



## NATIONAL NETWORK FOR SAFE COMMUNITIES

### NOTES FROM THE FIELD Chicago Violence Reduction Strategy: Applications of Social Network Analysis

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By Jennifer Margolis and DaWana Williamson<sup>1</sup>

Social network analysis—a discipline that grew out of sociology to map and measure relationships and flows between individuals or groups—is increasingly applied by criminologists and criminal justice practitioners to visualize and better understand crime patterns. In Chicago, social network analysis is an integral part of the city’s Violence Reduction Strategy (VRS), modeled on the National Network for Safe Communities’ group violence reduction strategy. It is used to expand and improve the Chicago Police Department’s (CPD) intelligence on gangs, groups and local gang factions; to identify the most socially connected group and gang members to take the VRS antiviolence message back to their associates; and to assess the impact of law enforcement efforts on groups or gangs. This document outlines three examples of social network analysis as a tool to narrowly and effectively focus law enforcement resources on group violence.

#### **Example 1: Expanding Intelligence on Groups and Gangs.**

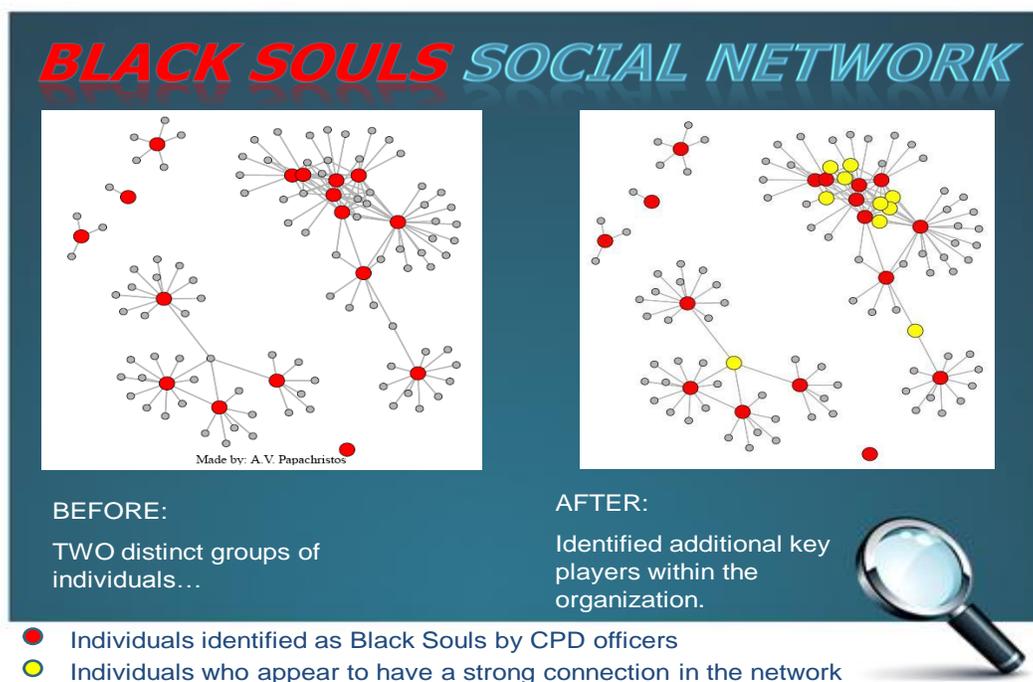
Following Chicago’s first group and gang member notification forum, or call-in, in August 2010, a member of the Black Souls gang was charged with the murder of a rival gang member. In line with the National Network’s group violence reduction strategy, swift and meaningful law enforcement actions were taken not only against the shooter but against the Black Souls as a group.

As a first step in this process, front-line officers and staff from CPD’s gang enforcement unit, gang intelligence unit, patrol, and tact divisions held a round-table meeting and, drawing on existing intelligence, jointly identified known members of the Black Souls. These individuals are represented by the red dots in Illustration 1.

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## Illustration 1



Using social network analysis, these individuals were then mapped with individuals with whom they had been arrested in the last five years to identify other gang members who may not have been previously known to the CPD. Specifically, based on the list of names produced by the round-table group, Professor Andrew Papachristos of the University of Massachusetts Amherst, one of the CPD’s key research partners, created a “two-degree network” of associates. The “first-degree network” mapped the known gang members with everyone they had been arrested or “contact-carded” over the past five years. He then repeated this step to identify additional associates (“co-arrestees”) of those in the first-degree network, thereby creating the “two-degree network.”

Illustration 1 is a visual representation of these networks. In the diagram on the right, the yellow dots represent individuals—not previously known to CPD as Black Souls—that social network analysis identified as having the strongest network connections to known Black Souls. Their names were sent back to the round-table group for confirmation. It found that nine of the ten individuals were indeed associated with this particular gang, adding to the CPD’s intelligence.

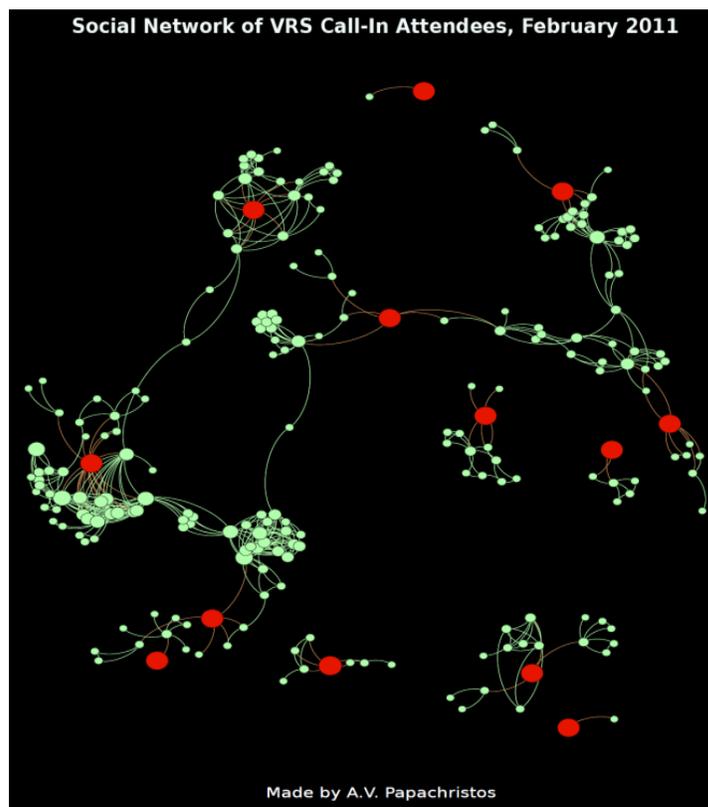
## Example 2: Selecting Call-In Participants for “Network Power.”

Social network analysis is also used to determine which gang members should be mandated to attend the VRS team’s next call-in. This is done by assessing individuals’ “network power”—or level of connectedness to other gang members—that would allow them to effectively transmit the antiviolence messages delivered at a call-in back to the largest number of affiliated gang members.

In the most recent VRS call-in, in February 2011, the CPD looked at the social networks for each gang faction active in the 11<sup>th</sup> district (the district in which VRS is currently operating) and then worked with the Illinois Department of Corrections & Parole to determine which of the individuals identified through social network analysis were under state supervision. Parolees with the strongest network connections were then mandated to attend the call-in. The red dots in Illustration 2 represent the individuals selected for the call-in from the gang factions active in the district.

The strength of the selected individuals’ “network power”, as represented in Illustration 3, suggests that the VRS’s antiviolence message was delivered to large numbers of gang members not present at the call-in.

### Illustration 2

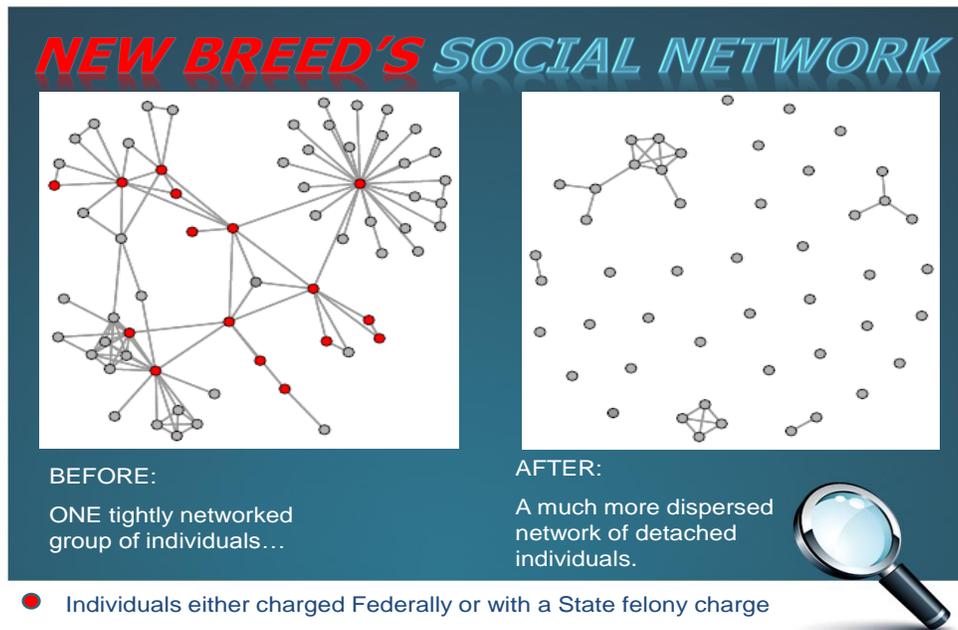


### Example 3: Assessing Law Enforcement Impact.

Social network analysis has also been applied by the CPD to assess the impact of its enforcement actions against gangs in response to violence. By examining an illustration of a gang's network before and after an enforcement action, the CPD is able to assess whether it did in fact remove key members.

Illustration 3 represents a before-and-after example. It shows clearly that the enforcement action against the New Breeds successfully broke off central network connections, making it more difficult for the group to reorganize.

Illustration 3



### Implications for Practitioners

A recent op-ed by Professor Papachristos for the *Chicago Sun-Times* stressed how SNA can also be used to more accurately assess risk levels of violence in specific communities.<sup>2</sup> Papachristos found that around 70 percent of the 191 homicides that occurred in Chicago's 11<sup>th</sup> police district over the past five years occurred in a network consisting of just 1,500 people, all of them with criminal

<sup>2</sup> Papachristos, Andrew V. (2011). "Murders, Victims Share Social Ties." *Chicago Sun-Times*. January 28. Retrieved from: <http://www.suntimes.com/news/otherviews/2877760-452/homicide-network-social-risk-victims.html>

records. The risk of becoming a homicide victim for residents in the district is 3:1000; however for the 1,500 people within the network, the risk surges to 30:1000.

This finding implies that the best use of all resources—law enforcement, services and community energy—is to focus on this very small segment of a population actually killing and being killed. That is what the National Network group violence strategy is designed to do. Social network analysis provides an empirical method to map and assess the structures of these groups and gangs whose members are killing and dying—as well as the impact of violence reduction efforts. Thus, social network analysis opens new windows of opportunity to decrease homicide and serious violence in the most vulnerable communities.