

SOCIAL NETWORKS AND SCIENTIFIC RESEARCH AND CAREERS

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Overview

- Social Networks 101: The language of social networks
- Social networks and the success of groups and organizations
- Social networks and individuals' advancement
- Special issues for women in male-dominated fields
- Networks and effective disaster mitigation and preparation

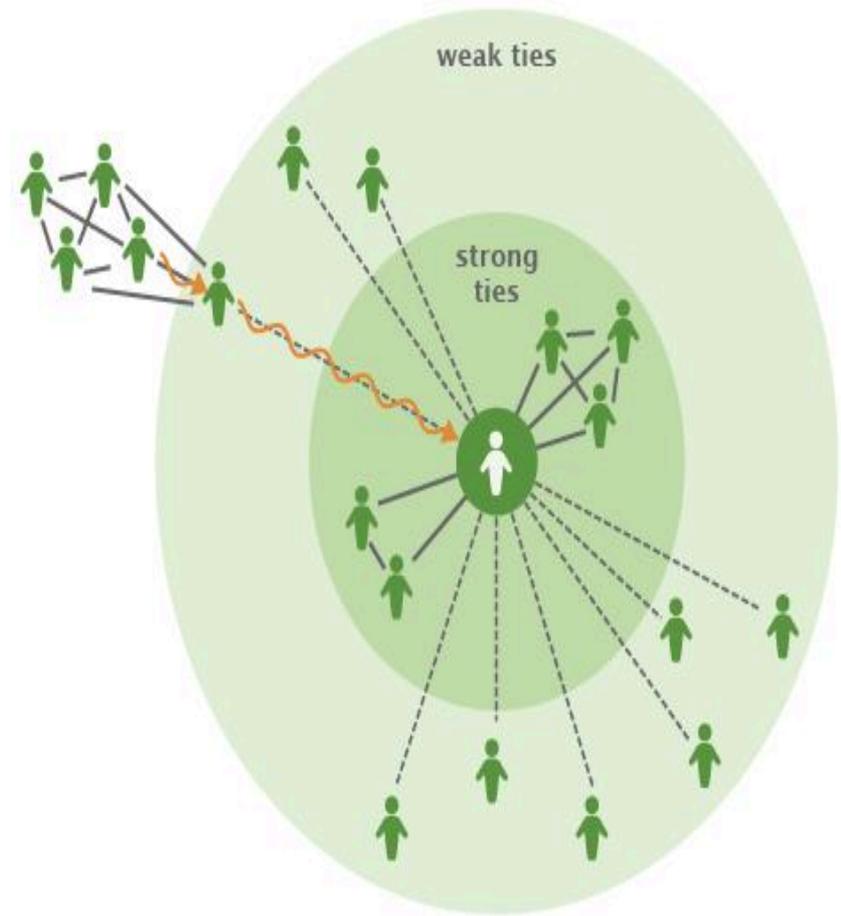
Social Networks

- Patterns of social relationships
- Connect social units (nodes)
- Connections are called social ties
- Occur at level of individuals, groups or organizations, and communities



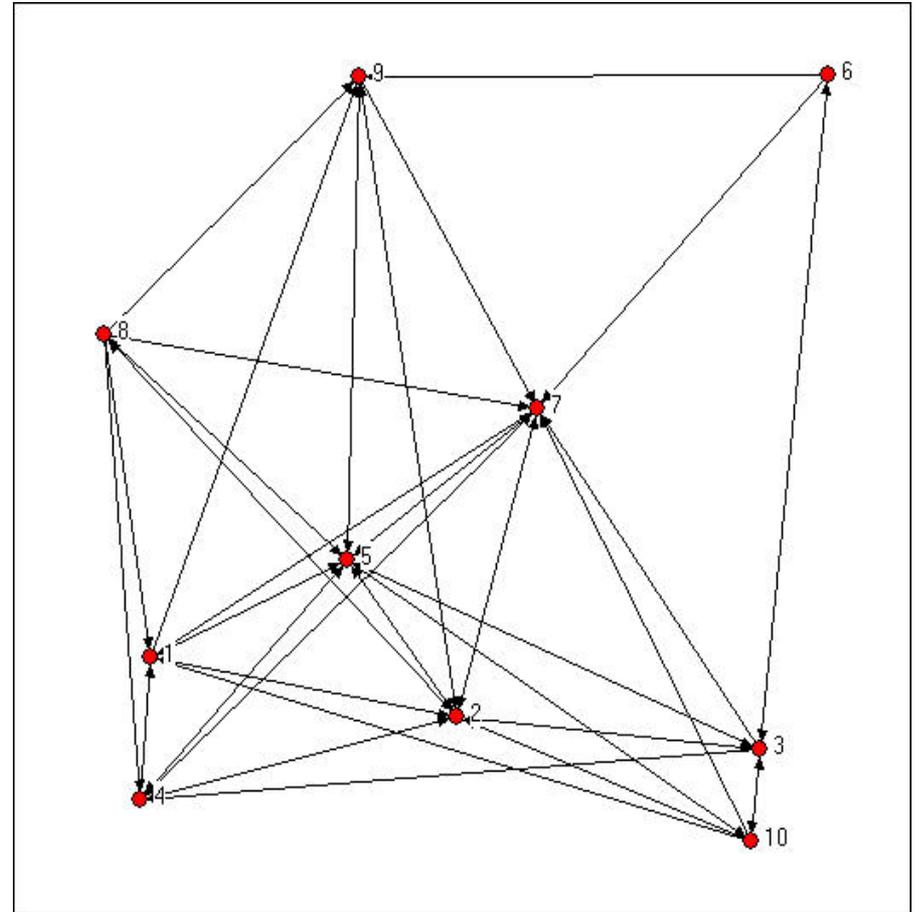
Network Terminology

- Strong ties
- Weak ties
- Density
- Extensivity
- Reciprocity
- Social Capital
- Opportunities and constraints

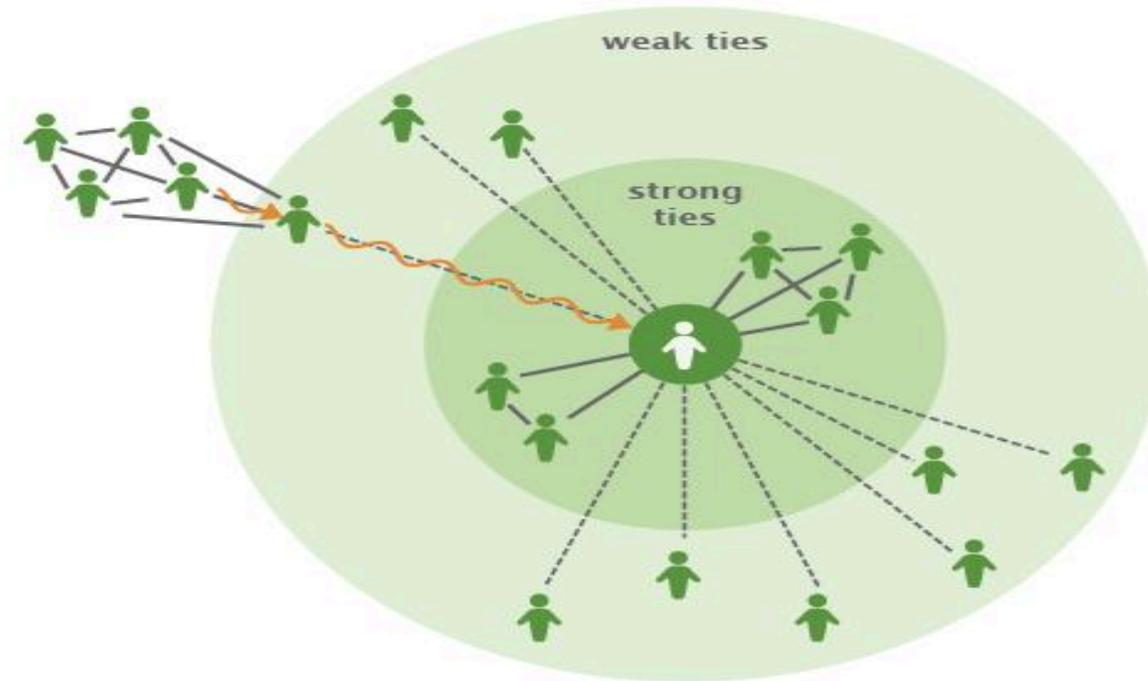


Social Networks and the Success of Groups and Organizations

- Importance of
 - Extensive networks
 - Reciprocal ties
- Promote
 - Trust
 - Information
 - Cooperation, competition, & joint gains

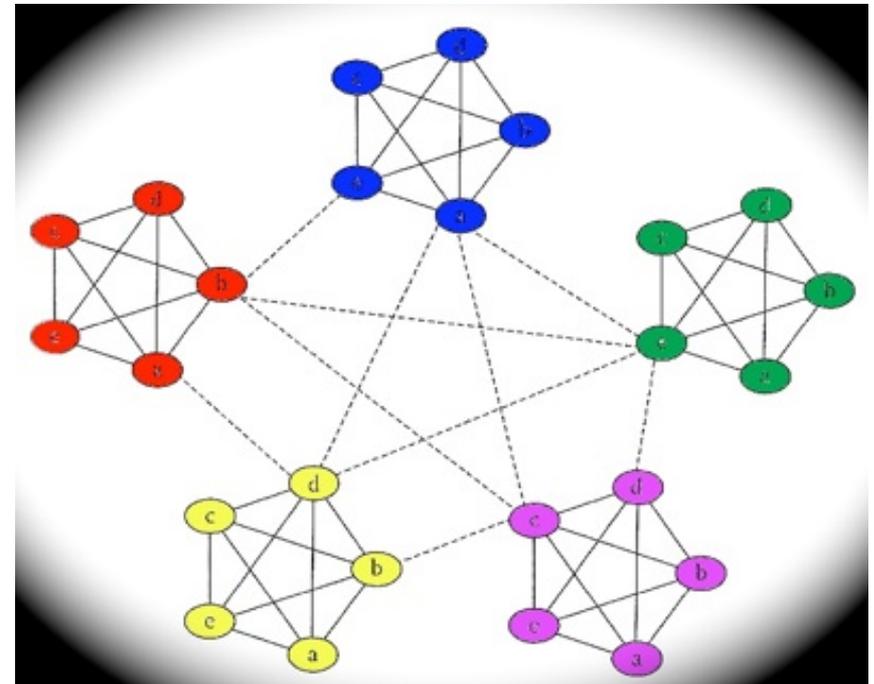


Individuals' Career Advancement: Weak and Strong Ties



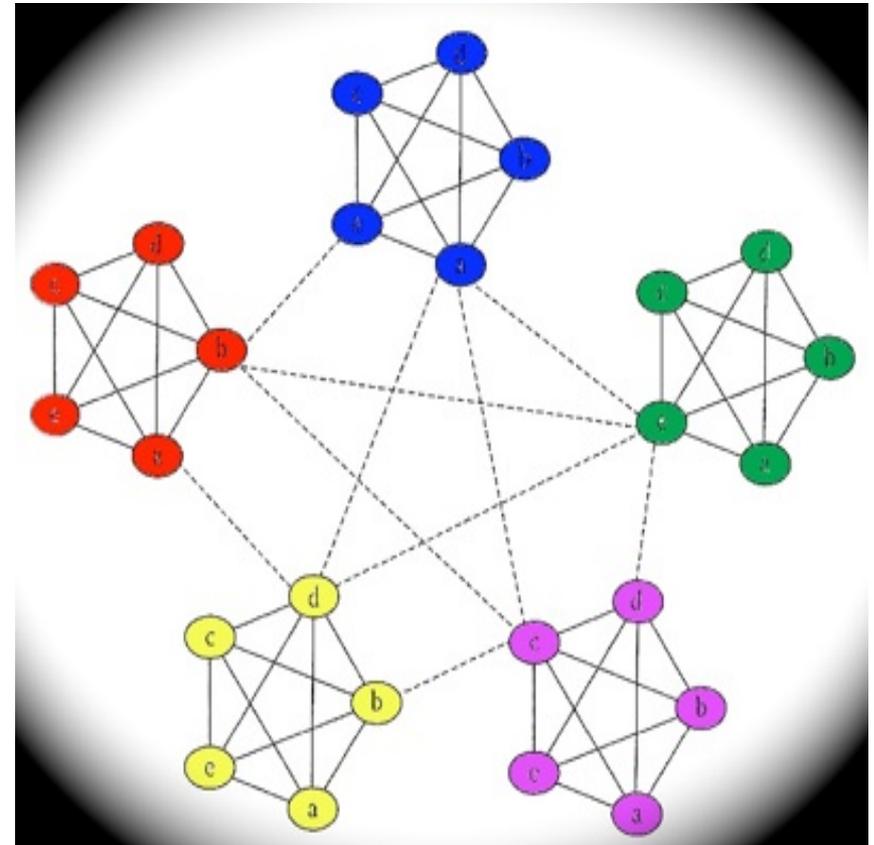
Women's Professional Networks in Male Dominated Fields

- Less extensive than men's
- Less diverse than men's
- Less likely to include mentors and role models
- Less often in strategic locations
- All are factors important for success



Using Networks to Enhance Career Development

- Extensive ties
- Diverse ties
- Strong ties
- Weak ties
- Mentoring
- Finding right approach for one's personality and needs



Social Networks and Effective Mitigation and Preparation

- Fatalities from disasters largely unrelated to magnitude ($r=.10$)

<u>Site and Year</u>	<u>Magnitude</u>	<u>Fatalities</u>
Northridge, 1994	6.7	51
Haiti, 2010	7.0	170,000
Loma Prieta, 1989	7.1	63
South Asia, 2005	7.6	75,000
Chile, 2010	8.8	900
Indian Ocean, 2004	9.0	185,000
Japan, 2011	9.0	15,000

Social Vulnerability

- “...the degree to which societies or socio-economic groups are affected by stresses and hazards, whether brought about by external forces or intrinsic factors – internal and external – that negatively impacts the social cohesion of a country”
- Risk of harm = hazard strength + vulnerability
- Strong social networks (at individual, community, and global level) promote resiliency (lessen vulnerability)
- Poor individuals and nations most at risk, for least likely to have the social cohesion and social networks needed for resiliency

Interlocking Levels of Analysis

- Individual network characteristics impact organizational and global networks and vice versa
- Strengthening one's own networks benefits one's community and nation
- Strengthening a community's and nation's networks benefits the individuals