

Using SOCIAL NETWORK ANALYSIS as an Evaluation Tool

By Marcela Gutiérrez-Mayka

When Marcia and her four children came from Nicaragua to East Little Havana, Miami in the mid 1990s, they had no money, no fixed place to live, and no friends. They knew no one in the neighborhood and the fear of being deported made Marcia lock her young children up all day long in the room where they were staying. Marcia didn't have a job and was so desperate and depressed that she was actually considering killing her children and herself.

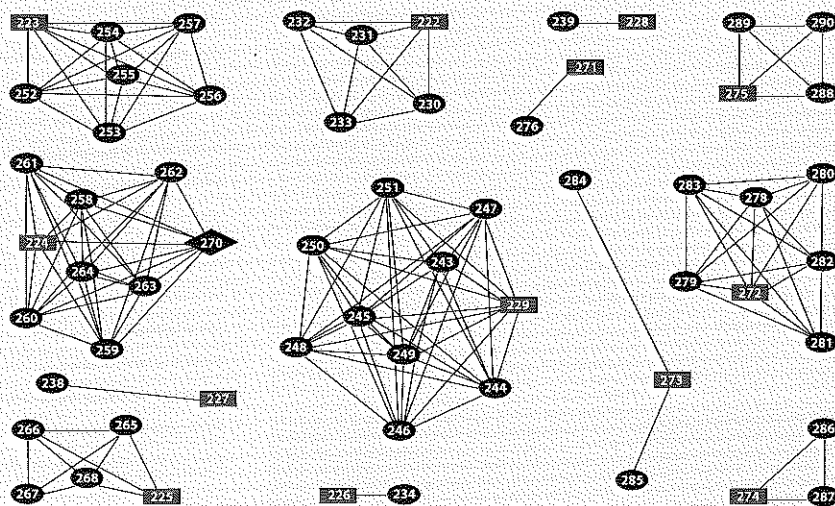
But then she met Maria, a neighbor and trained "natural helper" in the EQUIPO program who worked at the Abriendo Puertas Family Resource Center. As a natural helper, Maria had been taught to identify families in crisis and provide the first line of intervention in the community by gaining their trust and slowly connecting them to the formal resources available at the Family Resource Center. In fact, what Maria was doing was helping isolated immigrant families re-create the natural support networks they had left behind when they left their native countries.

Marcia is one of many residents of the East Little Havana section of Miami who benefit from the EQUIPO Familiar del Barrio (or Neighborhood Family Team), a team of professionals and community members who help families in need. EQUIPO uses informal or natural helpers to develop relationships between potential service recipients and human service professionals who otherwise would not be interacting together. It was funded by the Annie E. Casey Foundation's Mental Health Initiative for Urban Children.

WHAT'S A SOCIAL NETWORK?

Simply put, a social network is a set of individuals, known as "nodes" in the network lingo, connected by a set of ties, or relations of emotional support. The connections they establish with each other vary in strength, direction (reciprocal versus non-reciprocal), density (how closely knit the network is), centrality (what position the person occupies in the network), and content (the nature of the connection: emotional, financial, informational, etc.). According to Wellman (1981), the concept of social networks was first used by anthropologists in the 1950s in describing ties that develop across cultural groups or social categories. Sociologists took up the study of networks from a different perspective, their interest focusing on describing the structure of networks as precisely as possible. For this purpose, they developed sociometric techniques that translated into "pictures" of the network, and matrix algebra methods to quantify the density of ties.

ANALYSIS OF PRE-EQUIPO SOCIAL NETWORK



The pre-EQUIPO network is composed of 13 sets of disconnected clusters (dark grey rectangles represent participants, purple ovals represent members of their support system, and the black diamond represents a service provider). Neither costs nor benefits move easily across the whole systems. Social capital is generally confined within each cluster.

The configuration seen in both figures (above and on p. 3) is arrived at through a mathematical modeling program that defines the distance between clusters and participants.

NETWORK RESOURCES

CONNECTIONS. The Official Journal of the International Network for Social Network Analysis (see website: <http://www.sfu.ca/~insna/indexConnect.html>)

SOCNET is a listserv for network researchers around the world to discuss research and professional issues, make announcements and request help. (To join, send a message to listserv@lists.uff.edu. In the first line of the body of the message type: SUBSCRIBE SOCNET <your name>)

Books:

Albert-Laszlo Barabasi, *Linked: The New Science of Networks*. Perseus, 2002.

Mark Buchanan, *Nexus: Small Worlds and the Groundbreaking Science of Networks*. W. W. Norton, 2002.

Malcolm Gladwell, *The Tipping Point: How Little Things Can Make a Big Difference*. Little, Brown, 2000.

Benjamin Gottlieb, ed., *Social Networks and Social Support. Sage Studies in Community Mental Health, Volume 4.* Sage Publications, 1981.

Peter Marsden and Nan Lin, eds., *Social Structure and Network Analysis*. Sage Publications, 1982.

Stanley Wasserman, Katherine Faust and Dawn Iacobucci, *Social Network Analysis: Methods and Applications*. Cambridge University Press, 1994.

Articles:

Albert-Laszlo Barabasi and Eric Bonabeau, "Scale-Free Networks." *Scientific American*, May 2003.

Mark Granovetter, "The Strength of Weak Ties." *American Journal of Sociology* 78: 1360-80, 1973.

The multi-year evaluation of EQUIPO was brought to OMG by Gutiérrez-Mayka in 2002. It focused on outcomes for the families receiving services, an analysis of the new neighborhood networks resulting from program participation, and the impact of participation on team members.

The work of the sociologists further developed into the study of *personal networks*, or the network of ties of a central individual or a sample of individuals, and led researchers to look at how the ties of an individual to the larger social system affect his/her access to resources. *Whole network* studies went further by looking at all ties of a certain sort (e.g., informational) among all members of a population (e.g., management team members in a large organization). In addition to anthropologists and sociologists, others such as epidemiologists, communication scientists, and political scientists have approached research questions from a network perspective, studying how structural characteristics of the network (e.g., how tightly bound the group is) affect the flow of things, such as information or disease, through a population. (Some of the professionals on the SOCNET listserv have just begun a network analysis of the spread of the SARS virus.)

NETWORKS PLAY A VALUABLE ROLE IN COMMUNITY BUILDING

As an anthropologist who has worked in the human services field for the last 15 years, my interest in studying social networks started when I met Marcia, the Nicaraguan mother of four at the beginning of this story. After encountering Maria, Marcia connected with the tightly knit network of providers and volunteers at the family resource center, and with their help, turned her life around. When her family

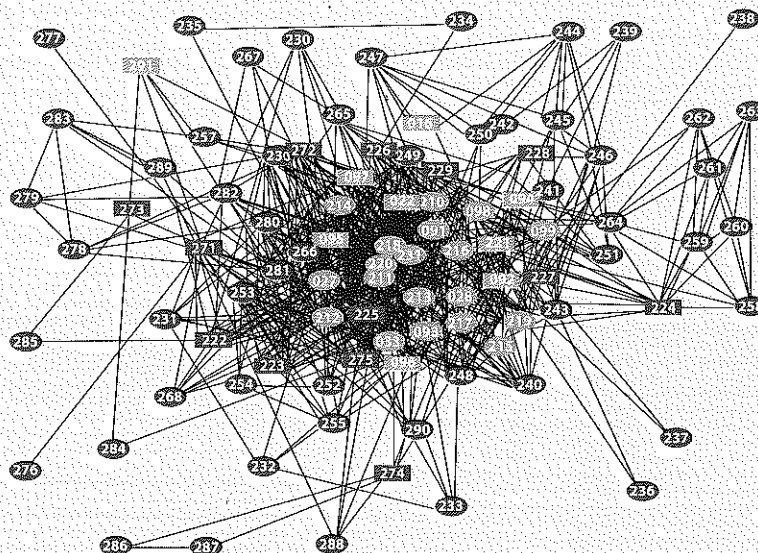
life stabilized, she began to volunteer at the center, and became a trained natural helper like Maria. Marcia and her peers became the focus of an evaluation of the role of natural helpers in building social support networks among families in need. My research showed that through interaction with natural helpers, nicknamed "Madrinas" or Godmothers, in Miami, the average number of ties or connections that families had prior to becoming involved with the program grew from 5 to 17. My qualitative interviewing of program participants revealed that in addition to expanding a family's network of support by connecting them to service providers and other families, the natural helpers also helped improve their emotional health and self-esteem. The transformation from recipients of help to providers of help, such as the one Marcia experienced, was further evidence of the role that support networks play in building overall social capital in a community.

HOW WE'RE USING SOCIAL NETWORK ANALYSIS

When I joined OMG three years ago, I brought my research interest in networks as sources of support with me and expanded it to a new population. A grant from the Philadelphia Department of Human Services has allowed me to work with youth who are ready to leave the foster care system and become

“When people need help, they can either buy it, trade for it, steal it, get it from governments and charities, or obtain it through their personal communities: supportive ties with friends, relatives, neighbours and workmates. Such ties supply ‘network capital,’ the form of ‘social capital’ that makes resources available through interpersonal ties. It is widely available, usually specialized, and unevenly distributed among people, ties and networks. Network members provide emotional aid, material aid, information, companionship, and a sense of belonging. Their ‘social support’ is one of the main ways that households obtain resources to deal with daily life, seize opportunities, and reduce uncertainties.” — Barry Wellman, *“The Persistence and Transformation of Community: From Neighbourhood Groups to Social Networks: Report to the Law Commission of Canada”* (2001).

ANALYSIS OF POST-EQUIPO SOCIAL NETWORK



In the post-EQUIPO network, there are many more relationships, so the network has a much higher density than the pre-EQUIPO network. Costs are bound to be higher, but the benefits are far greater. While there is more interaction among the participants themselves, sharing of information and resources, there is clearly increased involvement of the professional providers (dark grey rectangles represent participants, dark purple ovals represent members of their support system, violet rectangles represent natural helpers, and light grey ovals represent professional service providers).

independent. As part of the evaluation of a new one-stop service center program designed to work with youth leaving the foster care system, OMG will be conducting a network analysis with a sample of program participants. The goal is to compare the structure of their networks before and after obtaining services from the center to see if the program has helped them establish connections that will assist them when they become independent. A companion study funded by the Annie E. Casey Foundation will look at how young people who have left the foster care system and have been

successful in maintaining their independence build and use social networks to their advantage.

The latest addition to the network studies we are conducting at OMG comes from a grant from the W.K. Kellogg Foundation. The Foundation’s Networks for Rural Policy Development initiative (NRPD) is an attempt to help small rural development organizations, a regional coalition and a set of regional and national strategic alliances (such as the National League of Cities, the Council of State Governments, and the Appalachian

Regional Commission) develop communications strategies that will effectively influence and inform rural policy on a national level. The network analysis, as part of the larger evaluation, will look at how stakeholders at local, regional, and national levels connect with each other, how strong their ties are, who are the information gatekeepers in the network, what type of information is exchanged, what are the most effective communication channels, and whether the information generated at the local level ultimately finds its way to the national level. ■

A Project Director, Marcela Gutiérrez-Mayka is a researcher and program evaluator who joined OMG with a background in human services to children and families, with a particular emphasis on mental health issues and minority populations. Her work has focused on social service delivery issues, at-risk children in rural and urban settings, and children’s mental health services and system reform. To contact Marcela, email her at marcela@omgcenter.org.