.37	Street	US
Conservative Vice Lords	45	1.91	-0.37	Street	US
Hammerskins	46	1.90	-0.37	Street	US
MS-13	47	1.78	-0.38	Street	El Salvador
Ñetas	48	1.27	-0.38	Prison	Puerto Rico
Imperial Gangster Disciples	49	1.09	-0.38	Street	Puerto Rico
Hoover Gangsters	50	1.00	-0.38	Street	US
Insane Gangster Disciple	51	0.95	-0.38	Street	US
Border Brothers	52	0.73	-0.38	Prison	Mexico
Four Corner Hustlers	53	0.67	-0.38	Street	US
Insane Unknowns	53	0.67	-0.38	Street	Puerto Rico
Athens Park Bloods	54	0.67	-0.38	Street	US
Asian Boyz (Crips)	55	0.50	-0.38	Street	Cambodia
Dead Man Incorporated	56	0.25	-0.38	Prison	US
Satans Disciples	57	0.24	-0.38	Street	US
Avengers MC	58	0.00	-0.39	OMG	US
Bandidos MC	58	0.00	-0.39	OMG	US
Bandits	58	0.00	-0.39	Street	NA
Black Angels	58	0.00	-0.39	Street	US
Black Pistons MC	58	0.00	-0.39	OMG	Germany
Bounty Hunter Bloods	58	0.00	-0.39	Street	US
Brown Pride	58	0.00	-0.39	Street	NA
Click Clack	58	0.00	-0.39	Street	NA
Code Red	58	0.00	-0.39	Street	NA
Desperados MC	58	0.00	-0.39	OMG	NA
Devils Disciples MC	58	0.00	-0.39	OMG	US
Diablos MC	58	0.00	-0.39	OMG	US
Dirty White Boys	58	0.00	-0.39	Prison	US
El Forastero MC	58	0.00	-0.39	OMG	US
Five Percenters	58	0.00	-0.39	Street	US
Grupo 25	58	0.00	-0.39	Prison	Puerto Rico
Grupo 27	58	0.00	-0.39	Prison	Puerto Rico
Hard Times	58	0.00	-0.39	Street	NA
Hilltop Crips	58	0.00	-0.39	Street	US
Iron Horsemen MC	58	0.00	-0.39	OMG	US
Latin Counts	58	0.00	-0.39	Street	Mexico
Midnight Riders MC	58	0.00	-0.39	OMG	NA
Money Over Bitches	58	0.00	-0.39	Street	US
Native Mob	58	0.00	-0.39	Street	US

Nine Trey Gangster Blood	58	0.00	-0.39	Street	US
Oriental Boy Soldiers	58	0.00	-0.39	Street	NA
Outcast MC	58	0.00	-0.39	OMG	US
Prison Motorcycle Brotherhood	58	0.00	-0.39	Prison	US
Raza Unida	58	0.00	-0.39	Prison	US
Rebels 13 MC	58	0.00	-0.39	OMG	Australia
Red Devils MC	58	0.00	-0.39	OMG	Canada
Renegades MC	58	0.00	-0.39	OMG	US
Rollin 40s Crips	58	0.00	-0.39	Street	US
Rollin 60s Crips	58	0.00	-0.39	Street	US
Rough Riders MC	58	0.00	-0.39	OMG	US
Russian Gangs	58	0.00	-0.39	Street	Russia
Sin City Deciples MC	58	0.00	-0.39	OMG	US
Six Deuce Brim	58	0.00	-0.39	Street	US
Skinheads	58	0.00	-0.39	Street	UK
Somali Gangs	58	0.00	-0.39	Street	Somalia
Sons of Samoa	58	0.00	-0.39	Street	Samoa
Spanish Cobras	58	0.00	-0.39	Street	Puerto Rico
Tango Blast	58	0.00	-0.39	Prison	US
Texas Chicano Brotherhood	58	0.00	-0.39	Prison	US
Texas Syndicate	58	0.00	-0.39	Prison	Mexico
The Cool Kids	58	0.00	-0.39	Street	NA
Tiny Rascal Gang	58	0.00	-0.39	Street	Cambodia
Tree Top Piru	58	0.00	-0.39	Street	US
Tribe MC	58	0.00	-0.39	OMG	NA
Trinitarios	58	0.00	-0.39	Street	Dominican Republic
Warlocks MC	58	0.00	-0.39	OMG	US
Wheels of Soul MC	58	0.00	-0.39	OMG	US
Zulus MC	58	0.00	-0.39	OMG	US

PageRank Centrality

Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Crips	1	0.0392	4.29	Street	US
Bloods	2	0.0361	3.85	Street	US
Sureños	3	0.0262	2.45	Street	US
Aryan Nation	4	0.0229	1.98	Street	US
Aryan Brotherhood	5	0.0226	1.94	Prison	US
Hells Angels	6	0.0217	1.81	OMG	US
Mexican Mafia	7	0.0208	1.69	Prison	US
Black P Stones	8	0.0185	1.36	Street	US
Latin Kings	8	0.0185	1.36	Street	US
Zoe Pound	9	0.0179	1.28	Street	Haiti

Nazi Low Riders	10	0.0177	1.25	Prison	US
Peckerwood	10	0.0177	1.25	Street	US
Black Guerrilla Family	11	0.0176	1.23	Prison	US
People Nation	12	0.0171	1.16	Street	US
Vice Lords	13	0.0169	1.14	Street	US
La Raza	14	0.0161	1.02	Street	Mexico
Gangster Disciples	15	0.0156	0.95	Street	US
Juggalos	15	0.0156	0.95	Street	US
Mongols MC	16	0.0155	0.94	OMG	US
Folk Nation	17	0.0147	0.82	Street	US
Black Disciples	18	0.0144	0.78	Street	US
Traveling Vice Lords	18	0.0144	0.78	Street	US
Neo Nazi	19	0.0134	0.64	Street	UK
White Aryan Resistance	20	0.0133	0.63	Street	US
White Power	20	0.0133	0.63	Street	US
White Supremacists	20	0.0133	0.63	Street	US
Conservative Vice Lords	21	0.0131	0.60	Street	US
Outlaws MC	22	0.0124	0.50	OMG	US
Supreme White Power	23	0.0121	0.46	Prison	US
Aryan Circle	24	0.012	0.44	Prison	US
Hammerskins	24	0.012	0.44	Street	US
Four Corner Hustlers	25	0.0119	0.43	Street	US
Insane Unknowns	25	0.0119	0.43	Street	Puerto Rico
Imperial Gangster Disciples	26	0.0117	0.40	Street	Puerto Rico
Maniac Latin Disciples	27	0.0116	0.39	Street	US
Rollin 30s Crips	28	0.0113	0.34	Street	Belize
Grupo 25	29	0.011	0.30	Prison	Puerto Rico
Grupo 27	29	0.011	0.30	Prison	Puerto Rico
Norteños	29	0.011	0.30	Street	US
Skinheads	30	0.0108	0.27	Street	UK
Black Panther	31	0.0107	0.26	Street	US
Latin Counts	31	0.0107	0.26	Street	Mexico
Rollin 20s Crips	32	0.0106	0.25	Street	US
Insane Gangster Disciple	33	0.0105	0.23	Street	US
Satans Disciples	33	0.0105	0.23	Street	US
Vatos Locos	34	0.0103	0.20	Street	Mexico
Piru	35	0.01	0.16	Street	US
Pagans MC	36	0.0099	0.15	OMG	US
Mexikanemi	37	0.0096	0.10	Prison	US
18th St	38	0.0086	-0.04	Street	El Salvador
Rollin 40s Crips	38	0.0086	-0.04	Street	US
Rollin 60s Crips	38	0.0086	-0.04	Street	US
Sex Money Murder	38	0.0086	-0.04	Street	US

MS-13	39	0.0072	-0.24	Street	El Salvador
Nuestra Familia	39	0.0072	-0.24	Prison	US
Asian Boyz (Crips)	40	0.007	-0.26	Street	Cambodia
Hoover Gangsters	40	0.007	-0.26	Street	US
Desperados MC	41	0.0069	-0.28	OMG	NA
Red Devils MC	41	0.0069	-0.28	OMG	Canada
Sons of Silence MC	42	0.0067	-0.31	OMG	US
Vagos MC	42	0.0067	-0.31	OMG	US
Grape Street Crips	43	0.0065	-0.33	Street	US
Ñetas	44	0.0064	-0.35	Prison	Puerto Rico
Border Brothers	45	0.0061	-0.39	Prison	Mexico
Florencia 13	45	0.0061	-0.39	Street	US
Shotgun Crips	46	0.006	-0.40	Street	US
Black Angels	47	0.0059	-0.42	Street	US
Black Pistons MC	47	0.0059	-0.42	OMG	Germany
Dead Man Incorporated	48	0.0058	-0.43	Prison	US
Dirty White Boys	49	0.0057	-0.45	Prison	US
Athens Park Bloods	50	0.0055	-0.48	Street	US
Five Percenter	50	0.0055	-0.48	Street	US
Sons of Samoa	51	0.005	-0.55	Street	Samoa
Six Deuce Brim	52	0.0043	-0.64	Street	US
Spanish Cobras	52	0.0043	-0.64	Street	Puerto Rico
Devils Disciples MC	53	0.004	-0.69	OMG	US
El Forastero MC	53	0.004	-0.69	OMG	US
Renegades MC	53	0.004	-0.69	OMG	US
Bandidos MC	54	0.0038	-0.72	OMG	US
Prison Motorcycle Brotherhood	54	0.0038	-0.72	Prison	US
Rough Riders MC	54	0.0038	-0.72	OMG	US
Hilltop Crips	55	0.003	-0.83	Street	US
Raza Unida	55	0.003	-0.83	Prison	US
Bounty Hunter Bloods	56	0.0029	-0.84	Street	US
Money Over Bitches	56	0.0029	-0.84	Street	US
Nine Trey Gangster Blood	56	0.0029	-0.84	Street	US
Trinitarios	56	0.0029	-0.84	Street	Dominican Republic
Avengers MC	57	0.0017	-1.01	OMG	US
Bandits	57	0.0017	-1.01	Street	NA
Brown Pride	57	0.0017	-1.01	Street	NA
Click Clack	57	0.0017	-1.01	Street	NA
Code Red	57	0.0017	-1.01	Street	NA
Diablos MC	57	0.0017	-1.01	OMG	US
Hard Times	57	0.0017	-1.01	Street	NA
Iron Horsemen MC	57	0.0017	-1.01	OMG	US

Midnight Riders MC	57	0.0017	-1.01	OMG	NA
Native Mob	57	0.0017	-1.01	Street	US
Oriental Boy Soldiers	57	0.0017	-1.01	Street	NA
Outcast MC	57	0.0017	-1.01	OMG	US
Rebels 13 MC	57	0.0017	-1.01	OMG	Australia
Russian Gangs	57	0.0017	-1.01	Street	Russia
Sin City Deciples MC	57	0.0017	-1.01	OMG	US
Somali Gangs	57	0.0017	-1.01	Street	Somalia
Tango Blast	57	0.0017	-1.01	Prison	US
Texas Chicano Brotherhood	57	0.0017	-1.01	Prison	US
Texas Syndicate	57	0.0017	-1.01	Prison	Mexico
The Cool Kids	57	0.0017	-1.01	Street	NA
Tiny Rascal Gang	57	0.0017	-1.01	Street	Cambodia
Tree Top Piru	57	0.0017	-1.01	Street	US
Tribe MC	57	0.0017	-1.01	OMG	NA
Warlocks MC	57	0.0017	-1.01	OMG	US
Wheels of Soul MC	57	0.0017	-1.01	OMG	US
Zulus MC	57	0.0017	-1.01	OMG	US

Eigenvector Centrality

Gang	Rank	Centrality Score	Zscore	Gang Type	Country
Bloods	1	1	3.57	Street	US
Vice Lords	2	0.8126	2.75	Street	US
Black P Stones	3	0.8033	2.70	Street	US
People Nation	4	0.7691	2.56	Street	US
Latin Kings	5	0.7485	2.47	Street	US
Traveling Vice Lords	6	0.7289	2.38	Street	US
Conservative Vice Lords	7	0.6822	2.17	Street	US
Four Corner Hustlers	8	0.6444	2.01	Street	US
Insane Unknowns	8	0.6444	2.01	Street	Puerto Rico
Zoe Pound	9	0.5866	1.76	Street	Haiti
Crips	10	0.5844	1.75	Street	US
Latin Counts	11	0.5793	1.72	Street	Mexico
Black Guerrilla Family	12	0.5377	1.54	Prison	US
Juggalos	13	0.5056	1.40	Street	US
Sex Money Murder	14	0.4341	1.09	Street	US
Gangster Disciples	15	0.4149	1.01	Street	US
Vatos Locos	16	0.4086	0.98	Street	Mexico
Sureños	17	0.3727	0.82	Street	US
Black Panther	18	0.3702	0.81	Street	US
Mexican Mafia	19	0.3673	0.80	Prison	US
Black Disciples	20	0.3668	0.79	Street	US

Folk Nation	21	0.3505	0.72	Street	US
Norteños	22	0.3489	0.72	Street	US
La Raza	23	0.3399	0.68	Street	Mexico
Maniac Latin Disciples	24	0.3214	0.60	Street	US
Peckerwood	25	0.3009	0.51	Street	US
Aryan Nation	26	0.2931	0.47	Street	US
Nazi Low Riders	27	0.2888	0.45	Prison	US
Piru	28	0.2803	0.42	Street	US
Imperial Gangster Disciples	29	0.2729	0.38	Street	Puerto Rico
Aryan Brotherhood	30	0.2613	0.33	Prison	US
Insane Gangster Disciple	31	0.2449	0.26	Street	US
Satans Disciples	32	0.2433	0.25	Street	US
Ñetas	33	0.2392	0.24	Prison	Puerto Rico
White Aryan Resistance	34	0.2341	0.21	Street	US
White Power	34	0.2341	0.21	Street	US
White Supremacists	34	0.2341	0.21	Street	US
Neo Nazi	35	0.2272	0.18	Street	UK
Mexikanemi	36	0.222	0.16	Prison	US
Aryan Circle	37	0.2205	0.15	Prison	US
Nuestra Familia	38	0.212	0.12	Prison	US
Supreme White Power	39	0.2021	0.07	Prison	US
Hammerskins	40	0.2017	0.07	Street	US
Athens Park Bloods	41	0.1984	0.06	Street	US
Five Percenter	42	0.1817	-0.02	Street	US
Skinheads	43	0.1766	-0.04	Street	UK
18th St	44	0.1642	-0.09	Street	El Salvador
Six Deuce Brim	45	0.1219	-0.28	Street	US
MS-13	46	0.1105	-0.33	Street	El Salvador
Dead Man Incorporated	47	0.1046	-0.35	Prison	US
Bounty Hunter Bloods	48	0.0952	-0.39	Street	US
Money Over Bitches	48	0.0952	-0.39	Street	US
Nine Trey Gangster Blood	48	0.0952	-0.39	Street	US
Spanish Cobras	49	0.089	-0.42	Street	Puerto Rico
Rollin 20s Crips	50	0.0848	-0.44	Street	US
Hells Angels	51	0.0843	-0.44	OMG	US
Dirty White Boys	52	0.0814	-0.45	Prison	US
Black Angels	53	0.081	-0.46	Street	US
Rollin 30s Crips	54	0.0795	-0.46	Street	Belize
Rollin 40s Crips	55	0.0788	-0.47	Street	US
Rollin 60s Crips	55	0.0788	-0.47	Street	US
Florencia 13	56	0.076	-0.48	Street	US
Asian Boyz (Crips)	57	0.0696	-0.51	Street	Cambodia
Outlaws MC	58	0.0634	-0.53	OMG	US

Sons of Samoa	59	0.0623	-0.54	Street	Samoa
Border Brothers	60	0.0584	-0.56	Prison	Mexico
Shotgun Crips	61	0.0562	-0.56	Street	US
Trinitarios	62	0.0559	-0.57	Street	Dominican Republic
Hilltop Crips	63	0.0556	-0.57	Street	US
Pagans MC	64	0.0555	-0.57	OMG	US
Sons of Silence MC	65	0.055	-0.57	OMG	US
Vagos MC	65	0.055	-0.57	OMG	US
Raza Unida	66	0.0355	-0.66	Prison	US
Mongols MC	67	0.0228	-0.71	OMG	US
Desperados MC	68	0.0089	-0.77	OMG	NA
Red Devils MC	68	0.0089	-0.77	OMG	Canada
Black Pistons MC	69	0.0082	-0.77	OMG	Germany
Grape Street Crips	69	0.0082	-0.77	Street	US
Devils Disciples MC	70	0.008	-0.78	OMG	US
El Forastero MC	70	0.008	-0.78	OMG	US
Renegades MC	70	0.008	-0.78	OMG	US
Hoover Gangsters	71	0.0061	-0.78	Street	US
Prison Motorcycle Brotherhood	72	0.006	-0.78	Prison	US
Rough Riders MC	73	0.0053	-0.79	OMG	US
Bandidos MC	74	0.0022	-0.80	OMG	US
Avengers MC	75	0	-0.81	OMG	US
Bandits	75	0	-0.81	Street	NA
Brown Pride	75	0	-0.81	Street	NA
Click Clack	75	0	-0.81	Street	NA
Code Red	75	0	-0.81	Street	NA
Diablos MC	75	0	-0.81	OMG	US
Grupo 25	75	0	-0.81	Prison	Puerto Rico
Grupo 27	75	0	-0.81	Prison	Puerto Rico
Hard Times	75	0	-0.81	Street	NA
Iron Horsemen MC	75	0	-0.81	OMG	US
Midnight Riders MC	75	0	-0.81	OMG	NA
Native Mob	75	0	-0.81	Street	US
Oriental Boy Soldiers	75	0	-0.81	Street	NA
Outcast MC	75	0	-0.81	OMG	US
Rebels 13 MC	75	0	-0.81	OMG	Australia
Russian Gangs	75	0	-0.81	Street	Russia
Sin City Deciples MC	75	0	-0.81	OMG	US
Somali Gangs	75	0	-0.81	Street	Somalia
Tango Blast	75	0	-0.81	Prison	US
Texas Chicano Brotherhood	75	0	-0.81	Prison	US
Texas Syndicate	75	0	-0.81	Prison	Mexico

The Cool Kids	75	0	-0.81	Street	NA
Tiny Rascal Gang	75	0	-0.81	Street	Cambodia
Tree Top Piru	75	0	-0.81	Street	US
Tribe MC	75	0	-0.81	OMG	NA
Warlocks MC	75	0	-0.81	OMG	US
Wheels of Soul MC	75	0	-0.81	OMG	US
Zulus MC	75	0	-0.81	OMG	US

Aggregate Network Centrality				
Baseline Model				
Gang	Aggregate Zscore	Centrality Rank	Gang Type	Country
Crips	3.90	1	Street	US
Bloods	3.67	2	Street	US
Aryan Brotherhood	1.82	3	Prison	US
Sureños	1.67	4	Street	US
Aryan Nation	1.63	5	Street	US
Latin Kings	1.21	6	Street	US
Black P Stones	1.12	7	Street	US
Gangster Disciples	1.05	8	Street	US
Norteños	1.02	9	Street	US
Black Guerrilla Family	0.99	10	Prison	US
Sinaloa Cartel	0.98	11	Cartel	Mexico
MS-13	0.97	12	Street	El Salvador
Black Disciples	0.91	13	Street	US
Zoe Pound	0.77	14	Street	Haiti
Mexican Mafia	0.76	15	Prison	US
Outlaws MC	0.70	16	OMG	US
Gulf Cartel	0.63	17	Cartel	Mexico
Peckerwood	0.61	18	Street	US
Zetas Cartel	0.60	19	Cartel	Mexico
Hells Angels	0.59	20	OMG	US
Folk Nation	0.55	21	Street	US
People Nation	0.55	21	Street	US
Traveling Vice Lords	0.54	22	Street	US
Nazi Low Riders	0.54	22	Prison	US
Aryan Circle	0.50	23	Prison	US
La Raza	0.50	23	Street	Mexico
Neo Nazi	0.42	24	Street	UK
White Power	0.42	24	Street	US
White Supremacists	0.42	24	Street	US

Vice Lords	0.40	25	Street	US
Conservative Vice Lords	0.38	26	Street	US
Skinheads	0.38	26	Street	UK
White Aryan Resistance	0.37	27	Street	US
Pagans MC	0.36	28	OMG	US
Supreme White Power	0.33	29	Prison	US
Tijuana Cartel	0.32	30	Cartel	Mexico
Black Panther	0.32	30	Street	US
Hammerskins	0.31	31	Street	US
Mexikanemi	0.29	32	Prison	US
Bandidos MC	0.28	33	OMG	US
Imperial Gangster Disciples	0.23	34	Street	Puerto Rico
Four Corner Hustlers	0.22	35	Street	US
Insane Unknowns	0.22	35	Street	Puerto Rico
Latin Counts	0.22	35	Street	Mexico
Nuestra Familia	0.22	35	Prison	US
Piru	0.21	36	Street	US
Insane Gangster Disciple	0.18	37	Street	US
Maniac Latin Disciples	0.18	37	Street	US
Satans Disciples	0.18	37	Street	US
Juarez Cartel	0.13	38	Cartel	Mexico
La Familia Michoacana Cartel	0.12	39	Cartel	Mexico
Ñetas	0.11	40	Prison	Puerto Rico
Five Percenter	0.09	41	Street	US
Rollin 60s Crips	0.08	42	Street	US
Vatos Locos	0.07	43	Street	Mexico
Juggalos	0.05	44	Street	US
18th St	0.01	45	Street	El Salvador
Florencia 13	-0.05	46	Street	US
Border Brothers	-0.09	47	Prison	Mexico
Spanish Cobras	-0.10	48	Street	Puerto Rico
Rollin 20s Crips	-0.11	49	Street	US
Trinitarios	-0.12	50	Street	Dominican Republic
Texas Syndicate	-0.13	51	Prison	Mexico
Mongols MC	-0.14	52	OMG	US
Rollin 40s Crips	-0.14	52	Street	US
Rollin 30s Crips	-0.14	52	Street	Belize
Sex Money Murder	-0.17	53	Street	US
Vagos MC	-0.19	54	OMG	US
Hoover Gangsters	-0.21	55	Street	US
Tiny Rascal Gang	-0.22	56	Street	Cambodia

Desperados MC	-0.26	57	OMG	NA
Red Devils MC	-0.26	57	OMG	Canada
JalNewGen Cartel	-0.30	58	Cartel	Mexico
Black Angels	-0.30	58	Street	US
Dead Man Incorporated	-0.31	59	Prison	US
Grape Street Crips	-0.32	60	Street	US
Bounty Hunter Bloods	-0.32	60	Street	US
Shotgun Crips	-0.32	60	Street	US
Sons of Silence MC	-0.32	60	OMG	US
BelLey Cartel	-0.33	61	Cartel	Mexico
Asian Boyz (Crips)	-0.34	62	Street	Cambodia
Sons of Samoa	-0.36	63	Street	Samoa
Tree Top Piru	-0.36	63	Street	US
Dirty White Boys	-0.36	63	Prison	US
Black Pistons MC	-0.36	63	OMG	Germany
Athens Park Bloods	-0.39	64	Street	US
El Forastero MC	-0.43	65	OMG	US
Native Mob	-0.43	65	Street	US
Wheels of Soul MC	-0.44	66	OMG	US
Grupo 27	-0.44	66	Prison	Puerto Rico
Raza Unida	-0.47	67	Prison	US
Six Deuce Brim	-0.48	68	Street	US
Texas Chicano Brotherhood	-0.53	69	Prison	US
Hilltop Crips	-0.56	70	Street	US
Money Over Bitches	-0.56	70	Street	US
Nine Trey Gangster Blood	-0.56	70	Street	US
Warlocks MC	-0.57	71	OMG	US
Renegades MC	-0.58	72	OMG	US
Tango Blast	-0.60	73	Prison	US
Brown Pride	-0.61	74	Street	NA
Avengers MC	-0.68	75	OMG	US
Rough Riders MC	-0.68	75	OMG	US
Tribe MC	-0.68	75	OMG	NA
Diablos MC	-0.68	75	OMG	US
Iron Horsemen MC	-0.68	75	OMG	US
Prison Motorcycle Brotherhood	-0.68	75	Prison	US
Devils Disciples MC	-0.68	75	OMG	US
Grupo 25	-0.69	76	Prison	Puerto Rico
Outcast MC	-0.69	76	OMG	US
Rebels 13 MC	-0.69	76	OMG	Australia
Bandits	-1.38	77	Street	NA

Click Clack	-1.38	77	Street	NA
Code Red	-1.38	77	Street	NA
Hard Times	-1.38	77	Street	NA
Midnight Riders MC	-1.38	77	OMG	NA
Oriental Boy Soldiers	-1.38	77	Street	NA
Russian Gangs	-1.38	77	Street	Russia
Sin City Deciples MC	-1.38	77	OMG	US
Somali Gangs	-1.38	77	Street	Somalia
The Cool Kids	-1.38	77	Street	NA
Zulus MC	-1.38	77	OMG	US

Gang Nexus Model 1

Gang	Aggregate Zscore	Centrality Rank	Gang Type	Country
Crips	3.52	1	Street	US
Bloods	2.94	2	Street	US
Sinaloa Cartel	2.86	3	Cartel	Mexico
Sureños	2.10	4	Street	US
Latin Kings	1.56	5	Street	US
Mexican Mafia	1.54	6	Prison	US
Gulf Cartel	1.45	7	Cartel	Mexico
Aryan Brotherhood	1.43	8	Prison	US
Aryan Nation	1.43	8	Street	US
Zetas Cartel	1.27	9	Cartel	Mexico
Zoe Pound	1.09	10	Street	Haiti
Hells Angels	1.06	11	OMG	US
Black P Stones	1.01	12	Street	US
Tijuana Cartel	0.98	13	Cartel	Mexico
Peckerwood	0.97	14	Street	US
Black Guerrilla Family	0.94	15	Prison	US
Gangster Disciples	0.88	16	Street	US
Juggalos	0.87	17	Street	US
La Familia Michoacana Cartel	0.85	18	Cartel	Mexico
Nazi Low Riders	0.79	19	Prison	US
Vice Lords	0.69	20	Street	US
Norteños	0.68	21	Street	US
People Nation	0.67	22	Street	US
La Raza	0.66	23	Street	Mexico
Conservative Vice Lords	0.64	24	Street	US
Juarez Cartel	0.50	25	Cartel	Mexico
Traveling Vice Lords	0.48	26	Street	US
Mexikanemi	0.39	27	Prison	US

Folk Nation	0.35	28	Street	US
Black Disciples	0.34	29	Street	US
Four Corner Hustlers	0.29	30	Street	US
Insane Unknowns	0.29	30	Street	Puerto Rico
MS-13	0.28	31	Street	El Salvador
White Aryan Resistance	0.26	32	Street	US
White Power	0.26	32	Street	US
White Supremacists	0.26	32	Street	US
Neo Nazi	0.24	33	Street	UK
Latin Counts	0.18	34	Street	Mexico
Aryan Circle	0.17	35	Prison	US
Vatos Locos	0.17	35	Street	Mexico
Maniac Latin Disciples	0.17	35	Street	US
18th St	0.16	36	Street	El Salvador
Black Panther	0.16	36	Street	US
Supreme White Power	0.15	37	Prison	US
Imperial Gangster Disciples	0.13	38	Street	Puerto Rico
Hammerskins	0.13	38	Street	US
Outlaws MC	0.12	39	OMG	US
Rollin 60s Crips	0.10	40	Street	US
Mongols MC	0.09	41	OMG	US
Insane Gangster Disciple	0.05	42	Street	US
Sex Money Murder	0.04	43	Street	US
Satans Disciples	0.04	43	Street	US
Florencia 13	0.03	44	Street	US
Skinheads	0.03	44	Street	UK
Piru	0.02	45	Street	US
Border Brothers	0.01	46	Prison	Mexico
Rollin 30s Crips	0.01	46	Street	Belize
Nuestra Familia	-0.02	47	Prison	US
Vagos MC	-0.05	48	OMG	US
JalNewGen Cartel	-0.06	49	Cartel	Mexico
Pagans MC	-0.06	49	OMG	US
Rollin 20s Crips	-0.12	50	Street	US
Bandidos MC	-0.17	51	OMG	US
Ñetas	-0.18	52	Prison	Puerto Rico
BelLey Cartel	-0.19	53	Cartel	Mexico
Rollin 40s Crips	-0.21	54	Street	US
Shotgun Crips	-0.23	55	Street	US
Black Angels	-0.26	56	Street	US
Five Percenter	-0.27	57	Street	US

Athens Park Bloods	-0.27	57	Street	US
Dirty White Boys	-0.28	58	Prison	US
Asian Boyz (Crips)	-0.29	59	Street	Cambodia
Sons of Silence MC	-0.29	59	OMG	US
Dead Man Incorporated	-0.30	60	Prison	US
Raza Unida	-0.35	61	Prison	US
Texas Syndicate	-0.36	62	Prison	Mexico
Sons of Samoa	-0.37	63	Street	Samoa
Six Deuce Brim	-0.37	63	Street	US
Spanish Cobras	-0.38	64	Street	Puerto Rico
Desperados MC	-0.38	64	OMG	NA
Red Devils MC	-0.38	64	OMG	Canada
Hoover Gangsters	-0.39	65	Street	US
Grape Street Crips	-0.40	66	Street	US
Black Pistons MC	-0.42	67	OMG	Germany
Brown Pride	-0.45	68	Street	NA
Bounty Hunter Bloods	-0.46	69	Street	US
Money Over Bitches	-0.46	69	Street	US
Nine Trey Gangster Blood	-0.46	69	Street	US
Hilltop Crips	-0.46	69	Street	US
Texas Chicano Brotherhood	-0.47	70	Prison	US
Trinitarios	-0.48	71	Street	Dominican Republic
Devils Disciples MC	-0.49	72	OMG	US
El Forastero MC	-0.49	72	OMG	US
Renegades MC	-0.49	72	OMG	US
Prison Motorcycle Brotherhood	-0.50	73	Prison	US
Rough Riders MC	-0.51	74	OMG	US
Grupo 25	-0.78	75	Prison	Puerto Rico
Grupo 27	-0.78	75	Prison	Puerto Rico
Avengers MC	-1.06	76	OMG	US
Bandits	-1.06	76	Street	NA
Click Clack	-1.06	76	Street	NA
Code Red	-1.06	76	Street	NA
Diablos MC	-1.06	76	OMG	US
Hard Times	-1.06	76	Street	NA
Iron Horsemen MC	-1.06	76	OMG	US
Midnight Riders MC	-1.06	76	OMG	NA
Native Mob	-1.06	76	Street	US
Oriental Boy Soldiers	-1.06	76	Street	NA
Outcast MC	-1.06	76	OMG	US

Rebels 13 MC	-1.06	76	OMG	Australia
Russian Gangs	-1.06	76	Street	Russia
Sin City Deciples MC	-1.06	76	OMG	US
Somali Gangs	-1.06	76	Street	Somalia
Tango Blast	-1.06	76	Prison	US
The Cool Kids	-1.06	76	Street	NA
Tiny Rascal Gang	-1.06	76	Street	Cambodia
Tree Top Piru	-1.06	76	Street	US
Tribe MC	-1.06	76	OMG	NA
Warlocks MC	-1.06	76	OMG	US
Wheels of Soul MC	-1.06	76	OMG	US
Zulus MC	-1.06	76	OMG	US
Gang Nexus Model 2				
Gangs	Aggregate Zscore	Centrality Rank	Gang Type	Country
Crips	3.24	1	Street	US
Bloods	3.11	2	Street	US
Mexican Mafia	1.79	3	Prison	US
Sureños	1.66	4	Street	US
Juggalos	1.57	5	Street	US
Aryan Nation	1.38	6	Street	US
Black P Stones	1.32	7	Street	US
Aryan Brotherhood	1.29	8	Prison	US
Latin Kings	1.27	9	Street	US
Vice Lords	1.20	10	Street	US
People Nation	1.17	11	Street	US
Zoe Pound	1.17	11	Street	Haiti
Black Guerrilla Family	0.99	12	Prison	US
Traveling Vice Lords	0.91	13	Street	US
Hells Angels	0.90	14	OMG	US
Nazi Low Riders	0.86	15	Prison	US
Peckerwood	0.85	16	Street	US
La Raza	0.80	17	Street	Mexico
Conservative Vice Lords	0.78	18	Street	US
Gangster Disciples	0.75	19	Street	US
Four Corner Hustlers	0.68	20	Street	US
Insane Unknowns	0.68	20	Street	Puerto Rico
Folk Nation	0.59	21	Street	US
Black Disciples	0.57	22	Street	US
Latin Counts	0.55	23	Street	Mexico
Vatos Locos	0.44	24	Street	Mexico

White Aryan Resistance	0.42	25	Street	US
White Power	0.42	25	Street	US
White Supremacists	0.42	25	Street	US
Norteros	0.41	26	Street	US
Aryan Circle	0.40	27	Prison	US
Neo Nazi	0.40	27	Street	UK
Maniac Latin Disciples	0.37	28	Street	US
Black Panther	0.37	28	Street	US
Outlaws MC	0.34	29	OMG	US
Imperial Gangster Disciples	0.31	30	Street	Puerto Rico
Supreme White Power	0.30	31	Prison	US
Hammerskins	0.29	32	Street	US
Sex Money Murder	0.29	32	Street	US
Piru	0.23	33	Street	US
Mexikanemi	0.23	33	Prison	US
Mongols MC	0.22	34	OMG	US
Insane Gangster Disciple	0.21	35	Street	US
Satans Disciples	0.21	35	Street	US
Skinheads	0.19	36	Street	UK
Rollin 30s Crips	0.11	37	Street	Belize
18th St	0.08	38	Street	El Salvador
Pagans MC	0.03	39	OMG	US
Nuestra Familia	0.01	40	Prison	US
Rollin 20s Crips	0.00	41	Street	US
Ñetas	-0.03	42	Prison	Puerto Rico
Rollin 40s Crips	-0.10	43	Street	US
Rollin 60s Crips	-0.10	43	Street	US
MS-13	-0.11	44	Street	El Salvador
Athens Park Bloods	-0.13	45	Street	US
Five Percenters	-0.14	46	Street	US
Shotgun Crips	-0.18	47	Street	US
Asian Boyz (Crips)	-0.20	48	Street	Cambodia
Sons of Silence MC	-0.20	48	OMG	US
Vagos MC	-0.20	48	OMG	US
Dead Man Incorporated	-0.21	49	Prison	US
Florencia 13	-0.21	49	Street	US
Black Angels	-0.21	49	Street	US
Dirty White Boys	-0.23	50	Prison	US
Border Brothers	-0.23	50	Prison	Mexico
Six Deuce Brim	-0.27	51	Street	US
Spanish Cobras	-0.29	52	Street	Puerto Rico

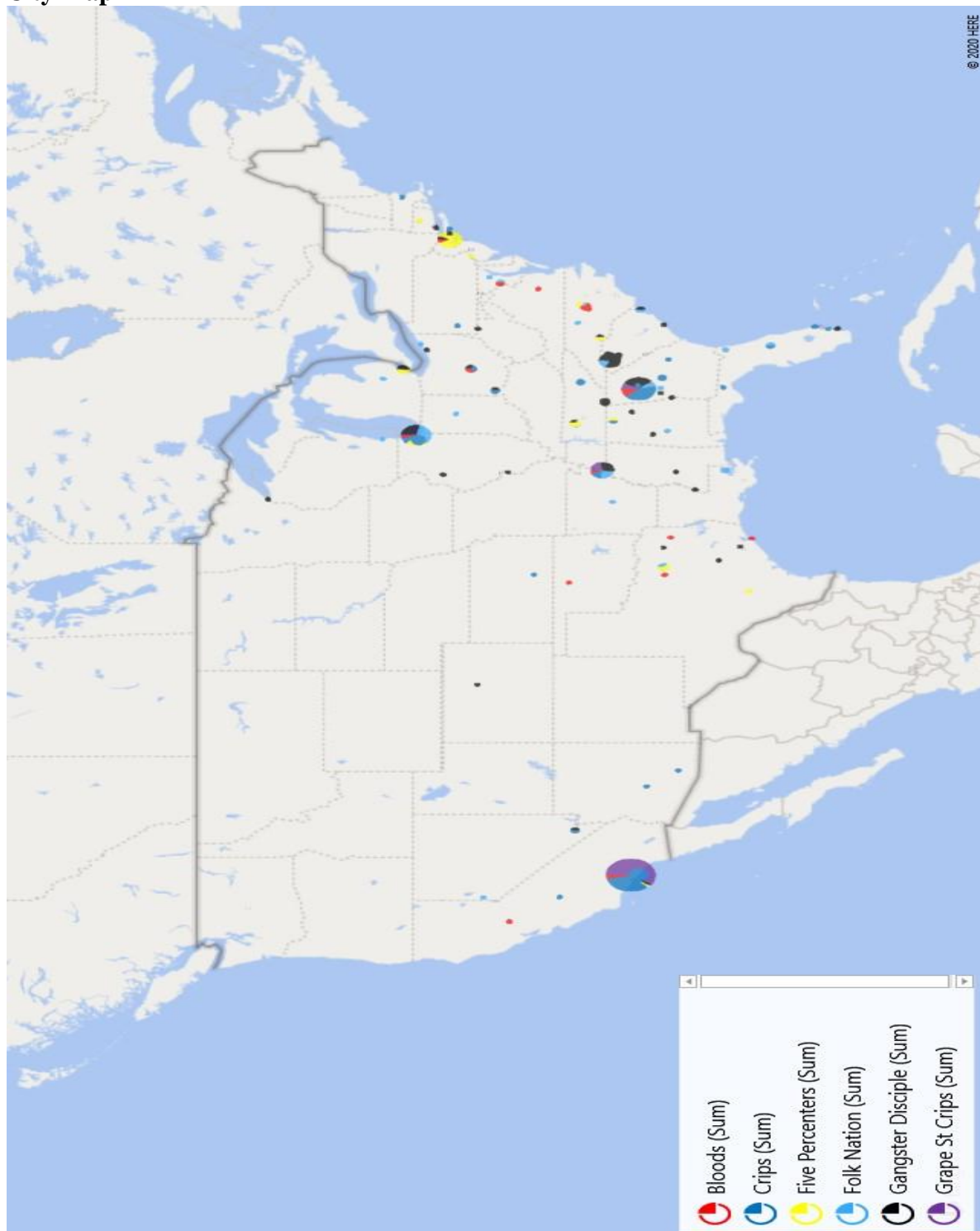
Sons of Samoa	-0.30	53	Street	Samoa
Hoover Gangsters	-0.30	53	Street	US
Desperados MC	-0.31	54	OMG	NA
Red Devils MC	-0.31	54	OMG	Canada
Grape Street Crips	-0.32	55	Street	US
Black Pistons MC	-0.33	56	OMG	Germany
Bounty Hunter Bloods	-0.37	57	Street	US
Money Over Bitches	-0.37	57	Street	US
Nine Trey Gangster Blood	-0.37	57	Street	US
Hilltop Crips	-0.40	58	Street	US
Trinitarios	-0.41	59	Street	Dominican Republic
Raza Unida	-0.42	60	Prison	US
Devils Disciples MC	-0.43	61	OMG	US
El Forastero MC	-0.43	61	OMG	US
Renegades MC	-0.43	61	OMG	US
Prison Motorcycle Brotherhood	-0.43	61	Prison	US
Rough Riders MC	-0.44	62	OMG	US
Bandidos MC	-0.44	62	OMG	US
Grupo 25	-0.68	63	Prison	Puerto Rico
Grupo 27	-0.68	63	Prison	Puerto Rico
Avengers MC	-0.99	64	OMG	US
Bandits	-0.99	64	Street	NA
Brown Pride	-0.99	64	Street	NA
Click Clack	-0.99	64	Street	NA
Code Red	-0.99	64	Street	NA
Diablos MC	-0.99	64	OMG	US
Hard Times	-0.99	64	Street	NA
Iron Horsemen MC	-0.99	64	OMG	US
Midnight Riders MC	-0.99	64	OMG	NA
Native Mob	-0.99	64	Street	US
Oriental Boy Soldiers	-0.99	64	Street	NA
Outcast MC	-0.99	64	OMG	US
Rebels 13 MC	-0.99	64	OMG	Australia
Russian Gangs	-0.99	64	Street	Russia
Sin City Deciples MC	-0.99	64	OMG	US
Somali Gangs	-0.99	64	Street	Somalia
Tango Blast	-0.99	64	Prison	US
Texas Chicano Brotherhood	-0.99	64	Prison	US
Texas Syndicate	-0.99	64	Prison	Mexico
The Cool Kids	-0.99	64	Street	NA

Tiny Rascal Gang	-0.99	64	Street	Cambodia
Tree Top Piru	-0.99	64	Street	US
Tribe MC	-0.99	64	OMG	NA
Warlocks MC	-0.99	64	OMG	US
Wheels of Soul MC	-0.99	64	OMG	US
Zulus MC	-0.99	64	OMG	US

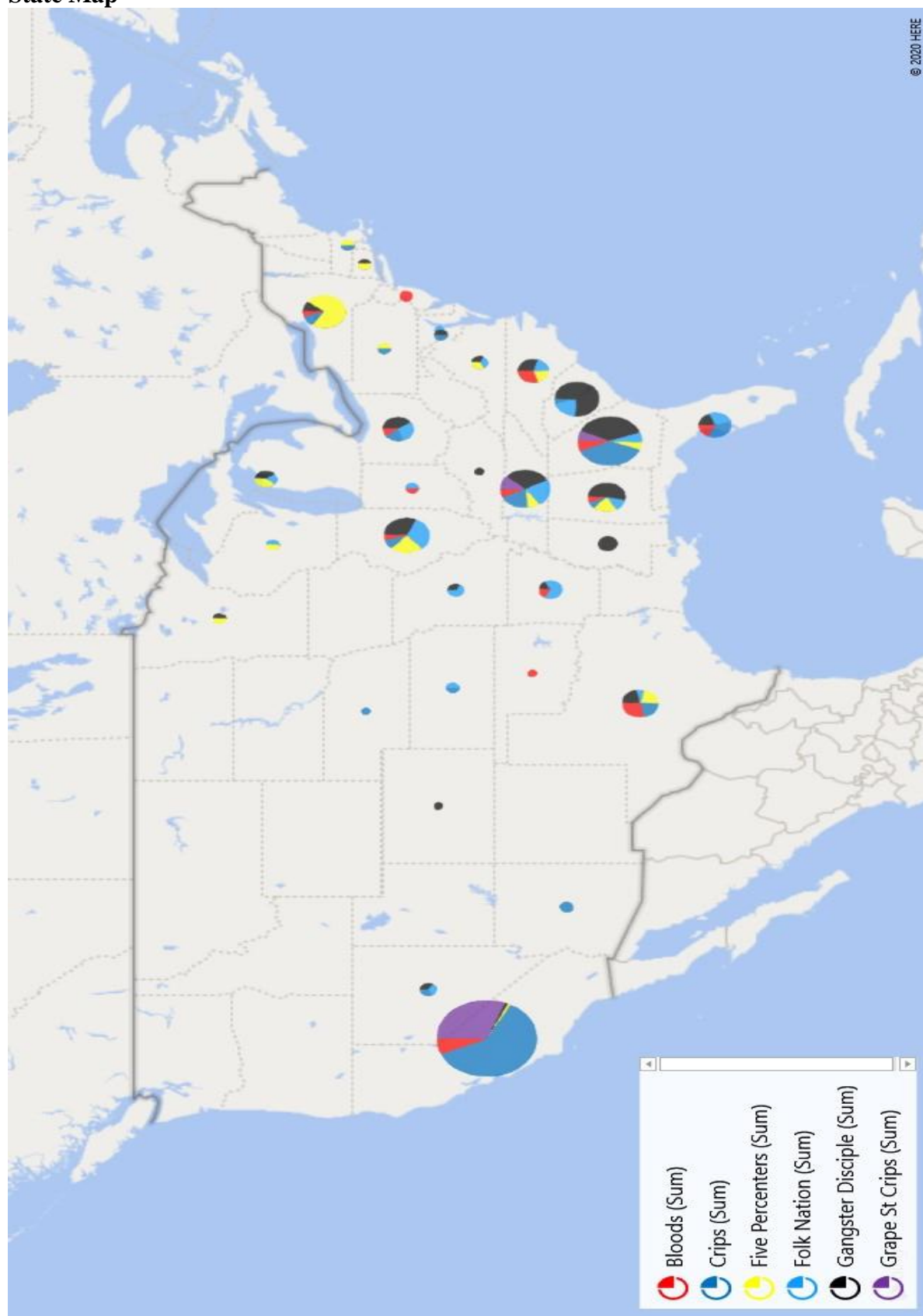
APPENDIX B

GEOGRAPHIC CLUSTERING OF SELECT GANG MEMBERS

City Map



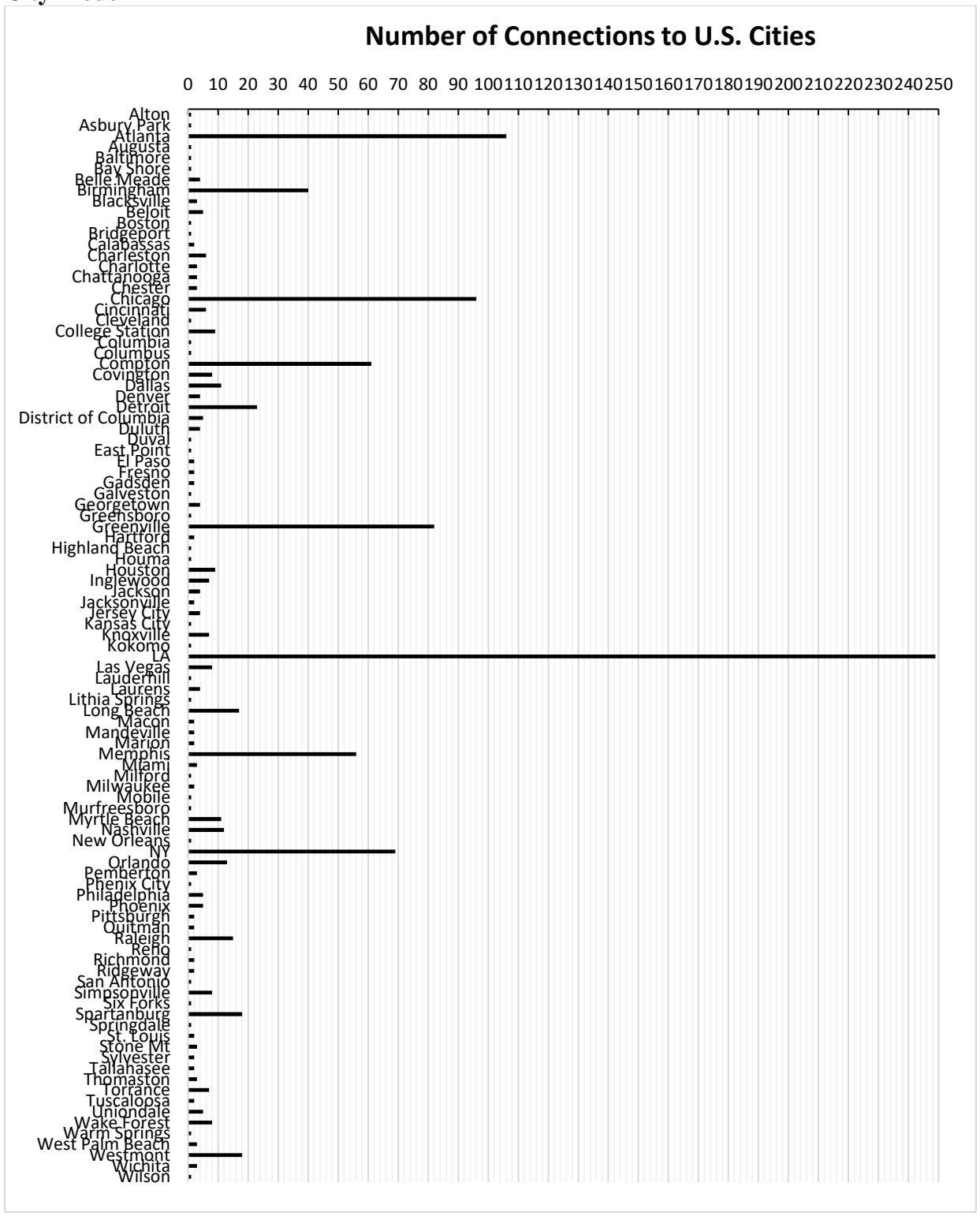
State Map

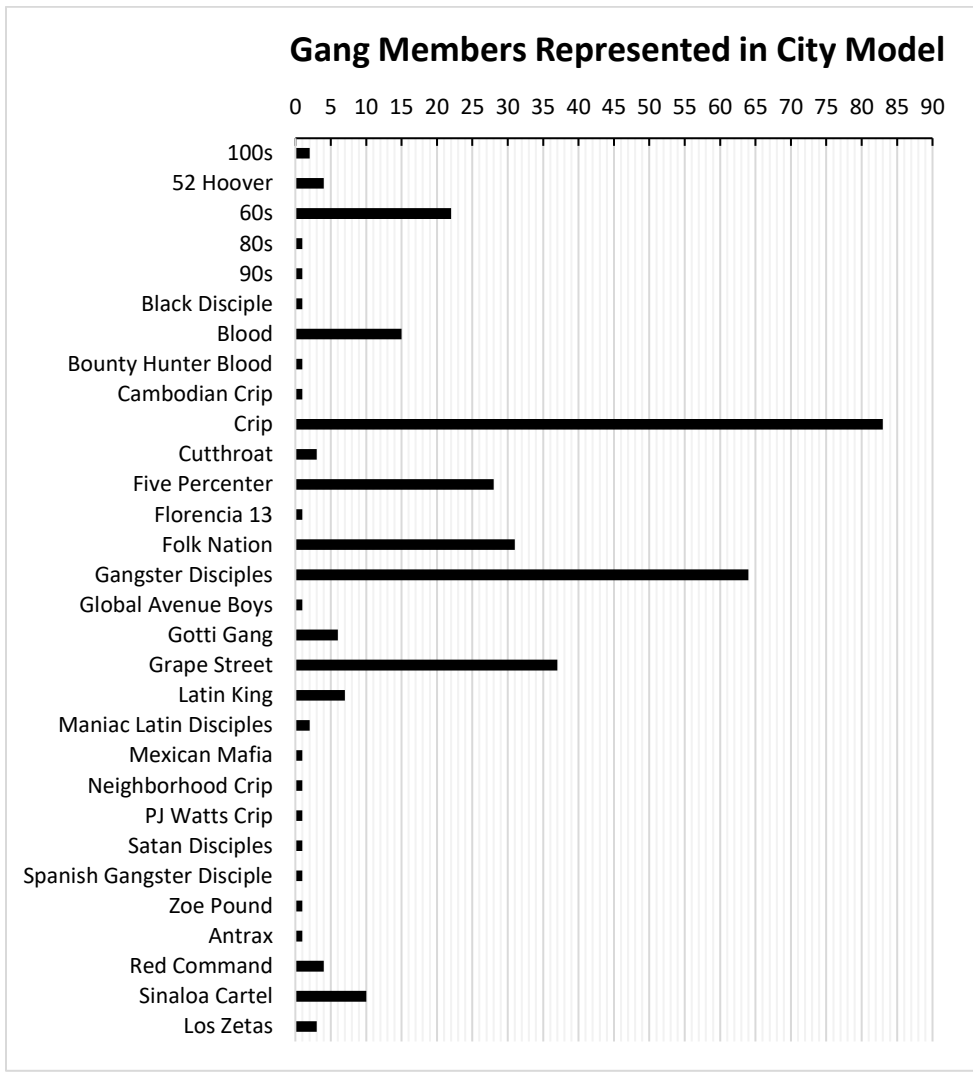
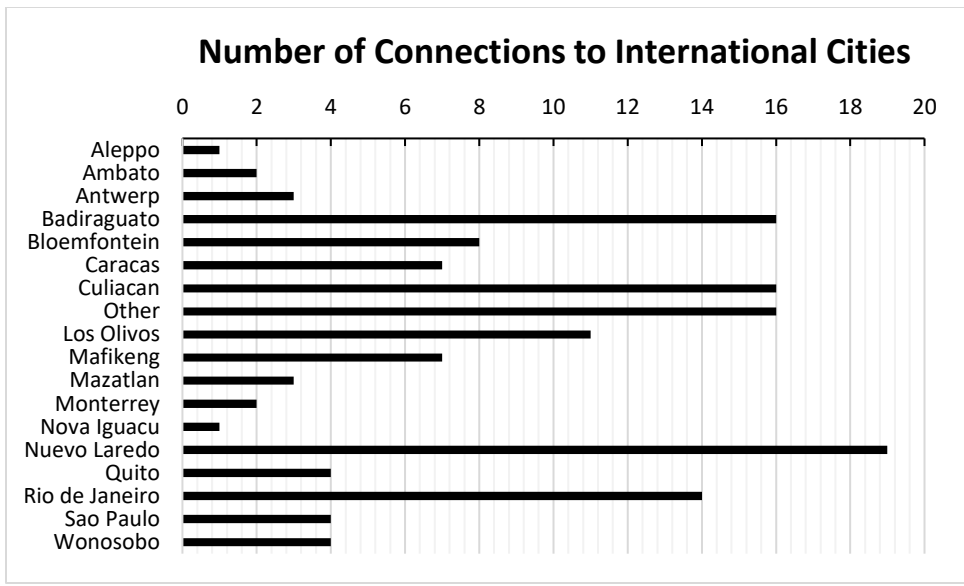


APPENDIX C

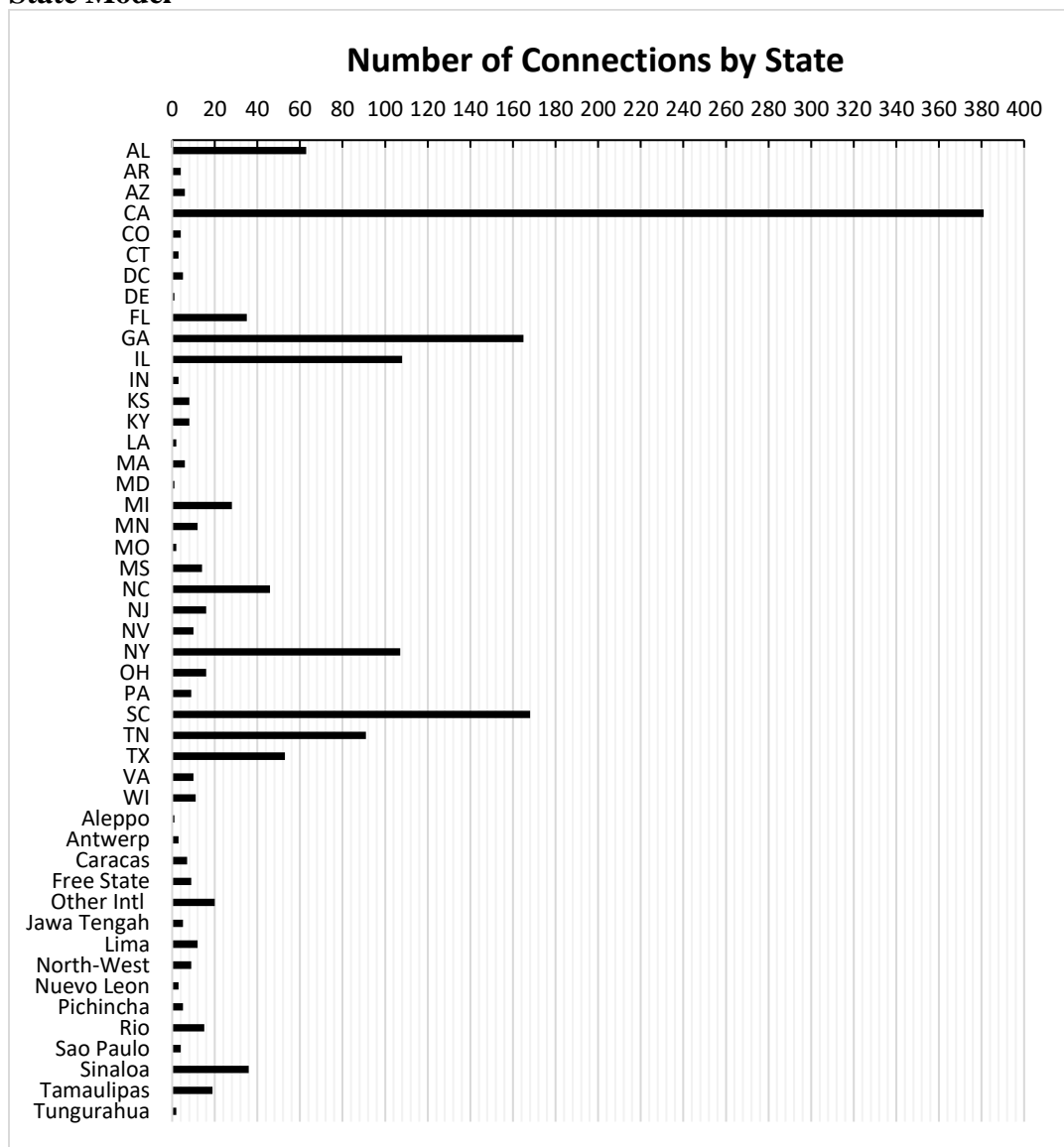
GANG MEMBER CONNECTIONS BY LOCATION

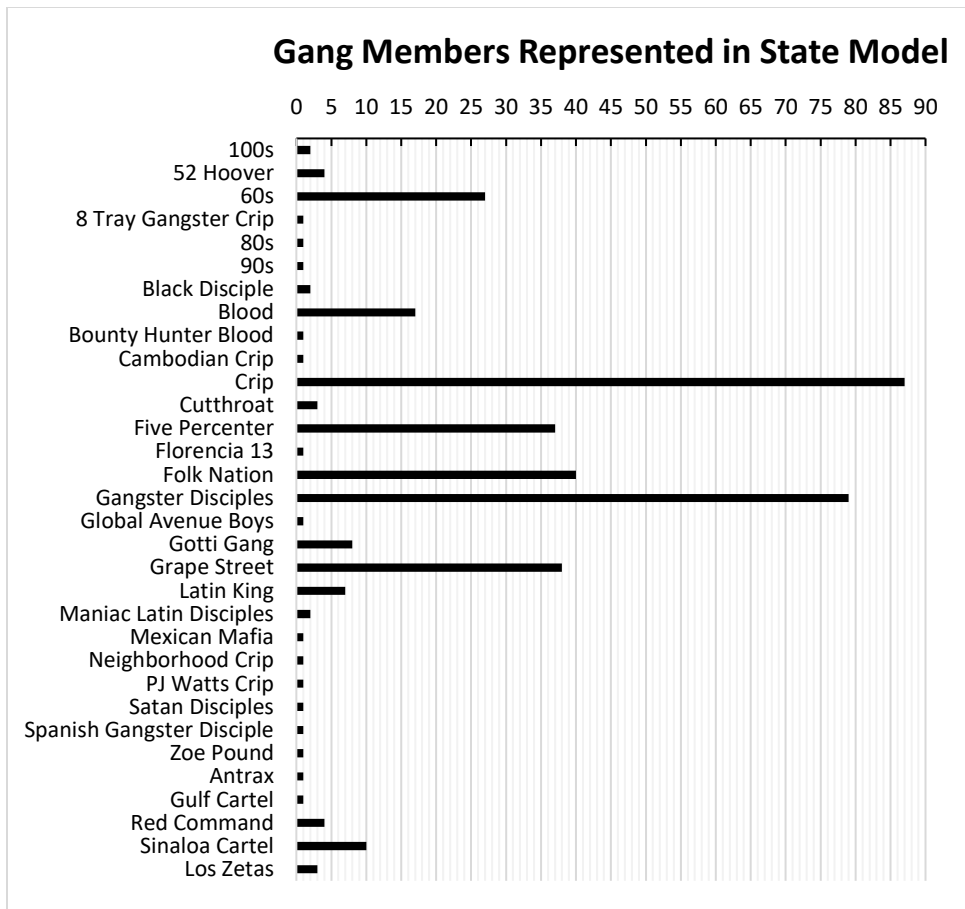
City Model





State Model





APPENDIX D

WORDS AND PHRASES TO DETECT GANG MEMBERS ON TWITTER

Term/Phrase	Meaning	Gang
000	Blood	Bloods
001	Blood Love	Bloods
013	Assault	Bloods
023	Watch Your Back	Bloods
025	What rank are you	Bloods
031	I'm a Blood	Bloods
041	Kill a Crip	Bloods
212	Blood Love	Bloods
311	CK (Crip Killer)	Bloods
730	Crazies (NY law for mental health)	Bloods
Answer Up	Respect the orders of your superiors	Bloods
BFL	Blood for Life	Bloods
CK	Crip Killer	Bloods
CKA	Crip Killer Always	Bloods
CKAD	Crip Killing All Day	Bloods
Crab	Disrespectful name for Crip	Bloods
Damu	Swahili for Blood	Bloods
Dizzy State	LA County Jail	Bloods
Erick/Ericks	Insult to Crips	Bloods
Flue	Blood for Blue	Bloods
GKB	Gangster Killer Bloods	Bloods
Krab	Insult to Crips	Bloods
PYT	Money	Bloods
Piru	Original name of Bloods	Bloods
Rawville	San Quentin	Bloods
Red Nation	All Blood gangs taken as a whole	Bloods
Scar Face, Scarface	NY Bloods	Bloods
Smurfs	Derogatory term for white people	Bloods
Snoovers	Insult to Hoover Street Crips	Bloods
UBL	United Blood Line	Bloods
UBN	United Blood Nation	Bloods
UGS	Bloods	Bloods
Voltron	Hit	Bloods
What it B Like	Blood greeting	Bloods
BALLY	Bloods Always Live Longer Years	Bloods
CCN	Crazy Crip Nation	Crips
312	CL (Crip Love)	Crips

AC	Fisk University	Crips
Adidas	All Day I Destroy a Slob (Blood)	Crips
B/K	Blood Killer	Crips
BKA	Blood Killer Always	Crips
BKAD	Blood Killing All Day	Crips
Blob	Disrespectful name for Blood	Crips
BNCO	Blue Note Crip Organization	Crips
CFL	Crips for Life	Crips
CL	Crip Love	Crips
	Crips Rule	Crips
	Crips Rule All Bloods	Crips
Cuz, Cuzz	Friendly term between members	Crips
Dead Rag	Insult to Bloods	Crips
FUCC	Fuck in slang	Crips
ICM	International Crip Mafia	Crips
KC	King Crips	Crips
KSWISS	Kill Slobs When I See Slobs	Crips
KSWYSS	Kill Slobs When You See Slobs	Crips
No Mex	Rebels	Crips
Ooh Lah	Insult to Bloods	Crips
PK	Piru Killer	Crips
Red Rags	Insult to Bloods	Crips
Sissies	Derogatory for Sixties Gangsters	Crips
SK	Slob Killer (Insult to Bloods)	Crips
Slob, Sloob	Disrespect Bloods	Crips
So Mex	Fender bender	Crips
UCG	United Crips Gang	Crips
What it C Like	Crip greeting	Crips
Zipgun	Payday	Crips
Ace Duce	12th Street Hoover Crips, Close friend	Crips
006	Silence	Folk
1/1/15	All As One	Folk
1/14/18	All Due Respect	Folk
1/15	As One	Folk
2/4/14	Black Disciple Nation	Folk
2/7/414	Black Gangster Disciple Nation	Folk
410	Wisdom	Folk
412	Understanding	Folk
420	Disciple in trouble	Folk
430	Do what you're told	Folk
6006	Fully silent	Folk
74	GD (Gangster Disciples)	Folk
All Is One	We're all together and OK	Folk

AR804	Chicago rules & regulations	Folk
	Brother of Struggle	Folk
FMLDN	Latin Disciple Nation	Folk
GD	Gangster Disciples	Folk
	Love, Life, Loyalty, Wisdom, Understanding,	
LLLWUK	Knowledge	Folk
LC	Latin Cowards	Folk
Vicky Lous	Insult to Vice Lords/People Nation	Folk
Silver Devils	Law enforcement	Folk
16/11	Pure Knowledge	Folk/People
16/16	People Power	Folk/People
360	Knowledge	Folk/People
4-2-4	Death Before Dishonor	Folk/People
55	Drinks	Folk/People
720	Pure black and blue hearts	Folk/People
	Part of Code of Arms (year of new teachings of King	
78	Hoover & King Shorty)	Folk/People
8-20	Hoover Thang	Folk/People
9-1	Kill	Folk/People
9-12-25-23-21	I leave you with understanding	Folk/People
C 15	Money	Folk/People
Chi Town	Chicago	Folk/People
CIT	Check in time, Time to meet	Folk/People
E5	Special Force's Unit	Folk/People
E7	Meeting	Folk/People
GW	Gangster Warrior	Folk/People
March On	Go into enemy territory	Folk/People
Nap Town	Indianapolis	Folk/People
PLO	Present Location	Folk/People
Put Down Your Flag	Disrespect rival gang	Folk/People
Ready Rock	Rock cocaine	Folk/People
Riding High	Gang is well organized & in good spirits	Folk/People
Riding Low	Gang is disorganized, infighting	Folk/People
Stole On	Sucker punched	Folk/People
Zig, Zag, Zig	Understanding	Folk/People
88	Girl/Cocaine	Folk/People
5 in the sky, 6 must die	Revenge	People
ADR	Amor De Rey	People
ALKN	Almighty Latin King's Nation	People
DK	Disciple Killer	People
Eleven Pointed Pancake	Vice Lord who became a Disciple	People
LK, L/K	Latin Kings	People
	Latin Counts	People

LHOSR	Love, Honor, Obedience, Sacrifice, Righteousness	People
LK	Latin Kings	People
LKK	Latin King Killer	People
	All People gangs taken as a whole	People
Vice Lords	Gangs that make up the People Nation	People
WKU	Wisdom, Knowledge, Understanding	People
Al Rato (alrato)	In a while, Later	Hispanic
Awetado	Mad	Hispanic
Aztlan	Occupied Mexico	Hispanic
Baboso	Slob, Idiot, Dummy	Hispanic
CS	Con Safos	Hispanic
Chota	Police, Jail	Hispanic
CR	Criminal Raza	Hispanic
CWA	Chicanos With Attitudes	Hispanic
Dedos	Snitches	Hispanic
ENE ERE	NR (Norte Rules)	Hispanic
Gara	gang colors	Hispanic
La Chinga	References work	Hispanic
La Raza	The Race	Hispanic
La Vida Loca	The Crazy Life	Hispanic
Llanta	Insult to black people	Hispanic
Llesca	Marijuana	Hispanic
Mara	Short for Mara Villa	Hispanic
Maya, Mayate	Insult to black people	Hispanic
Mexican Power	Hispanic gang acitivty considered political action	Hispanic
Mi Vida Loca	My Crazy Life	Hispanic
Mica	Immigration Card	Hispanic
Migra	U.S. Immigration	Hispanic
MM	Mexican Mafia	Hispanic
Mota	Marijuana	Hispanic
N/S	North Side	Hispanic
Nester	Norteno	Hispanic
NF	Nuestra Familia	Hispanic
NR	North Rules	Hispanic
Nuestra Raza	New Race	Hispanic
Onta	Ontario Barrio	Hispanic
Por Vida, PV	For Life	Hispanic
Pcho	Mexican born in America	Hispanic
Puto Snizzle	Snitch	Hispanic
SS, S/S	Soughside	Hispanic
Scrape, Scrapa	Derogatory for Surenos	Hispanic
Smile Now, Cry Later	Do what you want now and cry when you pay for it later	Hispanic
Stoflon	Snitch	Hispanic

Tahas	Texas	Hispanic
Toches	Whites	Hispanic
Trece, Trese	13 (Spanish)	Hispanic
Vida Loca	Crazy life	Hispanic
Viva la Raza	Long live the race	Hispanic
VL	Vato Loco	Hispanic
X3	13	Hispanic
X4	14	Hispanic
XIII	13	Hispanic
XIV	14	Hispanic
XV3	18	Hispanic
XVIII	18	Hispanic
Yerba, Yerva	Marijuana	Hispanic Mexican
EME	M (Spanish)	Mafia Nuestra
DR	Daily Report	Familia Nuestra
EFE, ENE EFE	F (Spanish)	Familia Nuestra
Full 60	Priority alert	Familia Nuestra
Irma	Information	Familia Nuestra
N/A	New Arrival	Familia Nuestra
PW		Familia Nuestra
Shirley, Shirl	Security	Familia Nuestra
SQ	Squad	Familia Nuestra
TT	Tier Tender	Familia Nuestra
TW	Tier Watch	Familia Nuestra
WPNs	Weapons	Familia Aryan
Approved for the Hood	Membership in Aryan Brotherhood approved	Brotherhood Aryan
Bees & Honey	Money	Brotherhood Aryan
Emely, Emily	Insult to Mexican Mafia	Brotherhood Aryan
Marty Draper	Newspaper	Brotherhood Aryan
Nellie Bie	Tie	Brotherhood

Sackett	Member of Aryan Brotherhood	Aryan Brotherhood
Slay and Slew	Jews	Aryan Brotherhood Texas
EPT	El Paso Tip	Syndicate White
88	HH (Heil Hitler)	Supremacist White
Act Your Color	Act like a white person	Supremacist White
Agro	Getting into fights	Supremacist White
AKIA	A Klansman I Am	Supremacist White
AKIGY	A Klansman Is Greeting You	Supremacist White
ANP	American Nazi Party	Supremacist White
AYM	Aryan Youth Movement	Supremacist White
BBKS	Black Boy Killers	Supremacist White
Brillo Head	Derogatory remark on black person's hair	Supremacist White
Delenda Est Judaica	Destroy All Jews	Supremacist White
HH	Heil Hitler	Supremacist White
Hymie	Insult to Jews	Supremacist White
Jig, Jigaboo	Insult to black people	Supremacist White
Kike	Insult to Jews	Supremacist White
KKK	Ku Klux Klan	Supremacist White
KZ	Nazi Concentration Camps	Supremacist White
Mein Kampf	Book by Adolf Hitler	Supremacist White
Mud People	Insult to minorities	Supremacist White
Murky	White person who likes minorities	Supremacist White
Neck Tie Party	Hang someone	Supremacist White
Negro, Nigger, Negroid, Nig, Nigga	Derogatory towards blacks	Supremacist White
Nog	Insult to Black people	Supremacist

	Nigger Replacement	White Supremacist White
NSWP	Neo Supreme White Power	Supremacist White
Oxbloods	Brand of shoe	Supremacist White
Race Traitor	Anyone who supports non-whites	Supremacist White
Rag Head	Insult to anyone from Middle East	Supremacist White
RAHOWA, RaHoWa	Racial Holy War	Supremacist White
Red Laces	White Power	Supremacist White
	Die Jews & Niggers	Supremacist White
	Hatred of Blacks	Supremacist White
Sambo	Derogatory term for Blacks	Supremacist White
SH	Skin Heads	Supremacist White
Slags	An insult	Supremacist White
Slant Eyes, Sloop Eyes, Sloops	Derogatory term for Asiana	Supremacist White
Spic, Spick	Derogatory term for Hispanics	Supremacist White
SRIW	Super Race Is White	Supremacist White
SS	Shutz Staple	Supremacist White
SWP	Supreme White Power	Supremacist White
Tar Boon	Derogatory term for Blacks	Supremacist White
(10%) Ten Percent And Out	Some WS groups request 10% of country be reserved only for whites	Supremacist White
White Laces	White power, White pride, Hatred of Jews	Supremacist White
WKKK	Women of the KKK	Supremacist White
WP	White Power	Supremacist White
Zipper Head	Derogatory term for Aisana	Supremacist
Hudas	Devil	Asian
Huynh	Friends	Asian
My Lai	Insult 1/2 American 1/2 Vietnamese	Asian
Sai Lows	Young gang members	Asian

Shaby, Shabu, Shab Yim Jai	Crystal Meth Snitch	Asian Asian Black Guerilla
Annette Brooks	Aryan Brotherhood	Family Black Guerilla
Mary Mitchell	Mexican Mafia	Family Black Guerilla
Nelson Franklin	Nuestra Familia	Family Five
Medina	Brooklyn, NY	Percenter Five
New Jerusalem	New Jersey	Percenter
Binghl	Brother, Homie	Jamaican
Dunzl	Money	Jamaican
I & I, I n I	I, we, you, and me	Jamaican
ILY	Marijuana	Jamaican
Likk	To shoot	Jamaican
PNP	People National Party, Neighborhood where members recruited	Jamaican
Steep	Hot, Wanted by police	Jamaican
1%	One Percenter	OMG
81	HA (Hells Angels)	OMG
926-590	US patent held by Hells Angels	OMG
AFFA, AFFL	Angels Forever, Forever Angels	OMG
	Angels Forever, Forever Loaded	OMG
	Acid Forever, Forever Loaded	OMG
	Alcohol Forever, Forever Loaded	OMG
Alice Baker	Aryan Brotherhood	OMG
BFFB	Bandidos Forever, Forever Brothers	OMG
BFFP	Brothers Forever, Forever Pagans	OMG
BTBF	Bikers Together, Bikers Forever	OMG
DFFL	Dope Forever, Forever Loaded	OMG
ITCOB	I Took Care of Business	OMG
OFFO	Outlaws Forever, Forever Outlaws	OMG
PPDSPEMFOBBT	Pill popping, dope smoking, pussy eating, mother fuckin outlaw brothers biken together	OMG
23/24	Inmates locked up 23 out of 24 hours a day	Prison
AB, ABT	Aryan Brotherhood, of Texas	Prison
Asked for Nancy's Hand	Put up for membership in Nuestra Familia	Prison
BGF	Black Guerilla Family	Prison
C/	Nuestra Familia	Prison
DC Blacks	Black inmates from DC area	Prison

F&Bs	Format & Bonds	Prison
Gorras Negras	Black Berets	Prison
LNF	La Nuestra Familia	Prison
Magic Mountain	Vacaville state prison	Prison
Mary's Club	Nuestra Familia at California Men's Colony prison	Prison
Nancy Flores	Nuestra Familia	Prison
Nancy is going with Emily	Someone changed from Nuestra Familia to Mexican Mafia	Prison
Nancy's X	San Quentin Prison	Prison
	Member of Nuestra Familia	Prison
Rain and Thunder	Trouble with the Mexican Mafia	Prison
Sister Alice Baker	Aryan Brotherhood	Prison
Sitting Bull	Ambush	Prison
Square John	Person with no prior prison experience	Prison
Tamal	San Quentin state prison	Prison
TDC	Texas Department of Corrections	Prison
Terror Dome	Attica State Prison	Prison
Track 13	Life Sentence	Prison
TS	Texas Syndicate	Prison
Wanted for Xmas	Investigate	Prison
Source: Russell D. Flores		
(2004) Gang Slanging		
Dictionary		

APPENDIX E

FACTOR ATTRIBUTE EFFECT OF NODAL ATTRIBUTES

City Nodal Attribute Model				
Nodal Attribute	Estimate	Std. Error	p-Value	
edges	-7.15E+00	2.00E+00	0.000362 ***	
nodefactor.city.Alton	-1.35E-08	1.42E+00	1	
nodefactor.city.Ambato	2.12E+00	1.07E+00	0.046991 *	
nodefactor.city.Antwerp	6.63E-13	1.42E+00	1	
nodefactor.city.Asbury Park	-6.04E-08	1.42E+00	1	
nodefactor.city.Atlanta	1.42E+00	1.01E+00	0.157774	
nodefactor.city.Augusta	2.24E+00	1.06E+00	0.034449 *	
nodefactor.city.Badiraguato	1.22E+00	1.05E+00	0.247534	
nodefactor.city.Baltimore	6.98E-01	1.23E+00	0.569756	
nodefactor.city.Bay Shore	-6.04E-08	1.42E+00	1	
nodefactor.city.Belle Meade	9.24E-01	1.10E+00	0.400249	
nodefactor.city.Birmingham	4.73E-01	1.06E+00	0.656302	
nodefactor.city.Blacksville	6.98E-01	1.23E+00	0.569756	
nodefactor.city.Bloemfontein	1.52E+00	1.06E+00	0.149953	
nodefactor.city.Bloit	1.40E+00	1.12E+00	0.211607	
nodefactor.city.Boston	-1.00E-08	1.42E+00	1	
nodefactor.city.Bridgeport	-9.16E-09	1.42E+00	1	
nodefactor.city.Calabassas	1.63E+00	1.10E+00	0.138251	
nodefactor.city.Caracas	-6.04E-08	1.42E+00	1	
nodefactor.city.Charleston	1.11E+00	1.16E+00	0.338547	
nodefactor.city.Charlotte	1.11E+00	1.08E+00	0.305959	
nodefactor.city.Chattanooga	6.98E-01	1.12E+00	0.533339	
nodefactor.city.Chester	1.40E+00	1.12E+00	0.211607	
nodefactor.city.Chicago	1.15E+00	1.01E+00	0.254682	
nodefactor.city.Cincinnati	1.90E+00	1.04E+00	0.067942 .	
nodefactor.city.Cleveland	6.98E-01	1.23E+00	0.569756	
nodefactor.city.College Station	3.04E+00	1.03E+00	0.003221 **	
nodefactor.city.Columbia	-9.16E-09	1.42E+00	1	
nodefactor.city.Columbus	-6.04E-08	1.42E+00	1	
nodefactor.city.Compton	1.46E+00	1.01E+00	0.146495	
nodefactor.city.Covington	2.35E+00	1.05E+00	0.025732 *	
nodefactor.city.Culiacan	1.98E+00	1.02E+00	0.052693 .	
nodefactor.city.Dallas	8.54E-01	1.07E+00	0.425465	
nodefactor.city.Denver	1.40E+00	1.12E+00	0.211607	
nodefactor.city.Detroit	9.89E-01	1.06E+00	0.352148	
nodefactor.city.Duluth	2.35E+00	1.05E+00	0.025732 *	
nodefactor.city.Duval	1.82E+00	1.08E+00	0.093722 .	

nodefactor.city.East Point	2.92E+00	1.03E+00	0.004799 **
nodefactor.city.El Paso	-2.50E-08	1.42E+00	1
nodefactor.city.Fresno	6.70E-13	1.42E+00	1
nodefactor.city.Gadsden	2.63E+00	1.04E+00	0.011731 *
nodefactor.city.Galveston	1.82E+00	1.08E+00	0.093722 .
nodefactor.city.Georgetown	6.98E-01	1.12E+00	0.533339
nodefactor.city.Greensboro	6.98E-01	1.23E+00	0.569756
nodefactor.city.Greenville	1.00E+00	1.02E+00	0.32621
nodefactor.city.Haiti	1.11E+00	1.16E+00	0.338547
nodefactor.city.Hartford	-6.04E-08	1.42E+00	1
nodefactor.city.Highland Beach	2.12E+00	1.07E+00	0.046991 *
nodefactor.city.Houma	-6.04E-08	1.42E+00	1
nodefactor.city.Houston	6.98E-01	1.12E+00	0.533339
nodefactor.city.Inglewood	6.98E-01	1.08E+00	0.518995
nodefactor.city.Jackson	-2.76E-08	1.42E+00	1
nodefactor.city.Jacksonville	2.30E+00	1.03E+00	0.025756 *
nodefactor.city.Jersey City	1.11E+00	1.08E+00	0.305959
nodefactor.city.Kansas City	1.98E+00	1.07E+00	0.065515 .
nodefactor.city.Knoxville	-5.55E-07	1.23E+00	1
nodefactor.city.Kokomo	6.98E-01	1.23E+00	0.569756
nodefactor.city.LA	1.39E+00	1.00E+00	0.165044
nodefactor.city.Las Vegas	1.63E+00	1.05E+00	0.121259
nodefactor.city.Lauderhill	6.98E-01	1.23E+00	0.569756
nodefactor.city.Laurens	1.63E+00	1.10E+00	0.138251
nodefactor.city.Lithia Springs	-9.16E-09	1.42E+00	1
nodefactor.city.Long Beach	1.40E+00	1.02E+00	0.167722
nodefactor.city.Los Olivos	6.71E-13	1.42E+00	1
nodefactor.city.Macon	2.05E+00	1.04E+00	0.048021 *
nodefactor.city.Mafikeng	-6.04E-08	1.42E+00	1
nodefactor.city.Mandeville	4.08E-01	1.16E+00	0.724468
nodefactor.city.Marion	1.40E+00	1.12E+00	0.211607
nodefactor.city.Mazatlan	1.11E+00	1.08E+00	0.305959
nodefactor.city.Memphis	1.45E+00	1.01E+00	0.153151
nodefactor.city.Miami	1.82E+00	1.04E+00	0.081704 .
nodefactor.city.Milford	1.40E+00	1.12E+00	0.211607
nodefactor.city.Milwaukee	1.98E+00	1.07E+00	0.065515 .
nodefactor.city.Mobile	1.11E+00	1.16E+00	0.338547
nodefactor.city.Monterrey	1.63E+00	1.10E+00	0.138251
nodefactor.city.Murfreesboro	-6.04E-08	1.42E+00	1
nodefactor.city.Myrtle Beach	4.08E-01	1.16E+00	0.724468
nodefactor.city.Nashville	1.45E+00	1.03E+00	0.157141
nodefactor.city.New Orleans	-1.35E-08	1.42E+00	1
nodefactor.city.New York	1.63E+00	1.05E+00	0.121259

nodefactor.city.Nova Iguacu	-1.35E-08	1.42E+00	1
nodefactor.city.Nuevo Laredo	-5.55E-07	1.23E+00	1
nodefactor.city.NY	1.14E+00	1.02E+00	0.263042
nodefactor.city.Orlando	1.11E+00	1.08E+00	0.305959
nodefactor.city.Pemberton	-5.65E-07	1.16E+00	1
nodefactor.city.Phenix City	-3.71E-08	1.42E+00	1
nodefactor.city.Philadelphia	-6.04E-08	1.42E+00	1
nodefactor.city.Phoenix	3.20E+00	1.03E+00	0.001855 **
nodefactor.city.Pittsburgh	6.98E-01	1.23E+00	0.569756
nodefactor.city.Quitman	2.12E+00	1.07E+00	0.046991 *
nodefactor.city.Quito	-1.00E-08	1.42E+00	1
nodefactor.city.Raleigh	-5.64E-07	1.16E+00	1
nodefactor.city.Reno	1.11E+00	1.16E+00	0.338547
nodefactor.city.Richmond	1.11E+00	1.16E+00	0.338547
nodefactor.city.Ridgeway	-1.26E-08	1.42E+00	1
nodefactor.city.Rio	-4.86E-09	1.42E+00	1
nodefactor.city.San Antonio	1.63E+00	1.10E+00	0.138251
nodefactor.city.Sao Paulo	1.40E+00	1.12E+00	0.211607
nodefactor.city.Simpsonville	2.54E+00	1.05E+00	0.015043 *
nodefactor.city.Six Forks	-1.35E-08	1.42E+00	1
nodefactor.city.Spartanburg	-6.04E-08	1.42E+00	1
nodefactor.city.Springdale	6.98E-01	1.23E+00	0.569756
nodefactor.city.St. Louis	6.98E-01	1.23E+00	0.569756
nodefactor.city.Stone Mt	6.98E-01	1.23E+00	0.569756
nodefactor.city.Sylvester	-6.53E-09	1.42E+00	1
nodefactor.city.Tallahasee	2.71E+00	1.04E+00	0.009250 **
nodefactor.city.Thomaston	6.98E-01	1.23E+00	0.569756
nodefactor.city.Torrance	1.98E+00	1.02E+00	0.052693 .
nodefactor.city.Tuscaloosa	1.11E+00	1.16E+00	0.338547
nodefactor.city.Uniondale	1.63E+00	1.10E+00	0.138251
nodefactor.city.Wake Forest	-3.81E-08	1.42E+00	1
nodefactor.city.Warm Springs	6.98E-01	1.23E+00	0.569756
nodefactor.city.Washington	1.40E+00	1.12E+00	0.211607
nodefactor.city.West Palm Beach	1.40E+00	1.12E+00	0.211607
nodefactor.city.Westmont	8.83E-01	1.04E+00	0.397522
nodefactor.city.Wichita	-6.04E-08	1.42E+00	1
nodefactor.city.Wilson	1.11E+00	1.16E+00	0.338547
nodefactor.city.Wonosobo	-9.16E-09	1.42E+00	1

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

City Nodal Attribute Gang Set Interaction

Nodal Attribute	Estimate	Std. Error	p-Value
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edges	-7.15E+00	2.01E+00	0.000363 ***
nodefactor.city.Alton	-1.73E-13	1.42E+00	1
nodefactor.city.Ambato	2.22E+00	1.26E+00	0.078293 .
nodefactor.city.Antwerp	1.07E-01	1.57E+00	0.94576
nodefactor.city.Asbury Park	-1.63E+00	1.52E+00	0.281295
nodefactor.city.Atlanta	1.01E+00	1.11E+00	0.366657
nodefactor.city.Augusta	6.07E-01	1.19E+00	0.609024
nodefactor.city.Badiraguato	2.31E+00	1.53E+00	0.131052
nodefactor.city.Baltimore	2.34E-01	1.33E+00	0.859976
nodefactor.city.Bay Shore	-1.91E-01	1.50E+00	0.898299
nodefactor.city.Belle Meade	4.60E-01	1.21E+00	0.703489
nodefactor.city.Birmingham	-1.73E-01	1.17E+00	0.882404
nodefactor.city.Blacksville	1.63E-02	1.32E+00	0.990155
nodefactor.city.Bloemfontein	1.33E+00	1.16E+00	0.250363
nodefactor.city.Blois	7.01E-01	1.24E+00	0.570935
nodefactor.city.Boston	-1.91E-01	1.50E+00	0.898299
nodefactor.city.Bridgeport	-6.82E-01	1.50E+00	0.649188
nodefactor.city.Calabassas	1.30E+00	1.20E+00	0.278606
nodefactor.city.Caracas	-3.27E-01	1.50E+00	0.827393
nodefactor.city.Charleston	4.27E-01	1.26E+00	0.734176
nodefactor.city.Charlotte	4.18E-01	1.19E+00	0.725895
nodefactor.city.Chattanooga	1.63E-02	1.22E+00	0.989356
nodefactor.city.Chester	7.01E-01	1.24E+00	0.570935
nodefactor.city.Chicago	6.33E-01	1.12E+00	0.571251
nodefactor.city.Cincinnati	1.44E+00	1.15E+00	0.209709
nodefactor.city.Cleveland	8.06E-01	1.40E+00	0.566131
nodefactor.city.College Station	2.36E+00	1.14E+00	0.038767 *
nodefactor.city.Columbia	-1.91E-01	1.50E+00	0.898299
nodefactor.city.Columbus	-6.82E-01	1.50E+00	0.649188
nodefactor.city.Compton	1.25E+00	1.11E+00	0.260265
nodefactor.city.Covington	1.67E+00	1.16E+00	0.150762
nodefactor.city.Culiacan	3.07E+00	1.51E+00	0.041629 *
nodefactor.city.Dallas	2.26E-01	1.19E+00	0.848662
nodefactor.city.Denver	7.20E-01	1.22E+00	0.55636
nodefactor.city.Detroit	4.13E-01	1.17E+00	0.72372
nodefactor.city.Duluth	1.67E+00	1.16E+00	0.150762
nodefactor.city.Duval	1.36E+00	1.20E+00	0.257492
nodefactor.city.East Point	2.22E+00	1.16E+00	0.055331 .
nodefactor.city.El Paso	-7.92E-13	1.42E+00	1
nodefactor.city.Fresno	-1.91E-01	1.50E+00	0.898299
nodefactor.city.Gadsden	1.95E+00	1.15E+00	0.090834 .
nodefactor.city.Galveston	1.27E+00	1.20E+00	0.290996
nodefactor.city.Georgetown	6.99E-01	1.12E+00	0.533423

nodefactor.city.Greensboro	2.34E-01	1.33E+00	0.859976
nodefactor.city.Greenville	3.60E-01	1.13E+00	0.750131
nodefactor.city.Haiti	4.27E-01	1.26E+00	0.734176
nodefactor.city.Hartford	-7.02E-01	1.51E+00	0.642184
nodefactor.city.Highland Beach	2.22E+00	1.26E+00	0.078293 .
nodefactor.city.Houma	-3.27E-01	1.50E+00	0.827393
nodefactor.city.Houston	1.63E-02	1.22E+00	0.989356
nodefactor.city.Inglewood	2.54E-01	1.19E+00	0.831161
nodefactor.city.Jackson	-6.82E-01	1.50E+00	0.649188
nodefactor.city.Jacksonville	1.75E+00	1.15E+00	0.129214
nodefactor.city.Jersey City	5.58E-01	1.20E+00	0.641605
nodefactor.city.Kansas City	1.98E+00	1.07E+00	0.065488 .
nodefactor.city.Knoxville	-1.91E-01	1.32E+00	0.884568
nodefactor.city.Kokomo	2.34E-01	1.33E+00	0.859976
nodefactor.city.LA	1.09E+00	1.11E+00	0.324983
nodefactor.city.Las Vegas	1.17E+00	1.16E+00	0.312955
nodefactor.city.Lauderhill	5.08E-01	1.32E+00	0.699967
nodefactor.city.Laurens	9.49E-01	1.20E+00	0.430594
nodefactor.city.Lithia Springs	-2.14E-13	1.42E+00	1
nodefactor.city.Long Beach	1.06E+00	1.13E+00	0.346151
nodefactor.city.Los Olivos	-1.91E-01	1.50E+00	0.898299
nodefactor.city.Macon	1.86E+00	1.14E+00	0.102776
nodefactor.city.Mafikeng	-7.02E-01	1.51E+00	0.642184
nodefactor.city.Mandeville	-5.61E-02	1.26E+00	0.964594
nodefactor.city.Marion	9.38E-01	1.23E+00	0.445787
nodefactor.city.Mazatlan	2.20E+00	1.55E+00	0.155785
nodefactor.city.Memphis	9.50E-01	1.12E+00	0.397133
nodefactor.city.Miami	1.46E+00	1.16E+00	0.209362
nodefactor.city.Milford	1.40E+00	1.12E+00	0.211641
nodefactor.city.Milwaukee	1.51E+00	1.19E+00	0.20182
nodefactor.city.Mobile	4.27E-01	1.26E+00	0.734176
nodefactor.city.Monterrey	1.63E+00	1.10E+00	0.138259
nodefactor.city.Murfreesboro	-1.91E-01	1.50E+00	0.898299
nodefactor.city.Myrtle Beach	-1.71E-01	1.26E+00	0.891827
nodefactor.city.Nashville	8.98E-01	1.14E+00	0.430993
nodefactor.city.New Orleans	-1.86E-13	1.42E+00	1
nodefactor.city.New York	4.60E-01	1.17E+00	0.694465
nodefactor.city.Nova Iguacu	-1.29E-12	1.42E+00	1
nodefactor.city.Nuevo Laredo	-1.93E-11	1.23E+00	1
nodefactor.city.NY	4.64E-01	1.14E+00	0.683171
nodefactor.city.Orlando	7.73E-01	1.19E+00	0.514578
nodefactor.city.Pemberton	-1.93E-11	1.16E+00	1
nodefactor.city.Phenix City	-6.82E-01	1.50E+00	0.649188

nodefactor.city.Philadelphia	-7.02E-01	1.51E+00	0.642184
nodefactor.city.Phoenix	3.01E+00	1.13E+00	0.007780 **
nodefactor.city.Pittsburgh	5.08E-01	1.32E+00	0.699967
nodefactor.city.Quitman	1.44E+00	1.17E+00	0.220886
nodefactor.city.Quito	1.07E-01	1.57E+00	0.94576
nodefactor.city.Raleigh	-5.23E-01	1.26E+00	0.67798
nodefactor.city.Reno	6.45E-01	1.26E+00	0.60975
nodefactor.city.Richmond	5.58E-01	1.27E+00	0.65975
nodefactor.city.Ridgeway	-4.64E-01	1.51E+00	0.757704
nodefactor.city.Rio	-3.09E-13	1.42E+00	1
nodefactor.city.San Antonio	9.30E-01	1.22E+00	0.444838
nodefactor.city.Sao Paulo	1.40E+00	1.12E+00	0.211641
nodefactor.city.Simpsonville	1.86E+00	1.15E+00	0.106743
nodefactor.city.Six Forks	-1.29E-12	1.42E+00	1
nodefactor.city.Spartanburg	-6.82E-01	1.50E+00	0.649188
nodefactor.city.Springdale	6.99E-01	1.23E+00	0.569816
nodefactor.city.St. Louis	1.63E-02	1.32E+00	0.990155
nodefactor.city.Stone Mt	5.08E-01	1.32E+00	0.699967
nodefactor.city.Sylvester	-6.82E-01	1.50E+00	0.649188
nodefactor.city.Tallahasee	2.52E+00	1.14E+00	0.027561 *
nodefactor.city.Thomaston	2.34E-01	1.33E+00	0.859976
nodefactor.city.Torrance	1.79E+00	1.13E+00	0.112172
nodefactor.city.Tuscaloosa	4.27E-01	1.26E+00	0.734176
nodefactor.city.Uniondale	9.49E-01	1.20E+00	0.430594
nodefactor.city.Wake Forest	-7.02E-01	1.51E+00	0.642184
nodefactor.city.Warm Springs	1.63E-02	1.32E+00	0.990155
nodefactor.city.Washington	7.20E-01	1.22E+00	0.55636
nodefactor.city.West Palm Beach	1.21E+00	1.22E+00	0.320043
nodefactor.city.Westmont	7.28E-01	1.12E+00	0.51411
nodefactor.city.Wichita	-1.91E-01	1.50E+00	0.898299
nodefactor.city.Wilson	1.11E+00	1.16E+00	0.338607
nodefactor.city.Wonosobo	-1.91E-01	1.50E+00	0.898299
nodefactor.gang.set.52 hoover	1.63E+00	5.36E-01	0.002317 **
nodefactor.gang.set.60s	3.27E-01	4.88E-01	0.502695
nodefactor.gang.set.80s	NA	0.00E+00	NA
nodefactor.gang.set.90s	NA	0.00E+00	NA
nodefactor.gang.set.anthrax	NA	0.00E+00	NA
nodefactor.gang.set.black disciple	-6.33E-01	1.12E+00	0.571251
nodefactor.gang.set.blood	5.51E-01	5.14E-01	0.283191
nodefactor.gang.set.bounty hunter	1.69E+00	5.41E-01	0.001727 **
nodefactor.gang.set.cambodia cripp	1.06E+00	6.30E-01	0.093705 .
nodefactor.gang.set.cripp	1.91E-01	4.73E-01	0.686164
nodefactor.gang.set.cutthroat	2.42E-01	5.75E-01	0.673546

nodefactor.gang.set.Five Percenter	7.02E-01	5.19E-01	0.176292
nodefactor.gang.set.Florenxia 13	-1.09E+00	1.11E+00	0.324983
nodefactor.gang.set.Folk	4.64E-01	5.04E-01	0.356657
nodefactor.gang.set.GD	6.82E-01	4.88E-01	0.162441
nodefactor.gang.set.global avenue boys	NA	0.00E+00	NA
nodefactor.gang.set.gotti gang	NA	0.00E+00	NA
nodefactor.gang.set.grape street	2.27E-01	4.77E-01	0.634592
nodefactor.gang.set.latin king	-1.07E-01	6.78E-01	0.874725
nodefactor.gang.set.maniac latin disciple	8.95E-01	5.81E-01	0.123736
nodefactor.gang.set.mexican mafia	NA	0.00E+00	NA
nodefactor.gang.set.neighborhood crip	1.48E-01	7.01E-01	0.832484
nodefactor.gang.set.pj watts	-3.91E-01	8.52E-01	0.646161
nodefactor.gang.set.red command	NA	0.00E+00	NA
nodefactor.gang.set.satan disciples	NA	0.00E+00	NA
nodefactor.gang.set.sinaloa	-1.09E+00	1.11E+00	0.324983
nodefactor.gang.set.spanish gangster disciple	NA	0.00E+00	NA
nodefactor.gang.set.zetas	NA	0.00E+00	NA
nodefactor.gang.set.zoe pound	NA	0.00E+00	NA

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

City Nodal Attribute Primary Gang Interaction

Nodal Attribute	Estimate	Std. Error	p-Value
edges	-7.15E+00	2.01E+00	0.000364***
nodefactor.city.Alton	9.53E-13	1.42E+00	1
nodefactor.city.Ambato	3.86E+00	1.20E+00	0.001303**
nodefactor.city.Antwerp	1.75E+00	1.52E+00	0.251508
nodefactor.city.Asbury Park	1.59E-13	1.42E+00	1
nodefactor.city.Atlanta	2.54E+00	1.05E+00	0.015016*
nodefactor.city.Augusta	2.24E+00	1.06E+00	0.03445*
nodefactor.city.Badiraguato	3.93E+00	1.48E+00	0.007751**
nodefactor.city.Baltimore	1.63E+00	1.26E+00	0.197946
nodefactor.city.Bay Shore	1.36E+00	1.44E+00	0.347557
nodefactor.city.Belle Meade	1.85E+00	1.14E+00	0.103452
nodefactor.city.Birmingham	1.39E+00	1.10E+00	0.207936
nodefactor.city.Blacksville	1.63E+00	1.26E+00	0.197946
nodefactor.city.Bloemfontein	2.88E+00	1.09E+00	0.008406**
nodefactor.city.Blois	2.27E+00	1.18E+00	0.053008.
nodefactor.city.Boston	1.36E+00	1.44E+00	0.347557
nodefactor.city.Bridgeport	9.29E-01	1.45E+00	0.521284
nodefactor.city.Calabassas	2.99E+00	1.13E+00	0.008414**
nodefactor.city.Caracas	1.36E+00	1.44E+00	0.347557
nodefactor.city.Charleston	2.04E+00	1.20E+00	0.088443.

nodefactor.city.Charlotte	2.01E+00	1.13E+00	0.074517.
nodefactor.city.Chattanooga	1.63E+00	1.16E+00	0.16058
nodefactor.city.Chester	2.27E+00	1.18E+00	0.053008.
nodefactor.city.Chicago	2.17E+00	1.05E+00	0.038275*
nodefactor.city.Cincinnati	3.02E+00	1.08E+00	0.005069**
nodefactor.city.Cleveland	2.44E+00	1.35E+00	0.069858.
nodefactor.city.College Station	3.97E+00	1.07E+00	0.000217***
nodefactor.city.Columbia	1.36E+00	1.44E+00	0.347557
nodefactor.city.Columbus	9.29E-01	1.45E+00	0.521284
nodefactor.city.Compton	2.78E+00	1.05E+00	0.007844**
nodefactor.city.Covington	3.28E+00	1.10E+00	0.002735**
nodefactor.city.Culiacan	4.69E+00	1.46E+00	0.001253**
nodefactor.city.Dallas	1.74E+00	1.12E+00	0.118817
nodefactor.city.Denver	2.33E+00	1.16E+00	0.044655*
nodefactor.city.Detroit	2.04E+00	1.10E+00	0.063689.
nodefactor.city.Duluth	3.28E+00	1.10E+00	0.002735**
nodefactor.city.Duval	2.75E+00	1.13E+00	0.014567*
nodefactor.city.East Point	3.79E+00	1.09E+00	0.000513***
nodefactor.city.El Paso	2.72E+00	1.76E+00	0.122024
nodefactor.city.Fresno	1.36E+00	1.44E+00	0.347557
nodefactor.city.Gadsden	3.56E+00	1.08E+00	0.001032**
nodefactor.city.Galveston	2.54E+00	1.13E+00	0.024734*
nodefactor.city.Georgetown	6.99E-01	1.12E+00	0.533453
nodefactor.city.Greensboro	1.63E+00	1.26E+00	0.197946
nodefactor.city.Greenville	1.93E+00	1.06E+00	0.069276.
nodefactor.city.Haiti	2.04E+00	1.20E+00	0.088443.
nodefactor.city.Hartford	8.71E-01	1.46E+00	0.550798
nodefactor.city.Highland Beach	3.86E+00	1.20E+00	0.001303**
nodefactor.city.Houma	1.36E+00	1.44E+00	0.347557
nodefactor.city.Houston	1.63E+00	1.16E+00	0.16058
nodefactor.city.Inglewood	1.59E+00	1.12E+00	0.157467
nodefactor.city.Jackson	9.29E-01	1.45E+00	0.521284
nodefactor.city.Jacksonville	3.01E+00	1.08E+00	0.00511**
nodefactor.city.Jersey City	1.83E+00	1.13E+00	0.105377
nodefactor.city.Kansas City	2.91E+00	1.11E+00	0.009069**
nodefactor.city.Knoxville	1.36E+00	1.26E+00	0.280916
nodefactor.city.Kokomo	1.63E+00	1.26E+00	0.197946
nodefactor.city.LA	2.72E+00	1.04E+00	0.008764**
nodefactor.city.Las Vegas	2.75E+00	1.09E+00	0.011514*
nodefactor.city.Lauderhill	2.06E+00	1.26E+00	0.102651
nodefactor.city.Laurens	2.56E+00	1.14E+00	0.024658*
nodefactor.city.Lithia Springs	1.36E+00	1.44E+00	0.347557
nodefactor.city.Long Beach	2.78E+00	1.05E+00	0.008434**

nodefactor.city.Los Olivos	1.36E+00	1.44E+00	0.347557
nodefactor.city.Macon	3.41E+00	1.07E+00	0.001488**
nodefactor.city.Mafikeng	8.71E-01	1.46E+00	0.550798
nodefactor.city.Mandeville	1.34E+00	1.20E+00	0.263278
nodefactor.city.Marion	2.33E+00	1.16E+00	0.044655*
nodefactor.city.Mazatlan	3.83E+00	1.50E+00	0.010742*
nodefactor.city.Memphis	2.52E+00	1.05E+00	0.016622*
nodefactor.city.Miami	3.08E+00	1.10E+00	0.004949**
nodefactor.city.Milford	1.40E+00	1.12E+00	0.211694
nodefactor.city.Milwaukee	2.91E+00	1.11E+00	0.009069**
nodefactor.city.Mobile	2.04E+00	1.20E+00	0.088443.
nodefactor.city.Monterrey	1.63E+00	1.10E+00	0.138314
nodefactor.city.Murfreesboro	1.36E+00	1.44E+00	0.347557
nodefactor.city.Myrtle Beach	1.34E+00	1.20E+00	0.263278
nodefactor.city.Nashville	2.57E+00	1.07E+00	0.016186*
nodefactor.city.New Orleans	9.43E-13	1.42E+00	1
nodefactor.city.New York	2.10E+00	1.06E+00	0.046078*
nodefactor.city.Nova Iguacu	5.73E-13	1.42E+00	1
nodefactor.city.Nuevo Laredo	-4.39E-12	1.23E+00	1
nodefactor.city.NY	2.05E+00	1.07E+00	0.055609.
nodefactor.city.Orlando	2.23E+00	1.12E+00	0.046341*
nodefactor.city.Pemberton	-4.40E-12	1.16E+00	1
nodefactor.city.Phenix City	9.29E-01	1.45E+00	0.521284
nodefactor.city.Philadelphia	8.71E-01	1.46E+00	0.550798
nodefactor.city.Phoenix	4.56E+00	1.06E+00	< 1e-04***
nodefactor.city.Pittsburgh	2.06E+00	1.26E+00	0.102651
nodefactor.city.Quitman	3.05E+00	1.11E+00	0.005888**
nodefactor.city.Quito	1.75E+00	1.52E+00	0.251508
nodefactor.city.Raleigh	7.83E-01	1.20E+00	0.512156
nodefactor.city.Reno	2.04E+00	1.20E+00	0.088443.
nodefactor.city.Richmond	1.83E+00	1.20E+00	0.12819
nodefactor.city.Ridgeway	9.29E-01	1.45E+00	0.521284
nodefactor.city.Rio	9.07E-13	1.42E+00	1
nodefactor.city.San Antonio	2.50E+00	1.15E+00	0.030084*
nodefactor.city.Sao Paulo	1.40E+00	1.12E+00	0.211694
nodefactor.city.Simpsonville	3.47E+00	1.09E+00	0.001401**
nodefactor.city.Six Forks	9.29E-01	1.45E+00	0.521284
nodefactor.city.Spartanburg	9.29E-01	1.45E+00	0.521284
nodefactor.city.Springdale	2.06E+00	1.26E+00	0.102651
nodefactor.city.St. Louis	1.63E+00	1.26E+00	0.197946
nodefactor.city.Stone Mt	2.06E+00	1.26E+00	0.102651
nodefactor.city.Sylvester	9.29E-01	1.45E+00	0.521284
nodefactor.city.Tallahasee	4.06E+00	1.08E+00	0.000158***

nodefactor.city.Thomaston	1.63E+00	1.26E+00	0.197946
nodefactor.city.Torrance	3.33E+00	1.06E+00	0.001605**
nodefactor.city.Tuscaloosa	2.04E+00	1.20E+00	0.088443.
nodefactor.city.Uniondale	2.56E+00	1.14E+00	0.024658*
nodefactor.city.Wake Forest	8.71E-01	1.46E+00	0.550798
nodefactor.city.Warm Springs	1.63E+00	1.26E+00	0.197946
nodefactor.city.Washington	2.33E+00	1.16E+00	0.044655*
nodefactor.city.West Palm Beach	2.76E+00	1.16E+00	0.016965*
nodefactor.city.Westmont	2.24E+00	1.08E+00	0.037946*
nodefactor.city.Wichita	1.36E+00	1.44E+00	0.347557
nodefactor.city.Wilson	1.11E+00	1.16E+00	0.338651
nodefactor.city.Wonosobo	1.36E+00	1.44E+00	0.347557
nodefactor.gang.primary.Antrax	NA	0.00E+00	NA
nodefactor.gang.primary.Black Disciple	-2.17E+00	1.05E+00	0.038275*
nodefactor.gang.primary.Blood	-7.18E-01	3.13E-01	0.021842*
nodefactor.gang.primary.Crip	-1.36E+00	2.73E-01	< 1e-04***
nodefactor.gang.primary.Cutthroat	-1.44E+00	4.22E-01	0.000622***
nodefactor.gang.primary.Five Percenter	-8.71E-01	3.45E-01	0.011687*
nodefactor.gang.primary.Folk	-9.29E-01	2.95E-01	0.001664**
nodefactor.gang.primary.Global Avenue Boys	NA	0.00E+00	NA
nodefactor.gang.primary.Gotti Gang	NA	0.00E+00	NA
nodefactor.gang.primary.Grape Street	-1.39E+00	2.75E-01	< 1e-04***
nodefactor.gang.primary.Latin King	-1.75E+00	5.54E-01	0.001636**
nodefactor.gang.primary.Red Command	NA	0.00E+00	NA
nodefactor.gang.primary.Sinaloa	-2.72E+00	1.04E+00	0.008764**
nodefactor.gang.primary.Sureno	-2.72E+00	1.04E+00	0.008764**
nodefactor.gang.primary.Zetas	NA	0.00E+00	NA
nodefactor.gang.primary.Zoe Pound	NA	0.00E+00	NA

Signif. codes: 0 '***' 0.001 '**' 0.01 '*'

State Nodal Attribute Model

Nodal Attribute	Estimate	Std. Error	p-Value
edges	-6.11038	0.42627	< 1e-04 ***
nodefactor.state.Aleppo	1.3586	0.43851	0.001947 **
nodefactor.state.Antwerp	-0.60915	1.02426	0.552032
nodefactor.state.AR	-0.04682	0.43534	0.914351
nodefactor.state.AZ	1.49578	0.41767	0.000342 ***
nodefactor.state.CA	0.89546	0.21864	< 1e-04 ***
nodefactor.state.Caracas	0.08761	0.7412	0.905904
nodefactor.state.CO	0.78803	0.54718	0.149819
nodefactor.state.CT	-0.60915	0.73997	0.410389
nodefactor.state.DC	0.78803	0.54718	0.149819

nodefactor.state.DE	0.08761	0.7412	0.905904
nodefactor.state.FL	0.86326	0.25278	0.000638 ***
nodefactor.state.Free State	0.78803	0.41543	0.057841 .
nodefactor.state.GA	0.93798	0.22527	< 1e-04 ***
nodefactor.state.Haiti	-0.60915	1.02427	0.552035
nodefactor.state.IL	0.61135	0.24043	0.011001 *
nodefactor.state.IN	0.49671	0.46286	0.283215
nodefactor.state.Jawa Tengah	0.08761	0.7412	0.905904
nodefactor.state.KS	0.08761	0.5455	0.872397
nodefactor.state.KY	1.61722	0.4007	< 1e-04 ***
nodefactor.state.LA	-0.60915	0.73997	0.410389
nodefactor.state.Lima	-0.60915	1.02427	0.552035
nodefactor.state.MA	1.95845	0.29609	< 1e-04 ***
nodefactor.state.MD	0.08761	0.7412	0.905904
nodefactor.state.MI	-0.32026	0.54494	0.556734
nodefactor.state.MN	0.08761	0.5455	0.872397
nodefactor.state.MO	0.65268	0.43639	0.13475
nodefactor.state.MS	0.92998	0.29995	0.001932 **
nodefactor.state.NC	0.78803	0.25274	0.001821 **
nodefactor.state.NJ	0.27139	0.29629	0.359689
nodefactor.state.North-West	2.14977	0.34082	< 1e-04 ***
nodefactor.state.Nuevo Leon	-0.60915	1.02427	0.552035
nodefactor.state.NV	1.01482	0.33712	0.002610 **
nodefactor.state.NY	0.47972	0.25077	0.055755 .
nodefactor.state.OH	0.58872	0.29959	0.049407 *
nodefactor.state.PA	0.78803	0.41543	0.057841 .
nodefactor.state.Pichincha	-0.60915	1.02426	0.552033
nodefactor.state.Rio	0.49671	0.46286	0.283215
nodefactor.state.Sao Paulo	0.78803	0.54718	0.149819
nodefactor.state.SC	0.94461	0.23694	< 1e-04 ***
nodefactor.state.Sinaloa	0.76235	0.26789	0.004431 **
nodefactor.state.Tamaulipas	-0.20188	0.61717	0.743591
nodefactor.state.TN	0.5646	0.24269	0.019993 *
nodefactor.state.Tungurahua	0.08761	0.7412	0.905904
nodefactor.state.TX	0.78803	0.25274	0.001821 **
nodefactor.state.VA	0.08761	0.4622	0.849654
nodefactor.state.WI	1.61722	0.32122	< 1e-04 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

State Nodal Attribute Gang Set Interaction

Nodal Attribute	Estimate	Std. Error	p-Value
edges	-4.556754	0.611413	< 1e-04 ***

nodefactor.state.Aleppo	0.582058	0.490346	0.235213
nodefactor.state.Antwerp	-0.738621	1.059727	0.485808
nodefactor.state.AR	-0.076547	0.439837	0.861837
nodefactor.state.AZ	1.295661	0.427351	0.002431 **
nodefactor.state.CA	0.838465	0.234537	0.000350 ***
nodefactor.state.Caracas	0.468767	0.754458	0.534383
nodefactor.state.CO	0.871443	0.548624	0.112192
nodefactor.state.CT	-0.692174	0.740737	0.350077
nodefactor.state.DC	0.871443	0.548624	0.112192
nodefactor.state.DE	-0.689597	0.773004	0.372339
nodefactor.state.FL	0.778769	0.263172	0.003085 **
nodefactor.state.Free State	0.587365	0.425092	0.167053
nodefactor.state.GA	0.919842	0.229736	< 1e-04 ***
nodefactor.state.Haiti	-0.52613	1.024089	0.607424
nodefactor.state.IL	0.58838	0.244212	0.015983 *
nodefactor.state.IN	0.420341	0.470842	0.371995
nodefactor.state.Jawa Tengah	-0.113316	0.746686	0.879377
nodefactor.state.KS	-0.047473	0.549464	0.93115
nodefactor.state.KY	1.701311	0.402688	< 1e-04 ***
nodefactor.state.LA	-0.273605	0.776481	0.724564
nodefactor.state.Lima	-0.810209	1.027309	0.430305
nodefactor.state.MA	1.746636	0.304088	< 1e-04 ***
nodefactor.state.MD	0.02294	0.746193	0.975475
nodefactor.state.MI	-0.147299	0.54681	0.787639
nodefactor.state.MN	0.004805	0.547417	0.992996
nodefactor.state.MO	1.098368	0.501001	0.028355 *
nodefactor.state.MS	0.95179	0.301709	0.001607 **
nodefactor.state.NC	0.894352	0.262549	0.000658 ***
nodefactor.state.NJ	0.446317	0.41236	0.279098
nodefactor.state.North-West	1.926131	0.35447	< 1e-04 ***
nodefactor.state.Nuevo Leon	-1.386489	1.046591	0.185249
nodefactor.state.NV	0.947942	0.339962	0.005297 **
nodefactor.state.NY	0.342316	0.261898	0.191193
nodefactor.state.OH	0.553266	0.304436	0.069165 .
nodefactor.state.PA	0.575054	0.421181	0.172147
nodefactor.state.Pichincha	-0.738622	1.059739	0.485812
nodefactor.state.Rio	-0.28037	0.512202	0.584116
nodefactor.state.Sao Paulo	0.011084	0.589551	0.985
nodefactor.state.SC	0.995146	0.238174	< 1e-04 ***
nodefactor.state.Sinaloa	1.12992	0.648308	0.081355 .
nodefactor.state.Tamaulipas	-0.979154	0.654988	0.134935
nodefactor.state.TN	0.492531	0.250428	0.049211 *
nodefactor.state.Tungurahua	-0.041729	0.790704	0.957911

nodefactor.state.TX	0.746645	0.260998	0.004227 **
nodefactor.state.VA	0.010815	0.463412	0.981381
nodefactor.state.WI	1.470104	0.326973	< 1e-04 ***
nodefactor.gang.set.52 hoover	-0.790436	0.348729	0.023414 *
nodefactor.gang.set.60s	-1.158364	0.239704	< 1e-04 ***
nodefactor.gang.set.8 tray gangster crip	-0.656344	0.521341	0.208048
nodefactor.gang.set.80s	-0.600456	0.496558	0.226572
nodefactor.gang.set.90s	-2.306331	1.025163	0.024467 *
nodefactor.gang.set.antrax	-1.027016	0.634879	0.105737
nodefactor.gang.set.black disciple	-1.033136	0.470134	0.027982 *
nodefactor.gang.set.blood	-0.689021	0.244805	0.004884 **
nodefactor.gang.set.bounty hunter	-0.414348	0.461775	0.369562
nodefactor.gang.set.cambodia crip	0.111631	0.382827	0.770596
nodefactor.gang.set.crip	-0.57628	0.212281	0.006634 **
nodefactor.gang.set.cutthroat	-0.827381	0.356915	0.020441 *
nodefactor.gang.set.five percenter	-0.551804	0.235563	0.019156 *
nodefactor.gang.set.Florencia 13	-0.827381	0.544582	0.128688
nodefactor.gang.set.folk	-0.712536	0.231088	0.002046 **
nodefactor.gang.set.GD	-0.860359	0.225144	0.000133 ***
nodefactor.gang.set.global avenue boys	-2.280841	1.034219	0.027428 *
nodefactor.gang.set.gotti gang	-1.069366	0.470795	0.023122 *
nodefactor.gang.set.grape street	-0.938584	0.223946	< 1e-04 ***
nodefactor.gang.set.gulf cartel	-1.41029	0.863251	0.102323
nodefactor.gang.set.latin king	-0.647867	0.343931	0.059604 .
nodefactor.gang.set.maniac latin disciple	-0.254522	0.402505	0.527161
nodefactor.gang.set.mexican mafia	-1.436242	0.754793	0.057063 .
nodefactor.gang.set.neighborhood crip	-0.827381	0.544582	0.128688
nodefactor.gang.set.pj watts	-1.528062	0.739287	0.038740 *
nodefactor.gang.set.red command	NA	0	NA
nodefactor.gang.set.Satan Disciples	-1.787965	0.870764	0.040041 *
nodefactor.gang.set.sinaloa	-1.118836	0.616361	0.069489 .
nodefactor.gang.set.spanish gangster disciple	-2.280841	1.034211	0.027427 *
nodefactor.gang.set.zetas	NA	0	NA
nodefactor.gang.set.zoe pound	NA	0	NA

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

State Nodal Attribute Primary Gang Interaction

Nodal Attribute	Estimate	Std. Error	p-Value
edges	-6.251	0.712315	< 1e-04***
nodefactor.state.Aleppo	1.429008	0.523222	0.006311**
nodefactor.state.Antwerp	-0.638507	1.059763	0.546841
nodefactor.state.AR	0.020893	0.436119	0.96179

nodefactor.state.AZ	1.501796	0.425858	0.000421***
nodefactor.state.CA	0.984309	0.23291	< 1e-04***
nodefactor.state.Caracas	0.093344	0.745841	0.900403
nodefactor.state.CO	0.855849	0.547833	0.118231
nodefactor.state.CT	-0.732516	0.740965	0.32286
nodefactor.state.DC	0.855849	0.547833	0.118231
nodefactor.state.DE	0.157789	0.794251	0.842525
nodefactor.state.FL	0.874714	0.261462	0.000821***
nodefactor.state.Free State	0.793851	0.423636	0.060944.
nodefactor.state.GA	0.971628	0.229051	< 1e-04***
nodefactor.state.Haiti	-0.541467	1.024248	0.597049
nodefactor.state.IL	0.585434	0.242298	0.015685*
nodefactor.state.IN	0.508434	0.468401	0.277715
nodefactor.state.Jawa Tengah	0.093344	0.74584	0.900403
nodefactor.state.KS	0.123869	0.547256	0.820933
nodefactor.state.KY	1.685276	0.401605	< 1e-04***
nodefactor.state.LA	-0.463969	0.764531	0.543939
nodefactor.state.Lima	-0.603464	1.027266	0.556904
nodefactor.state.MA	1.810308	0.303234	< 1e-04***
nodefactor.state.MD	0.155341	0.741678	0.8341
nodefactor.state.MI	-0.273658	0.545902	0.616164
nodefactor.state.MN	-0.035598	0.547236	0.948134
nodefactor.state.MO	0.720473	0.437184	0.099355.
nodefactor.state.MS	0.997826	0.301086	0.000919***
nodefactor.state.NC	0.834787	0.256718	0.001147**
nodefactor.state.NJ	0.474288	0.414041	0.251998
nodefactor.state.North-West	1.866537	0.352777	< 1e-04***
nodefactor.state.Nuevo Leon	-0.539019	1.062932	0.612081
nodefactor.state.NV	1.061606	0.338684	0.001721**
nodefactor.state.NY	0.281961	0.260526	0.27913
nodefactor.state.OH	0.633103	0.30356	0.037015*
nodefactor.state.PA	0.638916	0.420584	0.128733
nodefactor.state.Pichincha	-0.638507	1.059771	0.546844
nodefactor.state.Rio	0.566929	0.543768	0.297136
nodefactor.state.Sao Paulo	0.858297	0.617146	0.164301
nodefactor.state.SC	1.006394	0.238179	< 1e-04***
nodefactor.state.Sinaloa	1.275677	0.647652	0.048873*
nodefactor.state.Tamaulipas	-0.131725	0.679953	0.846389
nodefactor.state.TN	0.623239	0.244807	0.010902*
nodefactor.state.Tungurahua	0.058301	0.79001	0.941172
nodefactor.state.TX	0.768798	0.259762	0.00308**
nodefactor.state.VA	0.024152	0.462819	0.958382
nodefactor.state.WI	1.495071	0.324093	< 1e-04***

nodefactor.gang.primary.Antrax	-0.201869	0.659933	0.759686
nodefactor.gang.primary.Black Disciple	-0.150766	0.506166	0.765811
nodefactor.gang.primary.Blood	0.111628	0.298514	0.708446
nodefactor.gang.primary.Crip	0.064445	0.282947	0.819829
nodefactor.gang.primary.Cutthroat	-0.126013	0.405672	0.756084
nodefactor.gang.primary.Five Percenter	0.354024	0.294916	0.229975
nodefactor.gang.primary.Folk	0.002448	0.28781	0.993213
nodefactor.gang.primary.Global Avenue Boys	-1.373806	1.049226	0.190415
nodefactor.gang.primary.Gotti Gang	-0.237015	0.458606	0.605285
nodefactor.gang.primary.Grape Street	-0.228473	0.294535	0.437921
nodefactor.gang.primary.Gulf Cartel	-0.708748	0.884434	0.422925
nodefactor.gang.primary.Latin King	0.099489	0.390257	0.798777
nodefactor.gang.primary.Red Command	NA	0	NA
nodefactor.gang.primary.Sinaloa	-0.41738	0.645771	0.518067
nodefactor.gang.primary.Sureno	-0.315293	0.500559	0.528771
nodefactor.gang.primary.Zetas	NA	0	NA
nodefactor.gang.primary.Zoe Pound	NA	0	NA

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Gang Nodal Attribute Model

Nodal Attribute	Estimate	Std. Error	p-Value
edges	-5.39939	0.60457	< 1e-04 ***
nodefactor.gang.20s	-1.30437	1.04532	0.212097
nodefactor.gang.30s	-0.60932	0.77035	0.428969
nodefactor.gang.40s	0.49694	0.51003	0.329887
nodefactor.gang.40s Gangster Crip	0.08765	0.58605	0.881114
nodefactor.gang.50s	1.01542	0.37751	0.007149 **
nodefactor.gang.52 hoover	0.3327	0.33368	0.318742
nodefactor.gang.60s	0.01651	0.31058	0.957606
nodefactor.gang.8 Tray Gangster Crip	-1.30437	1.04526	0.212071
nodefactor.gang.80s	0.31271	0.54172	0.563773
nodefactor.gang.90s	0.08765	0.58605	0.881114
nodefactor.gang.Antrax	-0.79227	0.54054	0.142726
nodefactor.gang.BD	-0.06759	0.36536	0.853222
nodefactor.gang.bishop Blood	1.49684	0.35182	< 1e-04 ***
nodefactor.gang.Blood	0.43025	0.30883	0.16357
nodefactor.gang.Blood hound brim	1.43041	0.40017	0.000351 ***
nodefactor.gang.bounty hunter	-1.30437	0.76969	0.090138 .
nodefactor.gang.brim	-1.30437	1.04529	0.212082
nodefactor.gang.BWA Gang	-1.30437	1.04527	0.212075
nodefactor.gang.Cambodia Crip	1.01542	0.37751	0.007149 **
nodefactor.gang.Crip	0.17715	0.30474	0.561013

nodefactor.gang.Cutthroat	0.22227	0.35081	0.526345
nodefactor.gang.Five Percenter	0.22729	0.30778	0.460229
nodefactor.gang.Florencia 13	-0.60932	0.77035	0.428969
nodefactor.gang.Folk	-0.18121	0.31093	0.560038
nodefactor.gang.GD	0.06825	0.30614	0.823582
nodefactor.gang.global avenue boys	-1.30437	1.04529	0.212085
nodefactor.gang.Gotti Gang	-0.60932	0.3652	0.095228 .
nodefactor.gang.Grape Street	0.10801	0.31078	0.728189
nodefactor.gang.gulf cartel	-1.30437	1.04527	0.212075
nodefactor.gang.Insane Gangster Disciple	-0.20194	0.50908	0.691602
nodefactor.gang.La Gente	-1.30437	1.04529	0.212082
nodefactor.gang.Latin Kings	0.0743	0.32401	0.818616
nodefactor.gang.Maniac Latin Disciple	0.31271	0.43875	0.476022
nodefactor.gang.Mexican Mafia	-0.60932	0.77035	0.428969
nodefactor.gang.Neighborhood Crip	0.08765	0.58605	0.881114
nodefactor.gang.Nine Trey Gangster	0.31271	0.43875	0.476022
nodefactor.gang.OMB	-1.30437	1.04529	0.212082
nodefactor.gang.Piru	-0.30257	0.38007	0.42597
nodefactor.gang.PJ Watts	-1.30437	1.04527	0.212076
nodefactor.gang.Red Command	0.49694	0.31767	0.117737
nodefactor.gang.Satan Disciples	-0.60932	0.77035	0.428969
nodefactor.gang.Sex Money Murder	1.20157	0.42048	0.004268 **
nodefactor.gang.Sinaloa	-0.25488	0.34456	0.45946
nodefactor.gang.Spanish Gangster Disciple	1.77815	0.37562	< 1e-04 ***
nodefactor.gang.Varrio Longos 13	-1.30437	1.04526	0.212071
nodefactor.gang.Zetas	-1.30437	0.58483	0.025724 *
nodefactor.gang.Zoe Pound	-1.30437	1.04529	0.212082

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

VITA

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Ryan J. Roberts was born in Oregon, OH. After graduating from Cardinal Stritch High School in 1995, he attended Bowling Green State University, where he received his Bachelor of Science in business administration with a concentration in international business in 2002. In 2004 he received his Master of Business Administration with a concentration in international business at the University of Toledo, and in 2011 he received his Master of Arts in international studies with a concentration in global political economy and a graduate certificate in modeling and simulation at Old Dominion University. While studying at Old Dominion University, he interned at the NATO Civil-Military Fusion Center. He worked as an Assistant Knowledge Manager on the Haiti Response Team during the earthquake of 2010. In the interim between graduating from Old Dominion University and pursuing his doctorate in international studies with a concentration in international security, he worked as a correctional officer on the Security Threat Group Intelligence Committee at Pasquotank Correctional Institute and served on the Prison Emergency Response Team. While completing his doctorate, he attended the Inter-university Consortium for Political and Social Research at the University of Michigan, where he studied social network analysis and game theory.