

kayla de la haye

integrating systems and sectors toward obesity solutions

june 30 2020

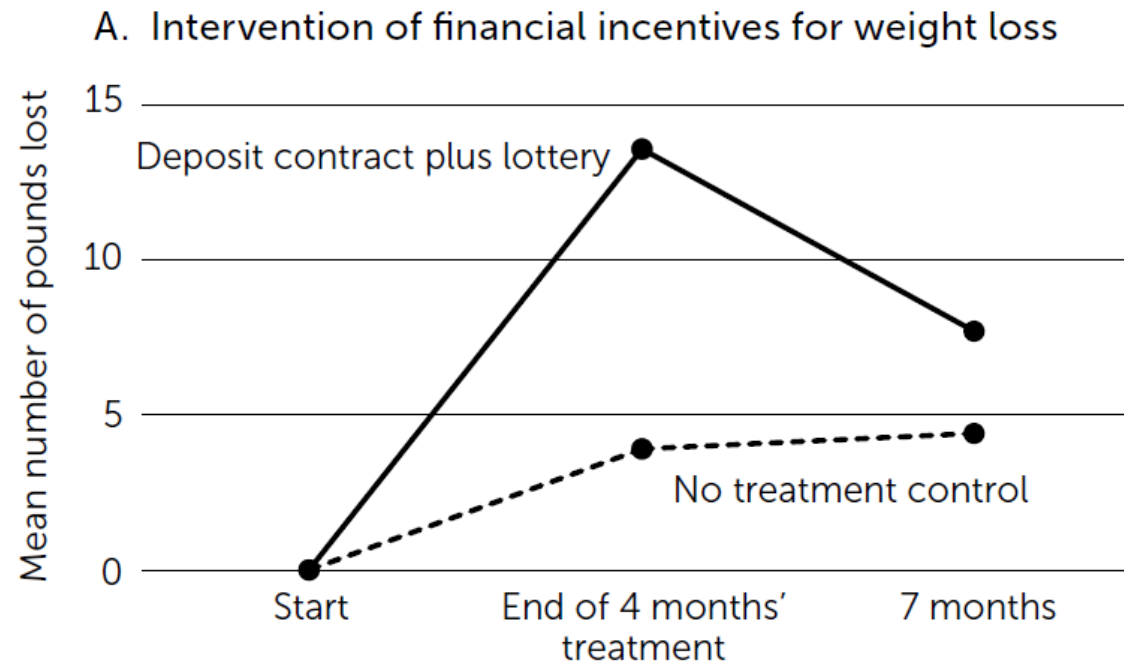
relationships & social networks



No conflicts to disclose

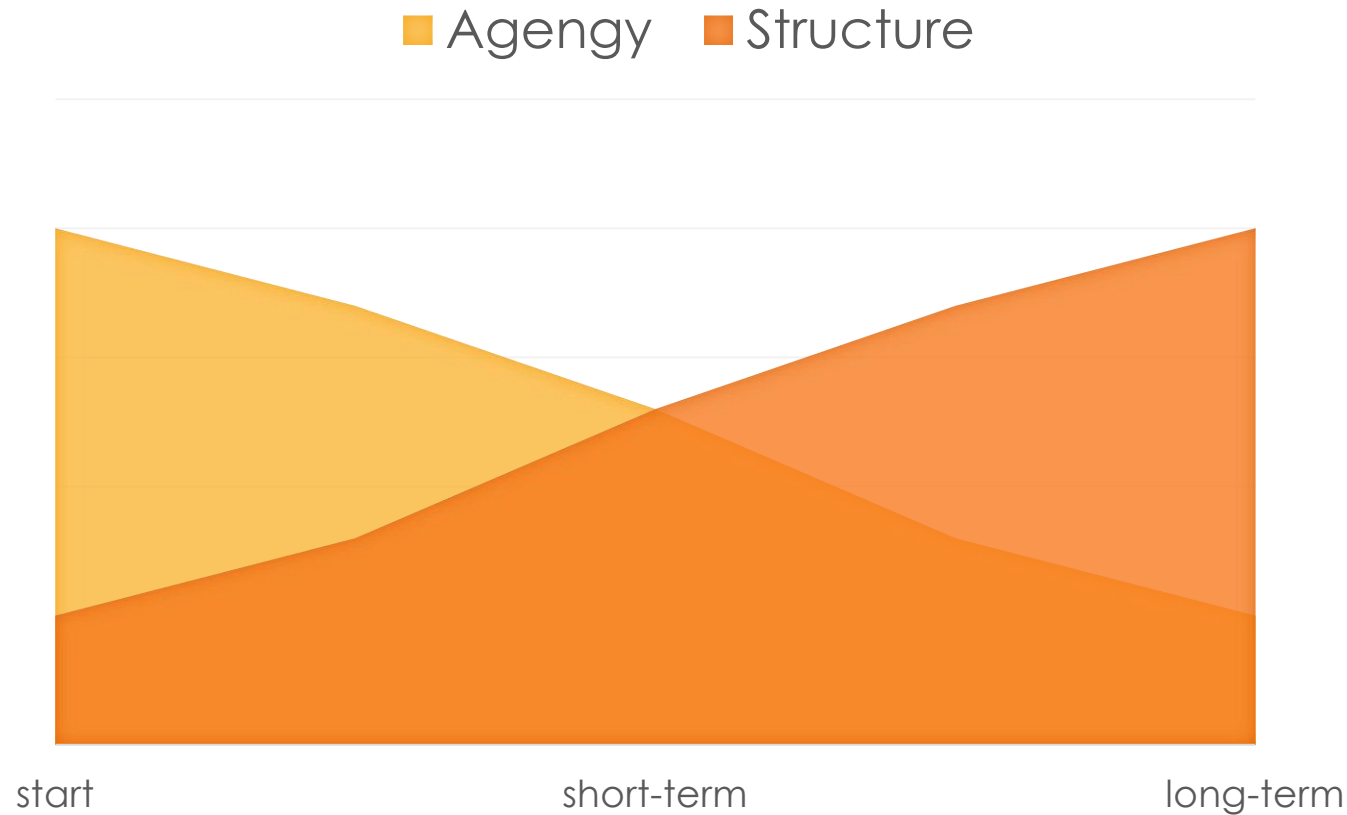
sustainable change in health behaviors

Figure 1. The triangular relapse pattern in health behavior change over time



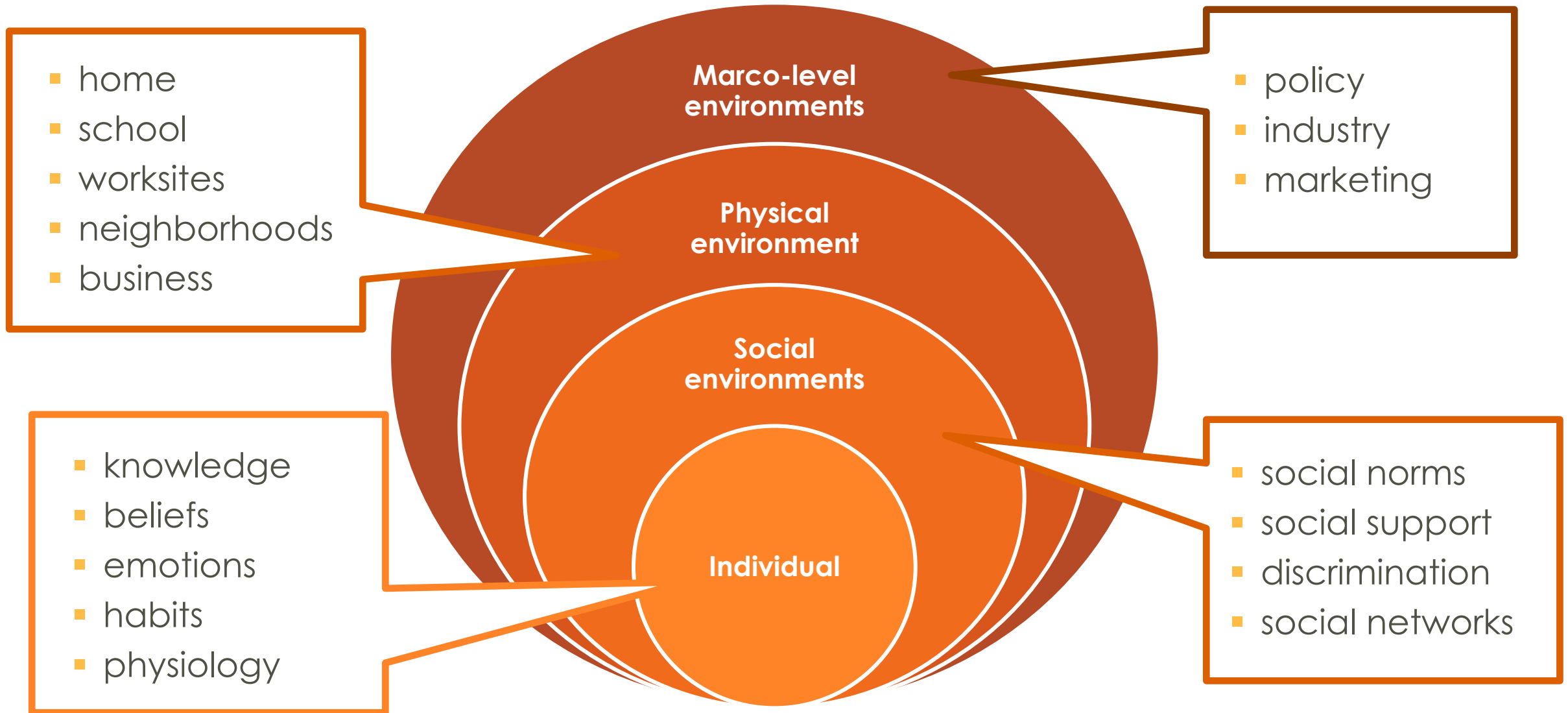
Wood & Neal, 2016

sustainable change in health behaviors

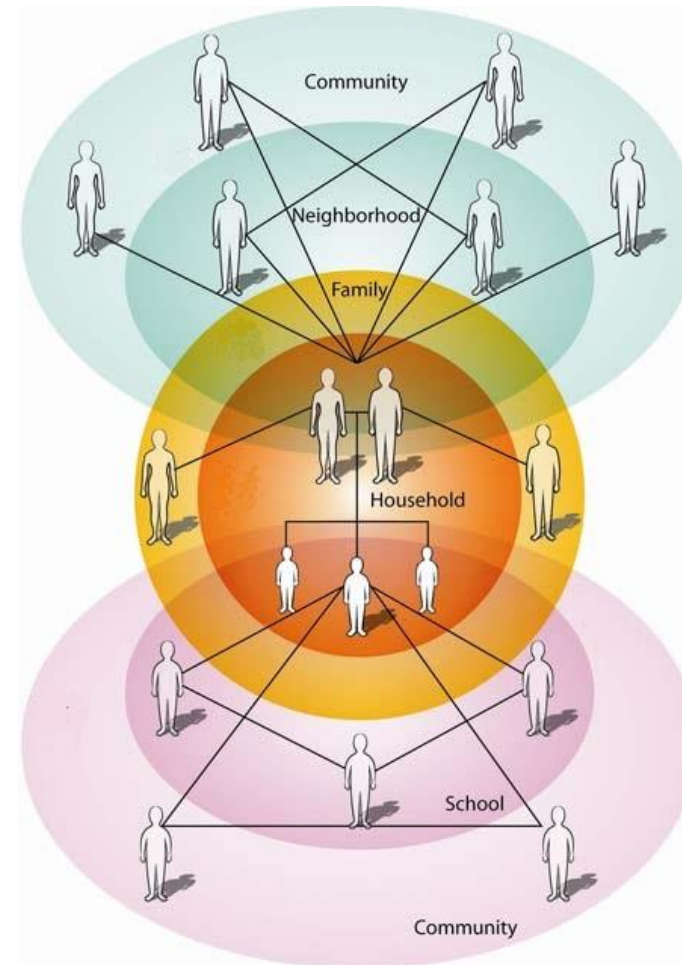


short-term change: individual agency & choice

long-term change: structural (social & environmental) influences

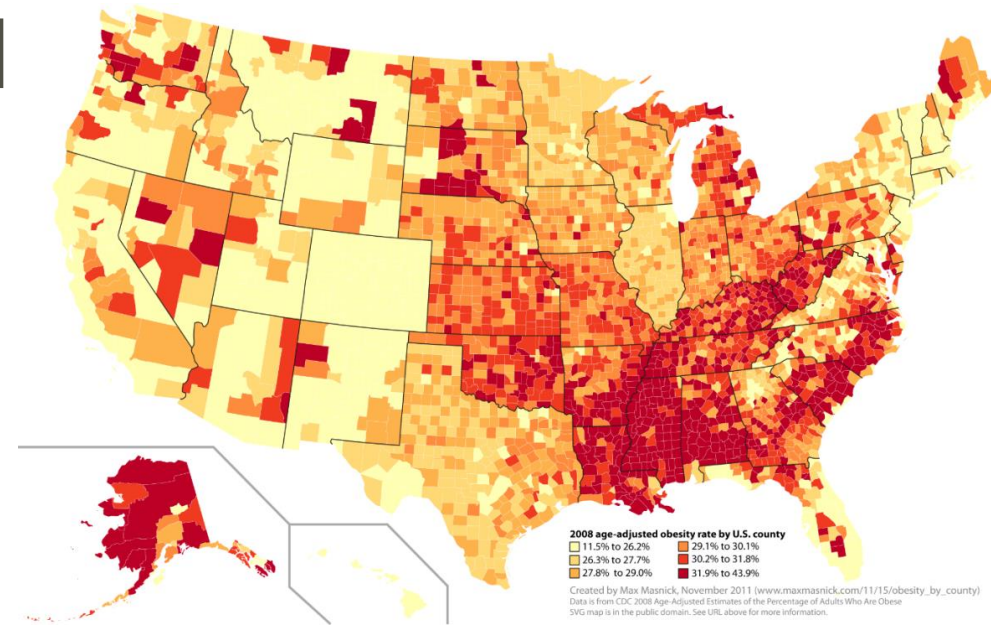
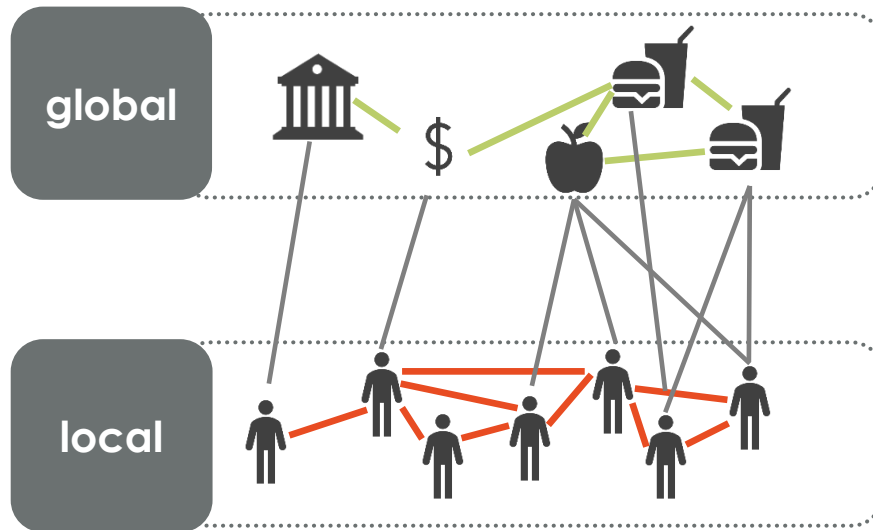


- **Local, personal social networks** influence obesity risk



Koehly & Loscalzo, 2009

- **Global social networks** [community, stakeholder, decision-maker networks] influence environmental obesity risk

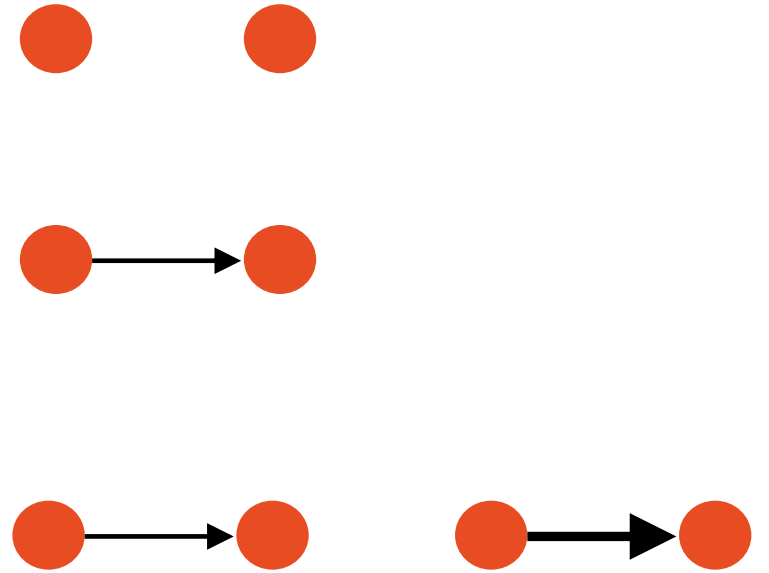


Age-adjusted obesity rates by U.S. county (2008).
https://maxmasnick.com/2011/11/15/obesity_by_county/

what are social networks?

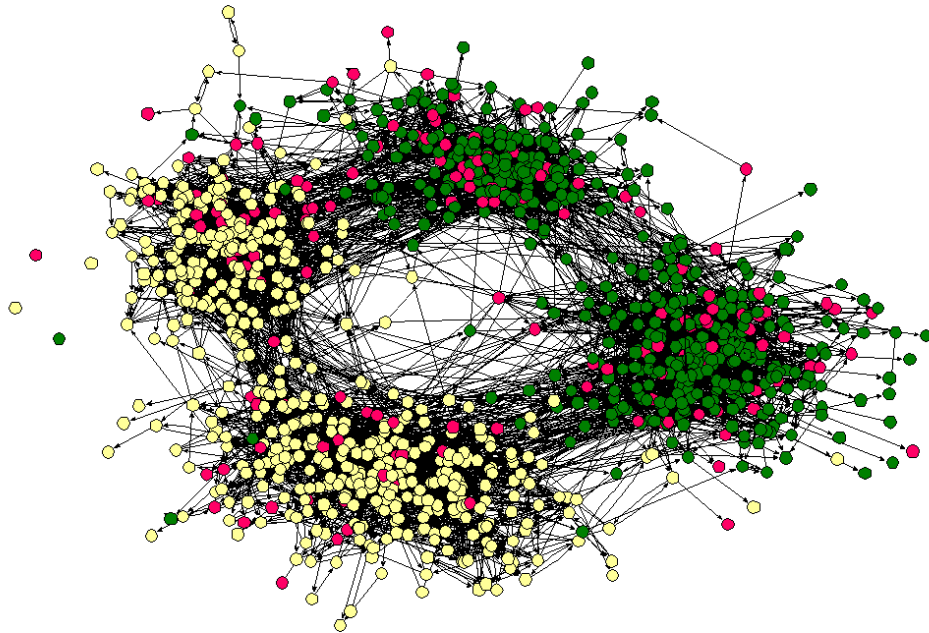
- **Social networks are...**
 - social structures, made of social actors and the relationships among these actors
- Diverse types of relationships & social actors:
 - kin/friendship among community members
 - re-tweets among Twitter users
 - collaboration between organizations
 - partnership among cities, states, and countries

- “nodes” represent social actors
- lines (ties) between nodes represent relationships
- relationships can have many qualities
 - strong vs. weak
 - friendship, support, collaboration

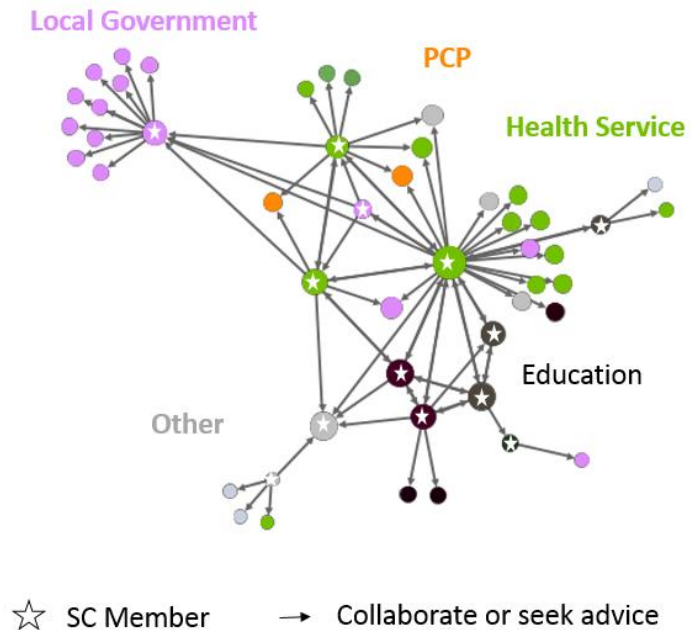


Social networks analysis (SNA): analytic framework to study *emergent patterns of actors & ties in a network*

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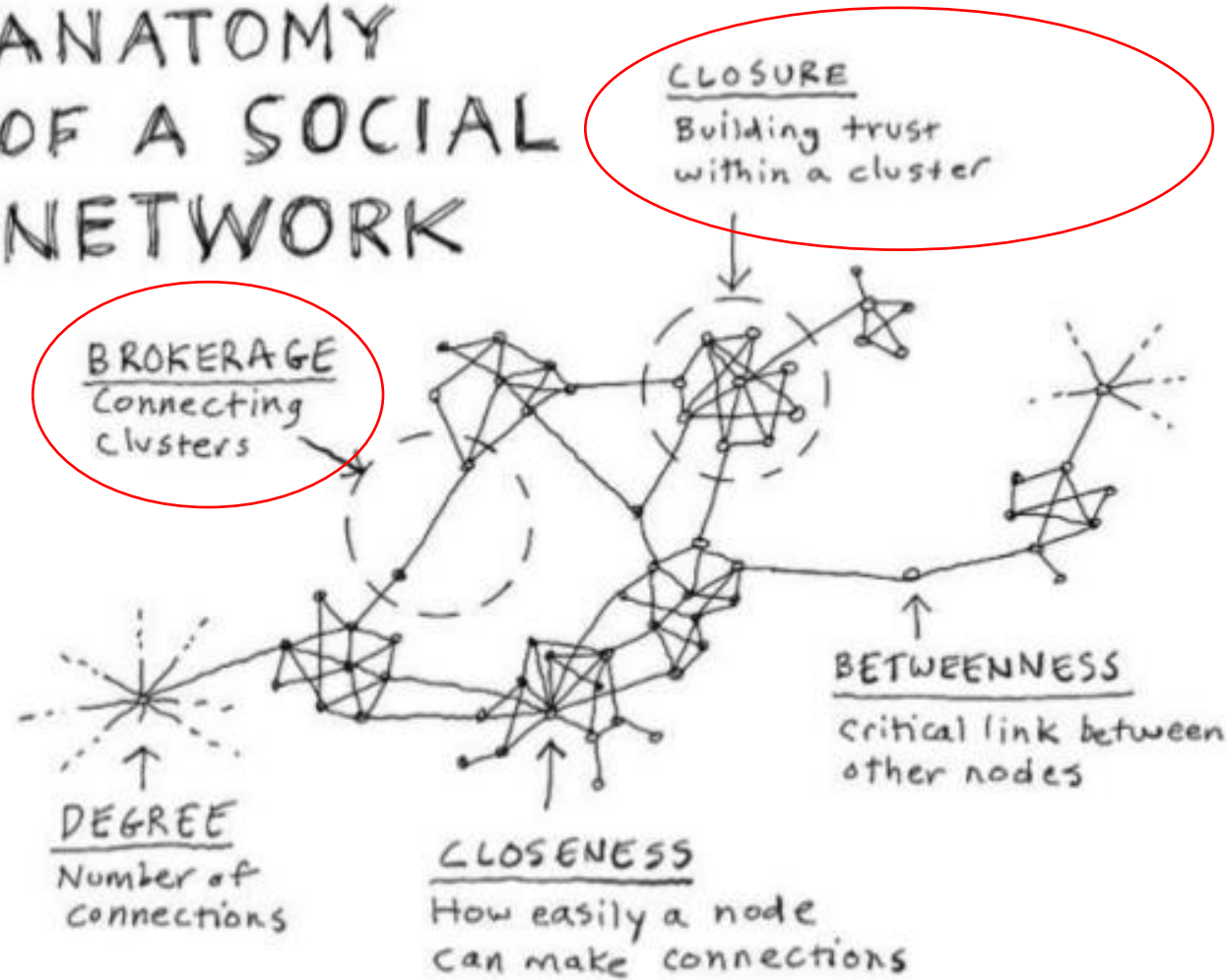


High school friendships & race (Moody, 2001)



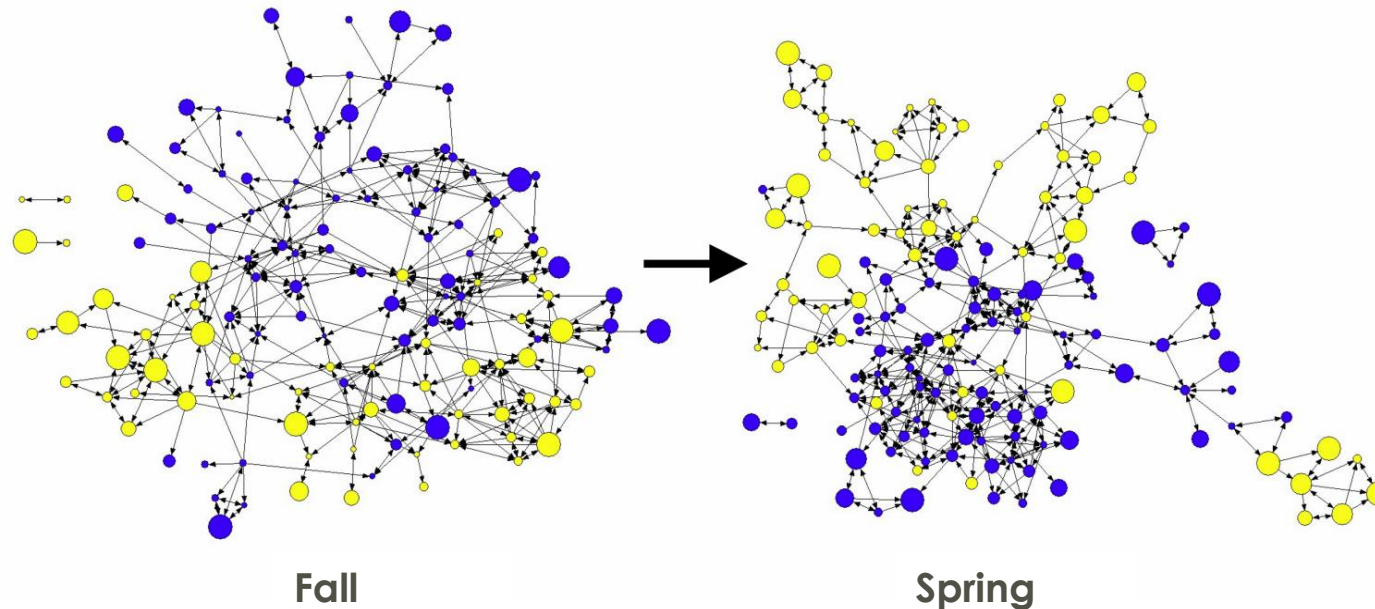
Collaboration within a community coalition (Allender et al, 2016)

ANATOMY OF A SOCIAL NETWORK



Obesity & social networks: an interdependent system

- people with obesity cluster together in child & adult social networks
- having a social connection with obesity increases future obesity risk



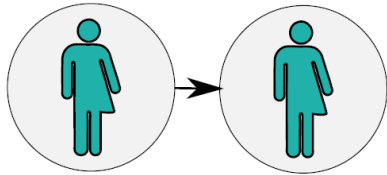
156 adolescents
Ties: Best friend nominations
Node color: gender
Node size: BMI

Obesity & social networks: an interdependent system

- people '**select**' **social ties** with similar health risks (Centola 2011; de la Haye 2011; Schaefer et al. 2015; Valente 2009)

Obesity & social networks: an interdependent system

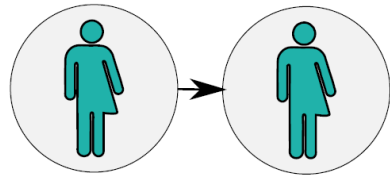
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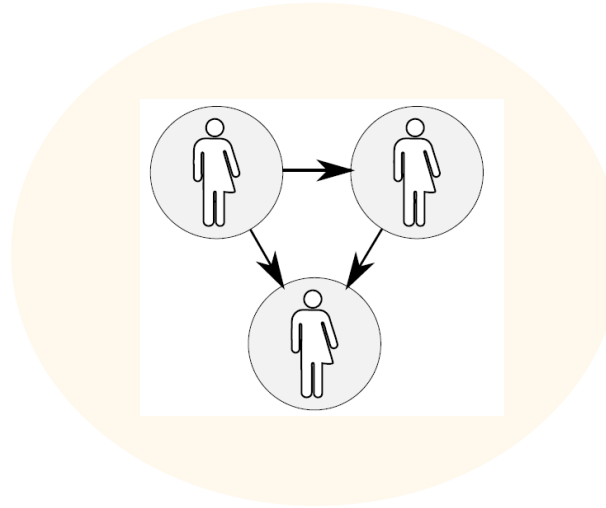
homophily

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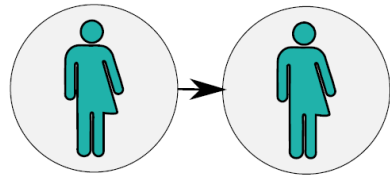
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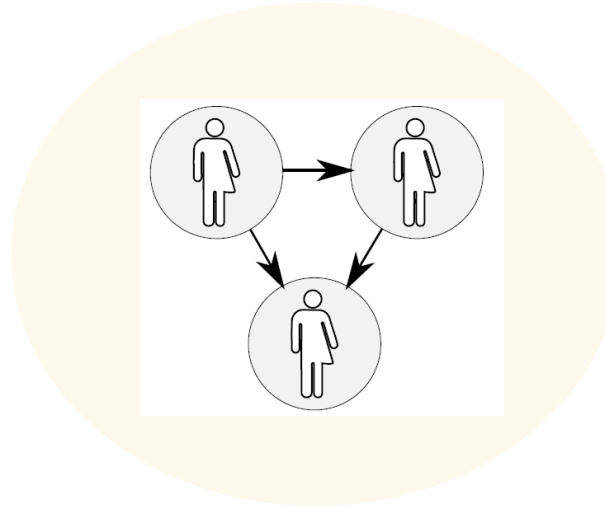
propinquity

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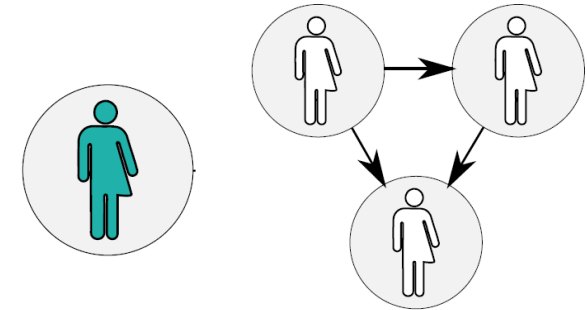
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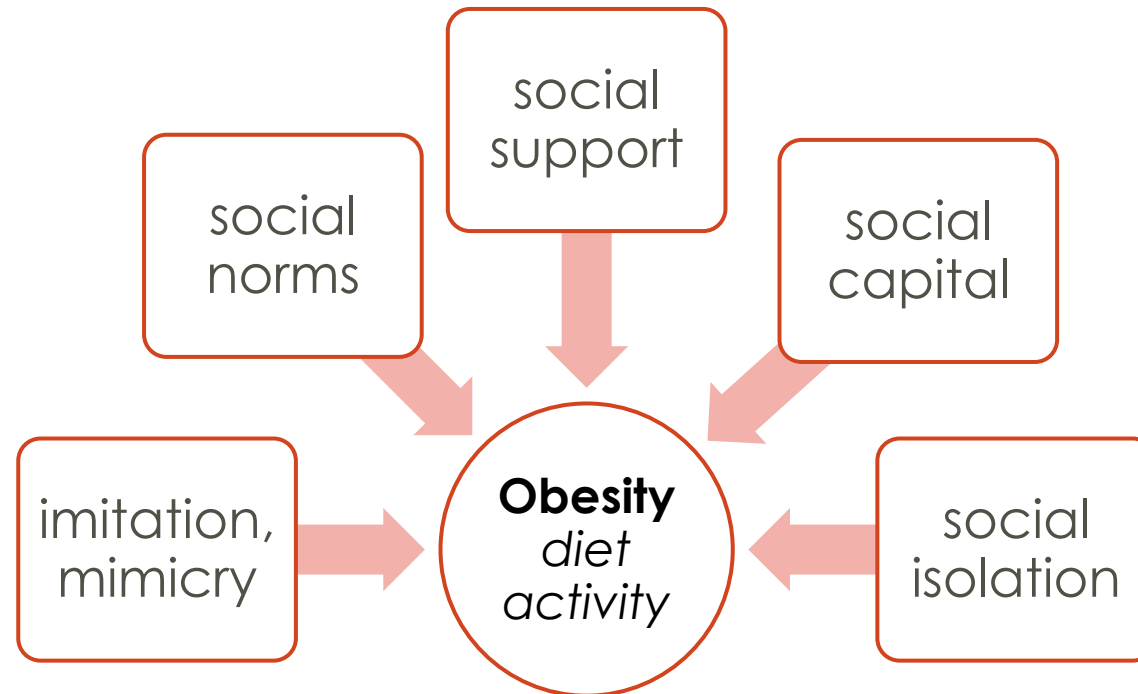
propinquity



stigma

Obesity & social networks: an interdependent system

- people '**select**' **social ties** with similar health risks (Centola 2011; de la Haye 2011; Schaefer et al. 2015; Valente 2009)
- social ties **influence** lifestyle behaviors [eating, activity] and obesity (Aral & Nicolaides, 2017; de la Haye 2011; Hammond 2012; Simpkins 2011; Trogden 2008; Valente 2009; Zhang, de la Haye et al, 2018)



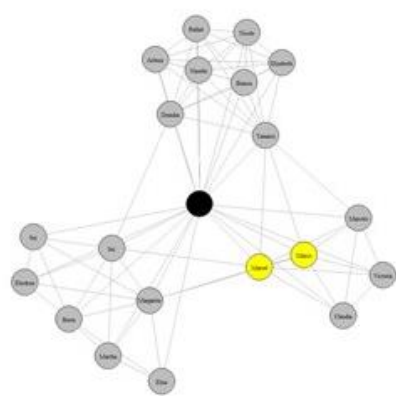
Diet & the personal networks of Mexican American adults

- more health support predicts better diet quality, especially for people with food insecurity

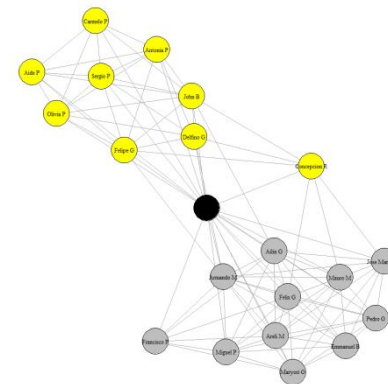
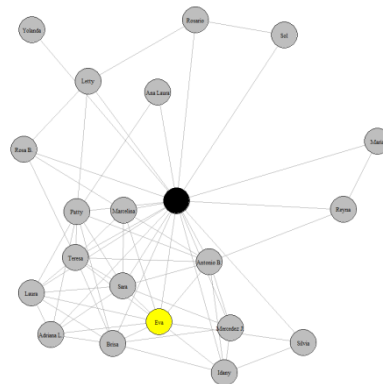
● respondent (ego)

● social contact

● social contact that provides health support



low health support

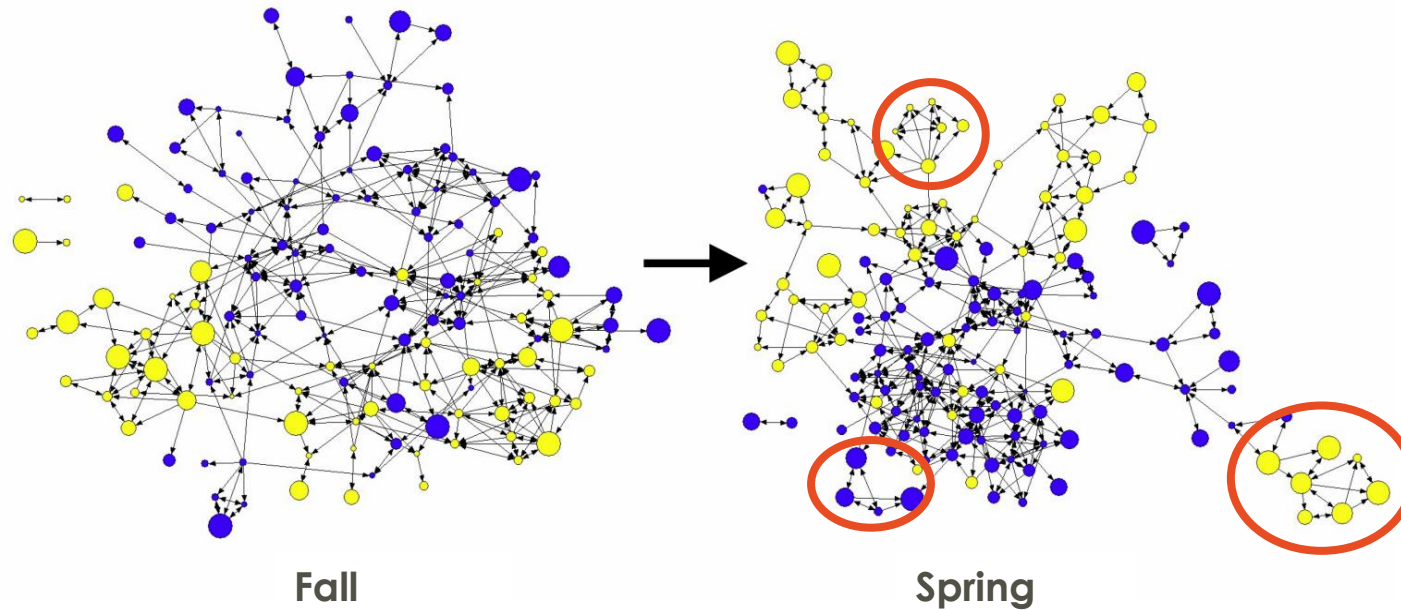


high health support



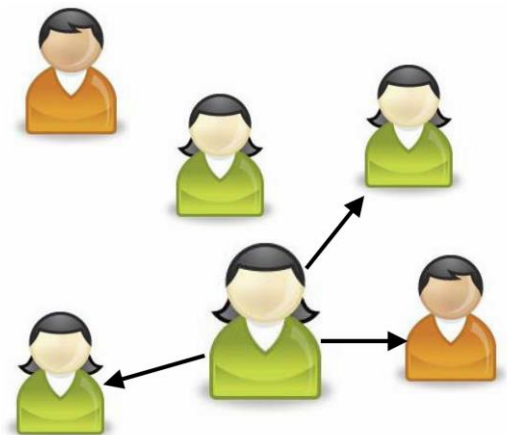
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local network *dynamics*

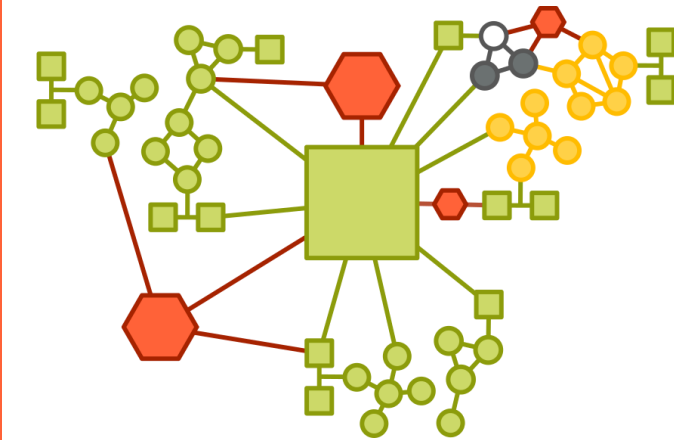


social
network

health

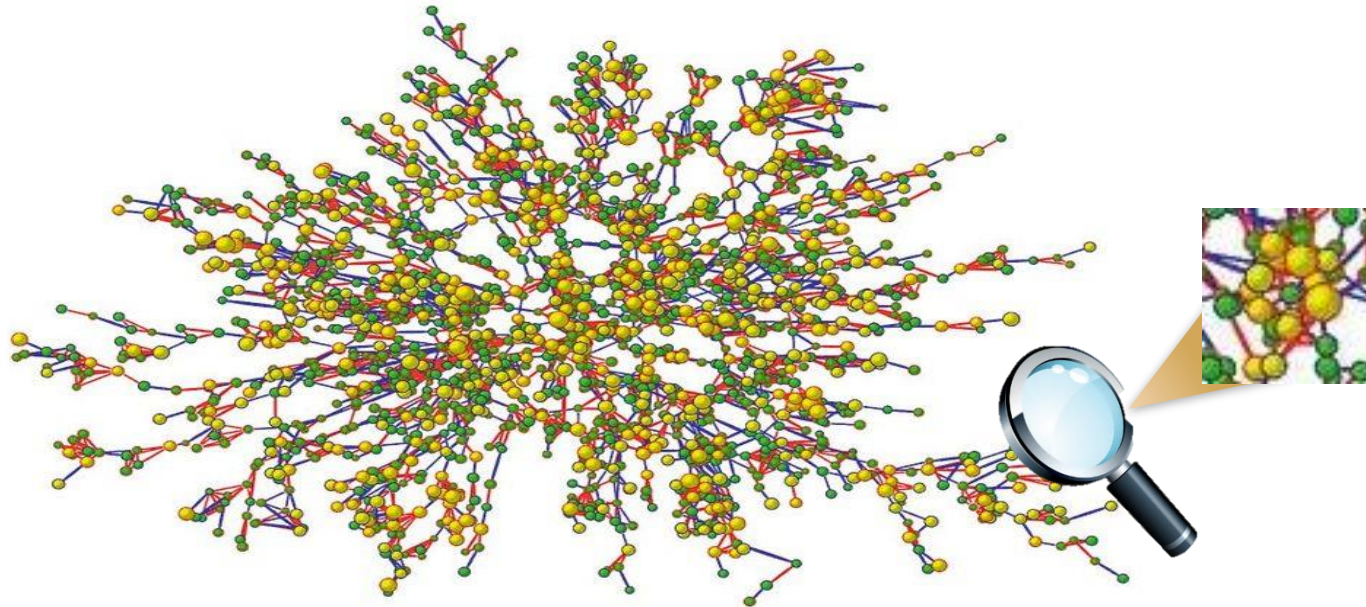


***leveraging local &
global social networks***
for obesity solutions

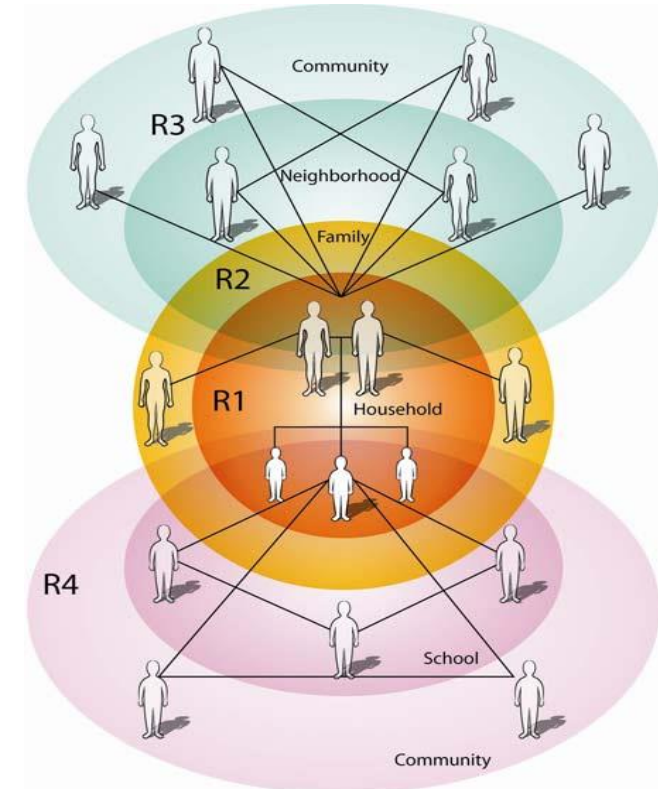


Segmentation: target at-risk social groups

- peer and family-based interventions for group-level change
- promote positive social influence, norms, and support



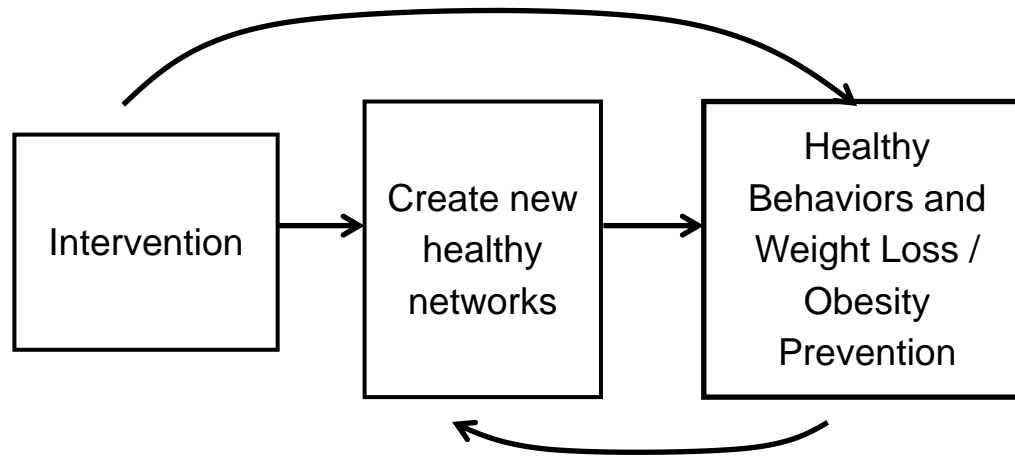
Christakis and Fowler, 2007



Koehly & Loscalzo, 2009

Alteration: Promote “healthy” social selection

- build adjacent social networks that support a healthy weight
- increase access to positive social influence, norms, and support

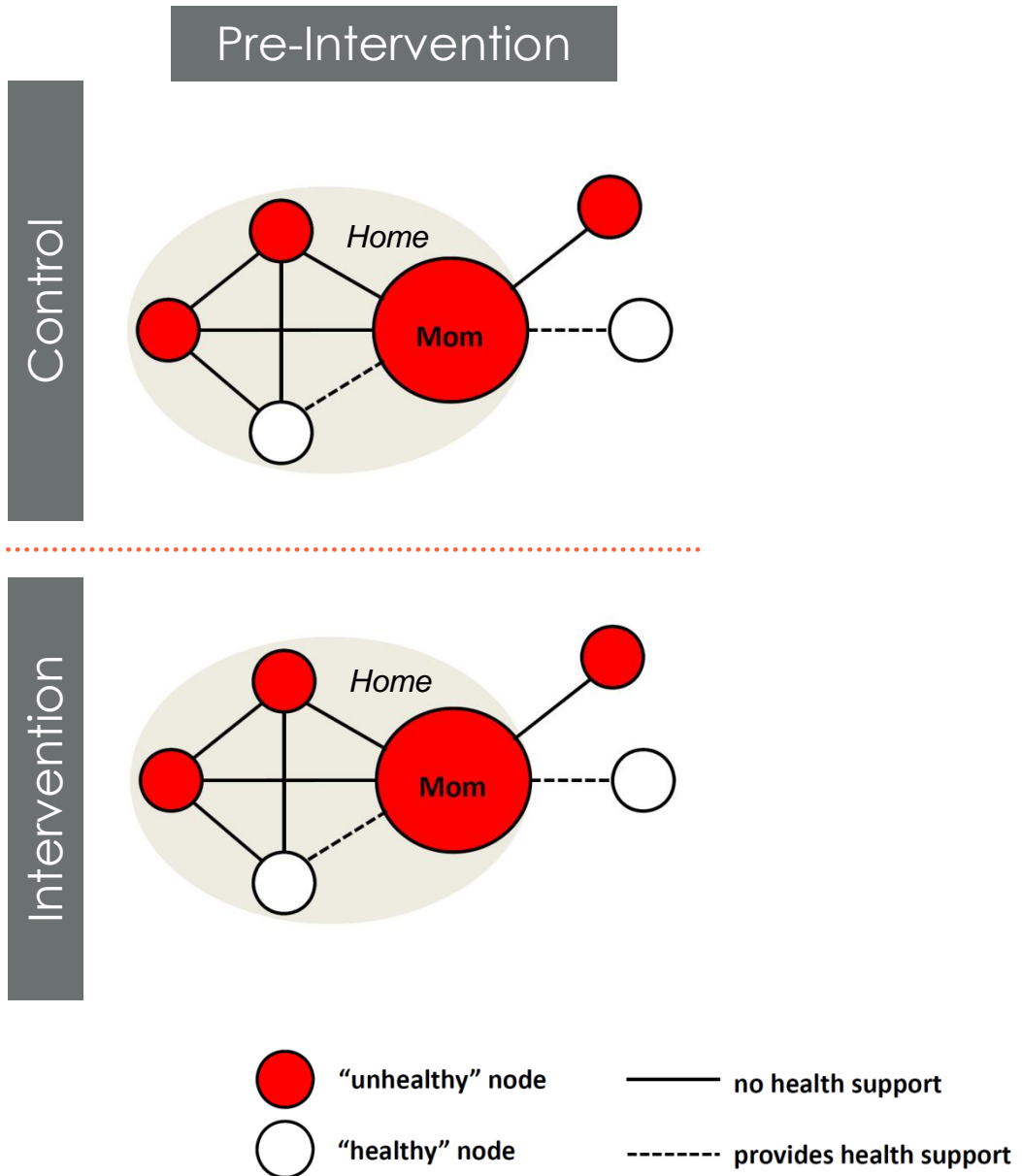




Healthy Home, Healthy Habits study aims:

- **healthy habits** and weight for low-income mothers & infants
- change in **home environment**
- change in **mothers' social networks**

networks & interventions

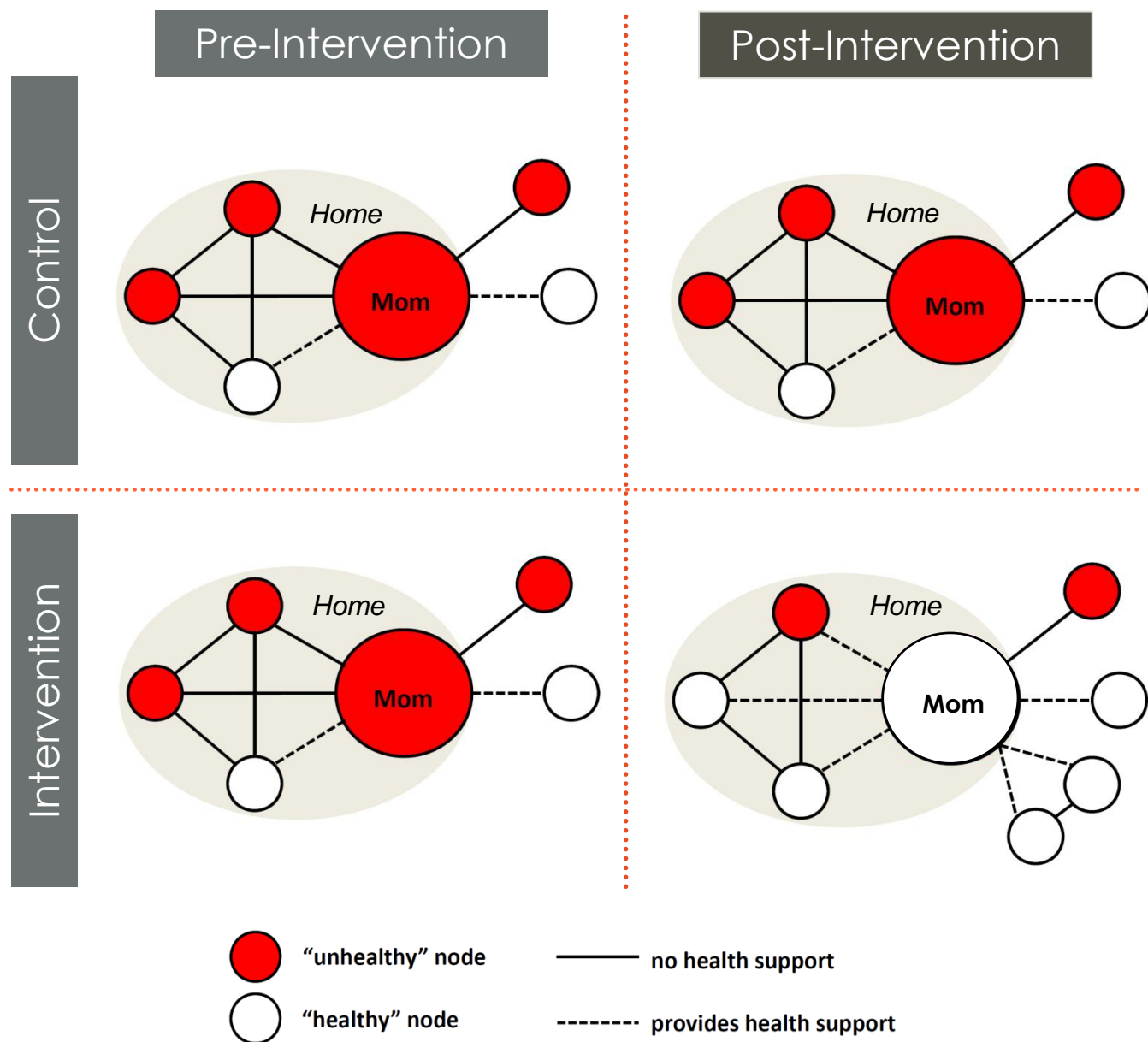




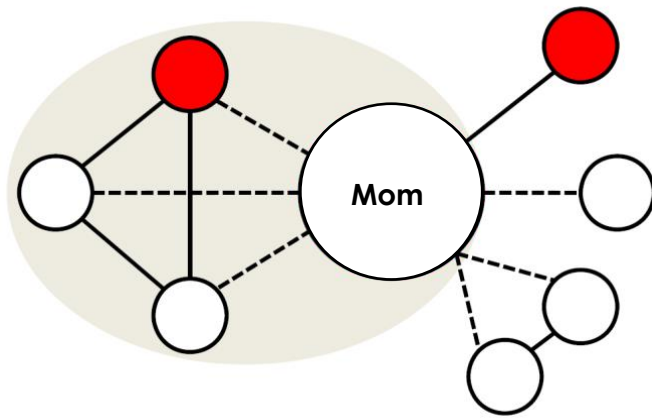
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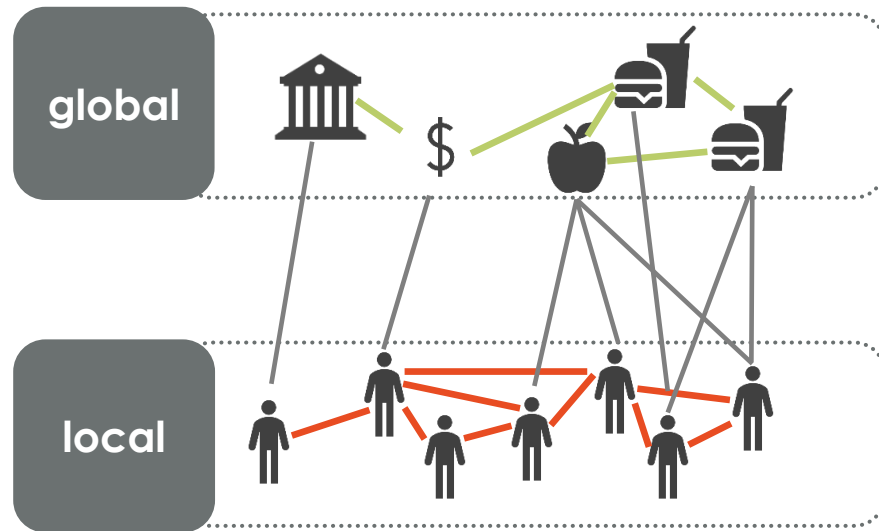
networks & interventions



Increase **social cues** and **social support** for healthy habits across home and community settings.

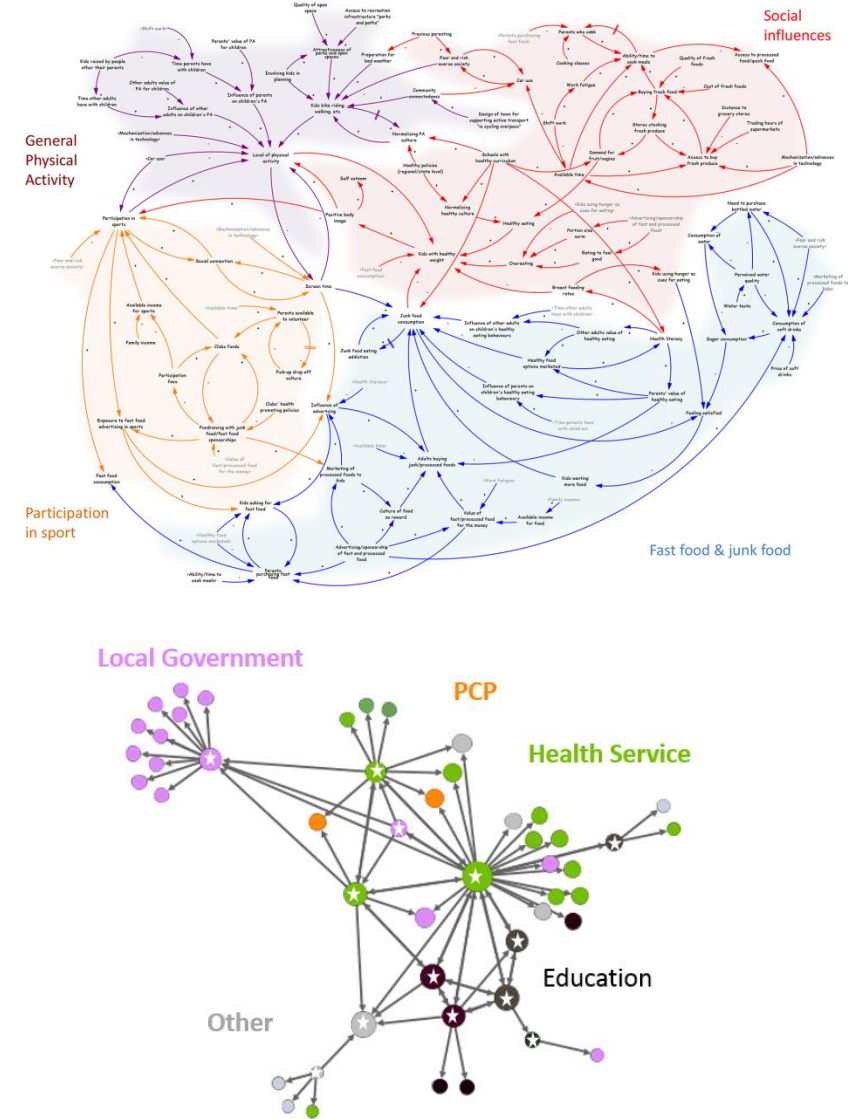
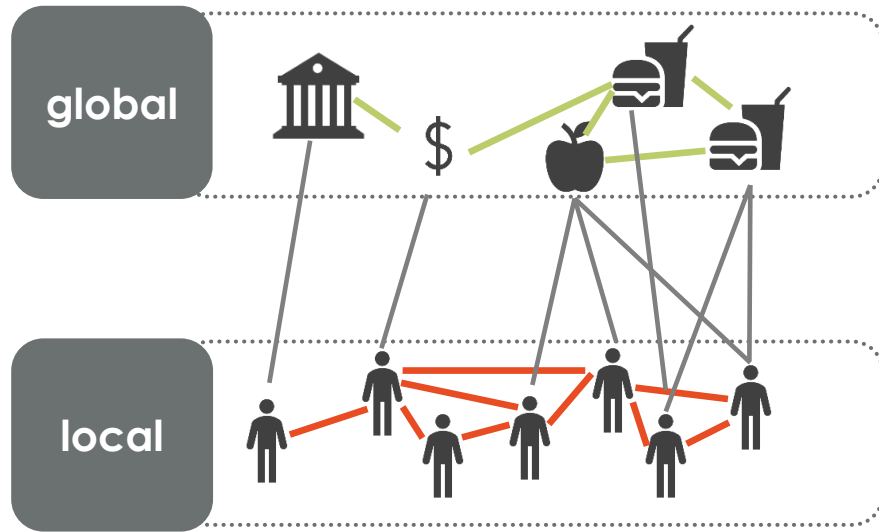


- Leveraging social networks to impact environments, policy, and systems

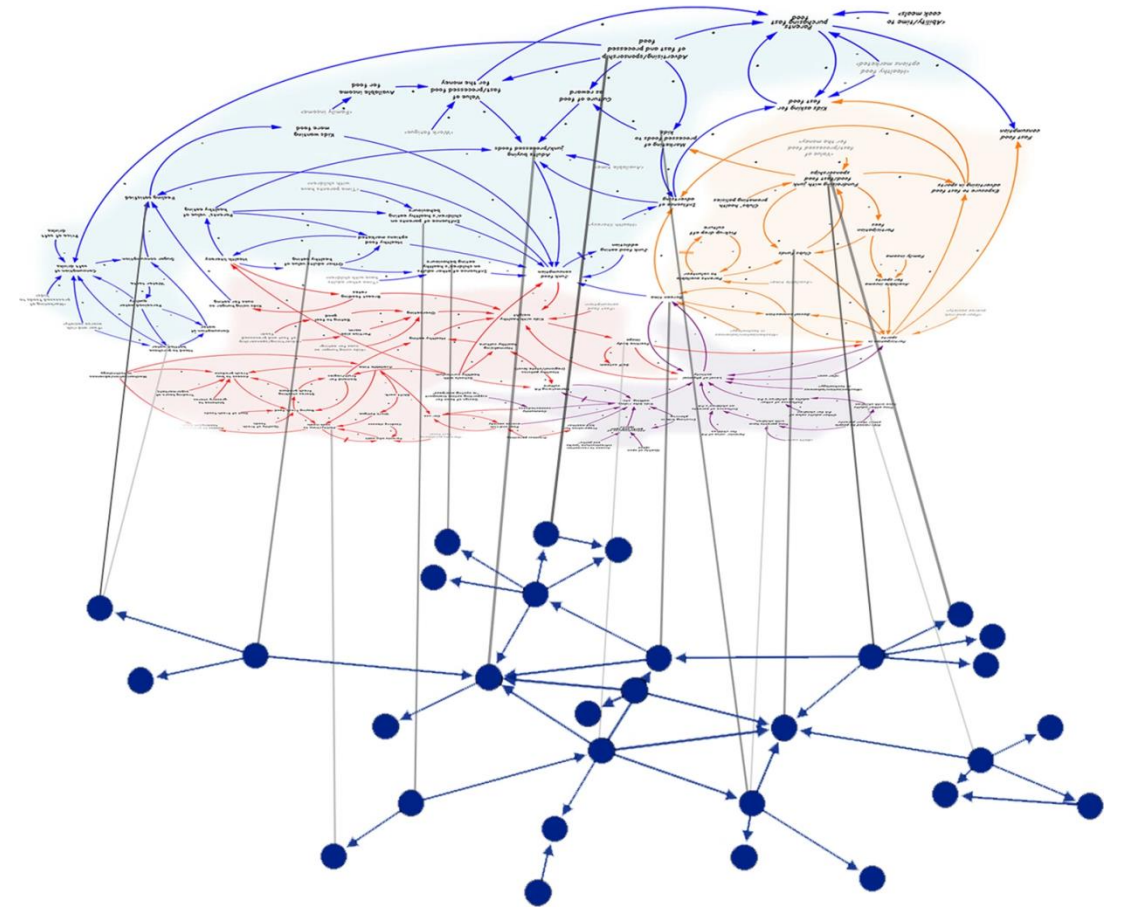
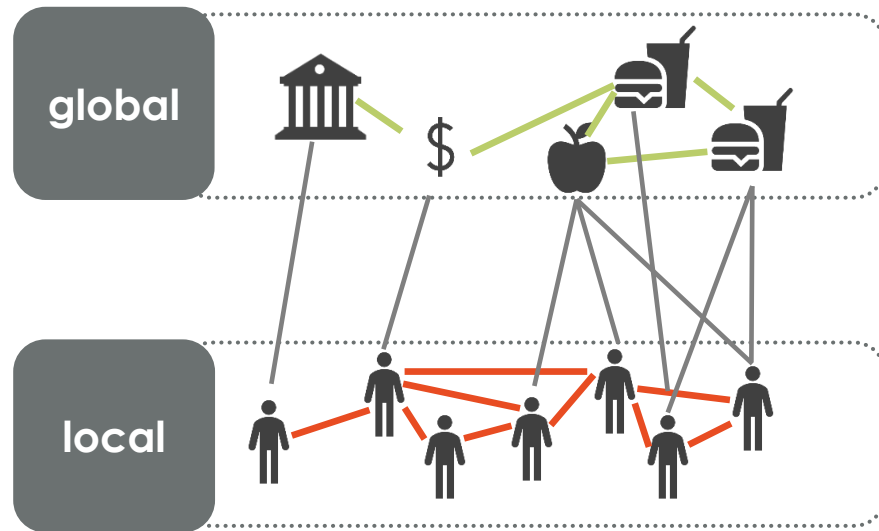


global networks & interventions

- Leveraging social networks to impact environments, policy, and systems



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monitoring complex social systems



COMMUNITY
PARTNERS



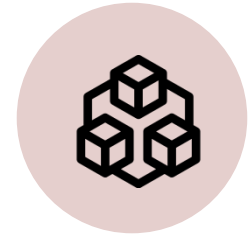
SURVEY &
INTERVIEW DATA



SMARTPHONE
DATA



SOCIAL MEDIA
DATA



SECONDARY
DATA

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Thank you.