

kayla de la haye

challenges & opportunities for precision & personalized nutrition

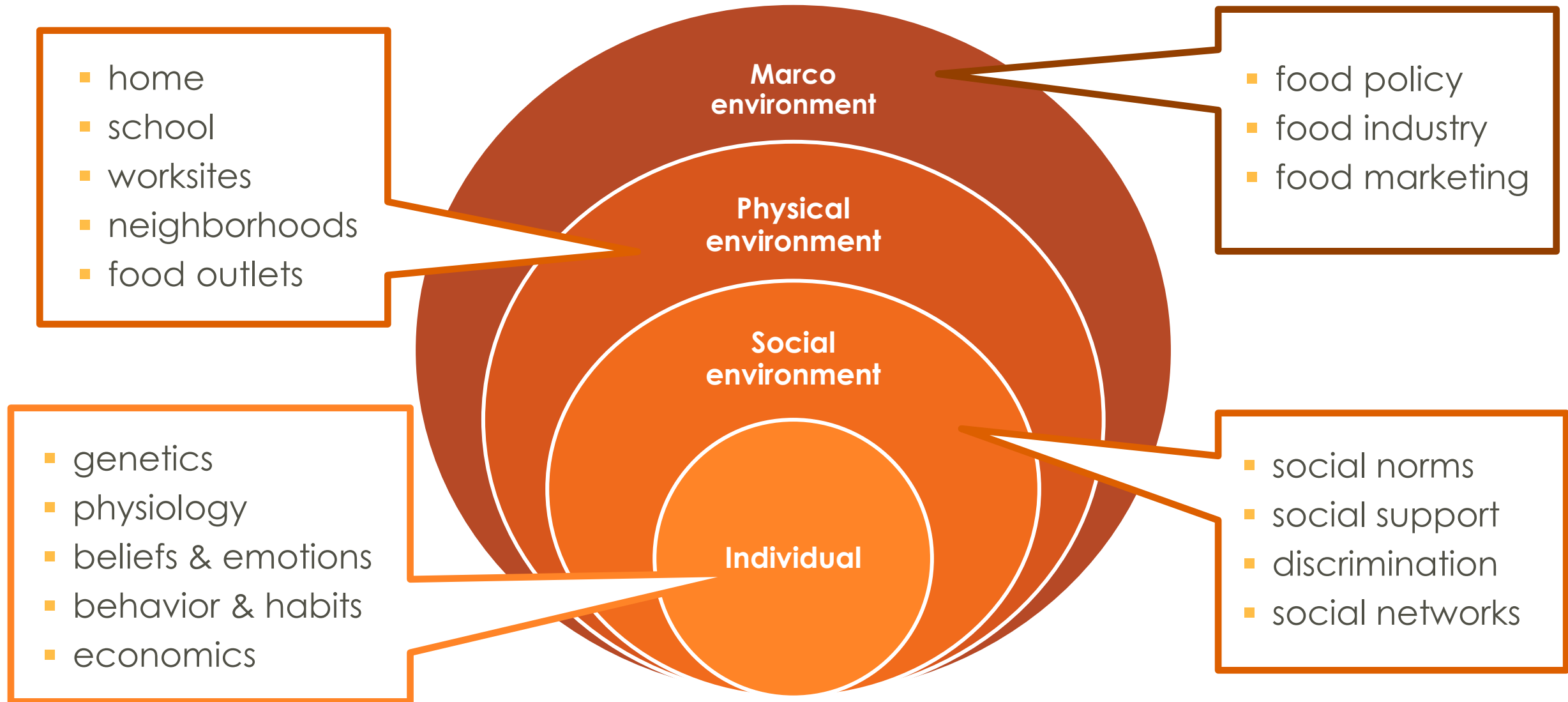
august 11 2021

social-ecological settings in
which people access &
consume food

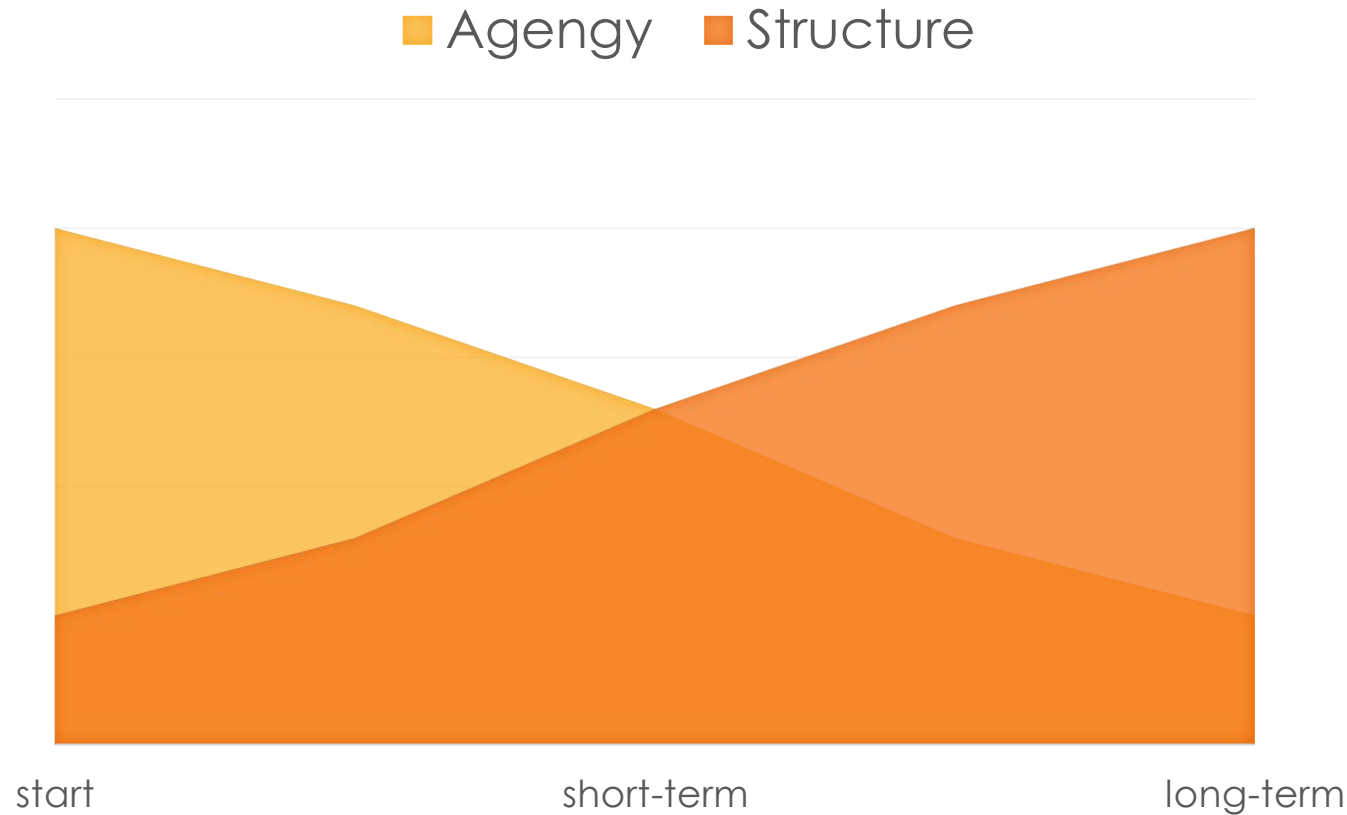


No conflicts to disclose

eating is shaped by ecological factors



*dietary change depends on **agency & structure***



short-term change: individual agency & choice

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

social environments

Eating is a **social practice**.¹

“...social rules and resources enable or constrain food choices...”



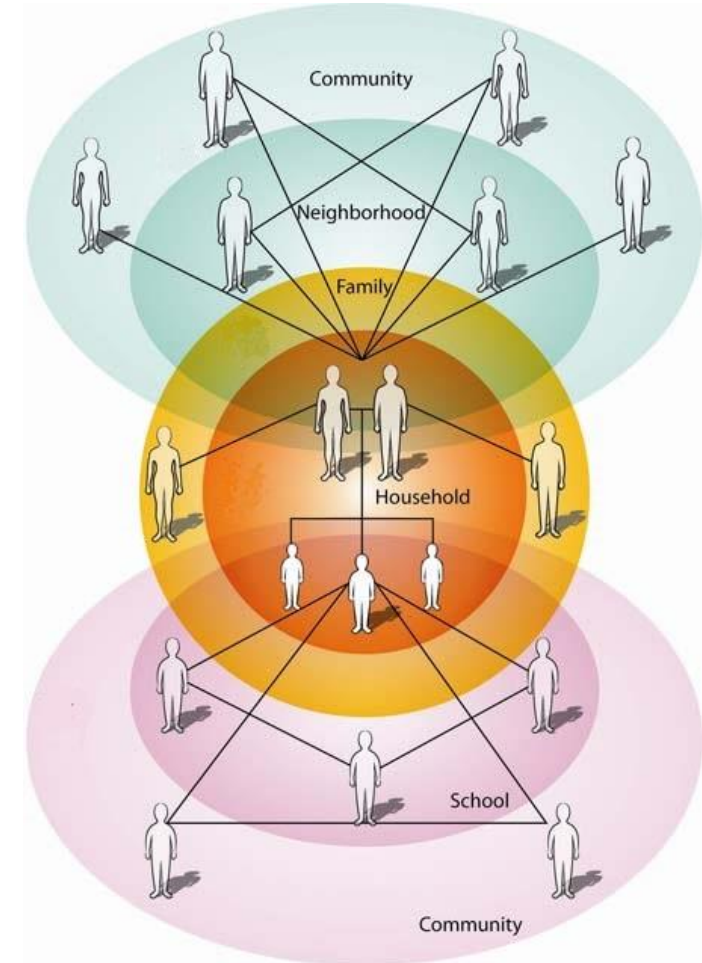
Health Matters. *Obesity and the food environment.*

¹ Delormier, Frohlich, Potvin (2009). Food and eating as social practice – understanding eating patterns as social phenomena and implications for public health. *Sociology of Health & Illness*, 31, 215-228.

who we eat with

We eat in **diverse settings**,
with **diverse eating partners**.

- more food away from home
- fewer family meals
- varied people we eat with in our social networks

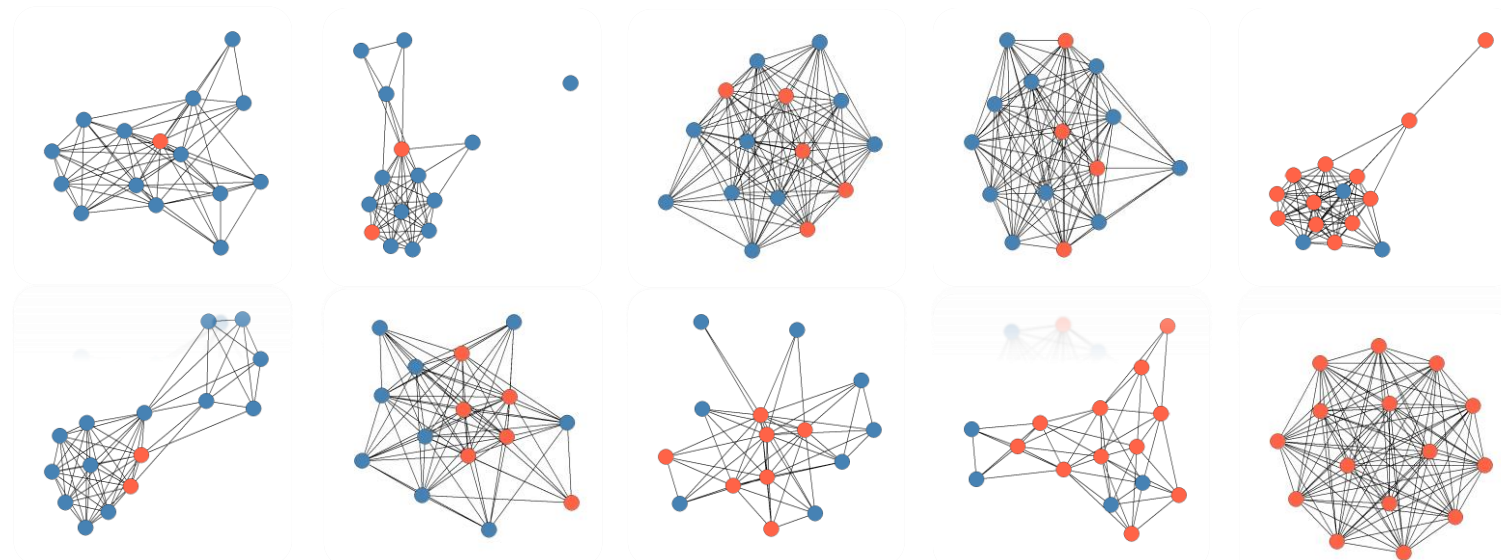


Koehly & Loscalzo, 2009

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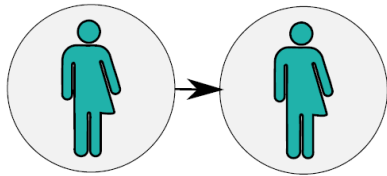
≈ **25% of egonet**

- nuclear family
- extended family
- friends and others

- eat with
- don't eat with

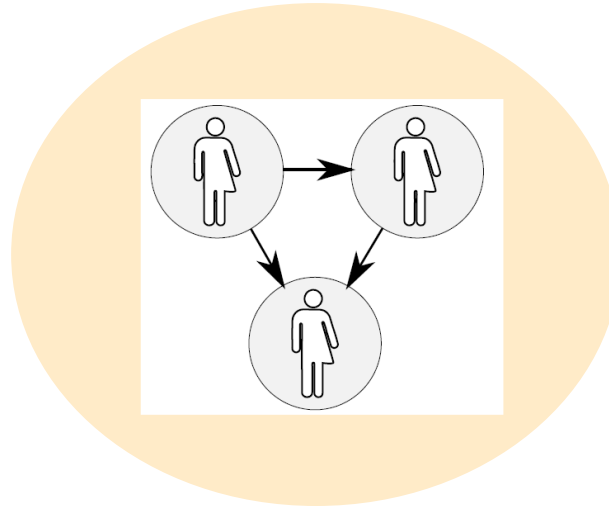
Nutritional health & networks: an **interdependent** system

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



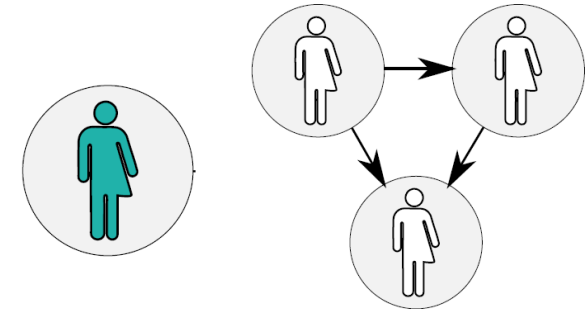
homophily

we connect with similar others



propinquity

we connect with people who are geographically close

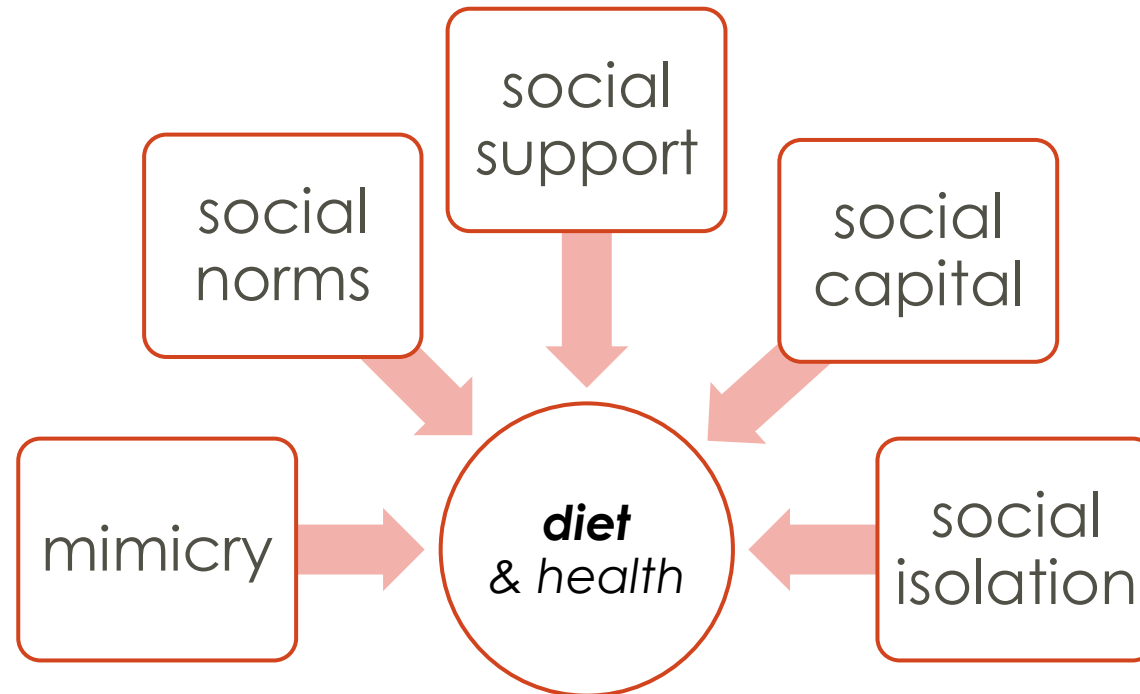


stigma

we exclude groups of people based on stigmatized traits

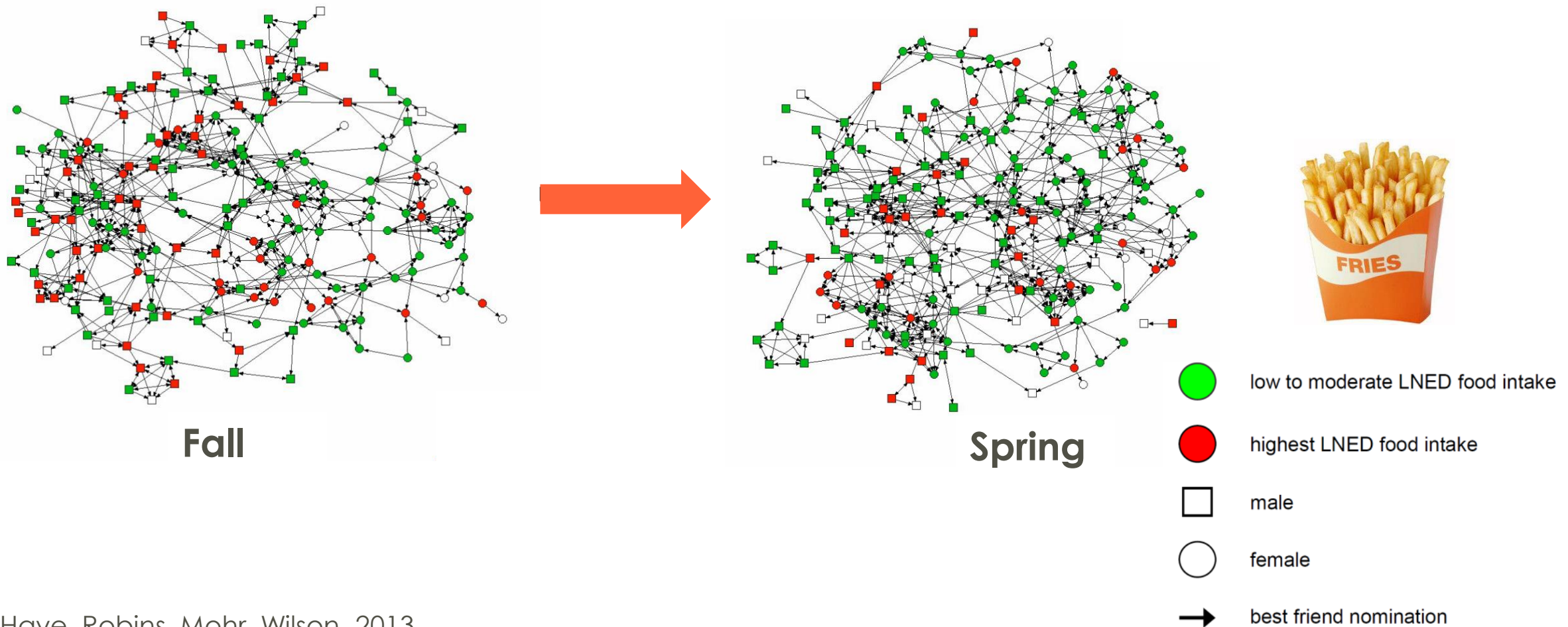
Nutritional health & networks: an interdependent system

- 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] and related disease (Aral & Nicolaides, 2017; de la Haye 2011; Hammond 2012; Simpkins 2011; Trogden 2008; Valente 2009; Zhang, de la Haye et al, 2018)

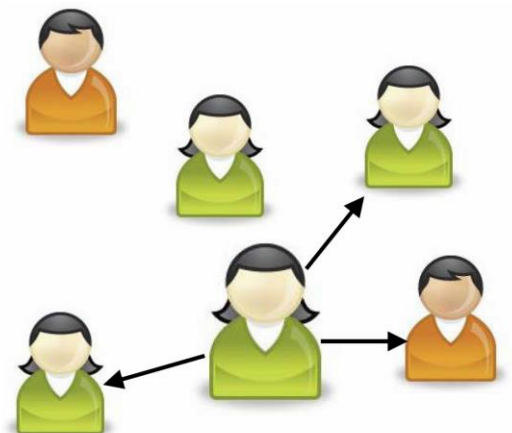


social network influences

Among adolescents, peer networks influence intake of low-nutrient energy-dense foods



social network *dynamics*



social
network



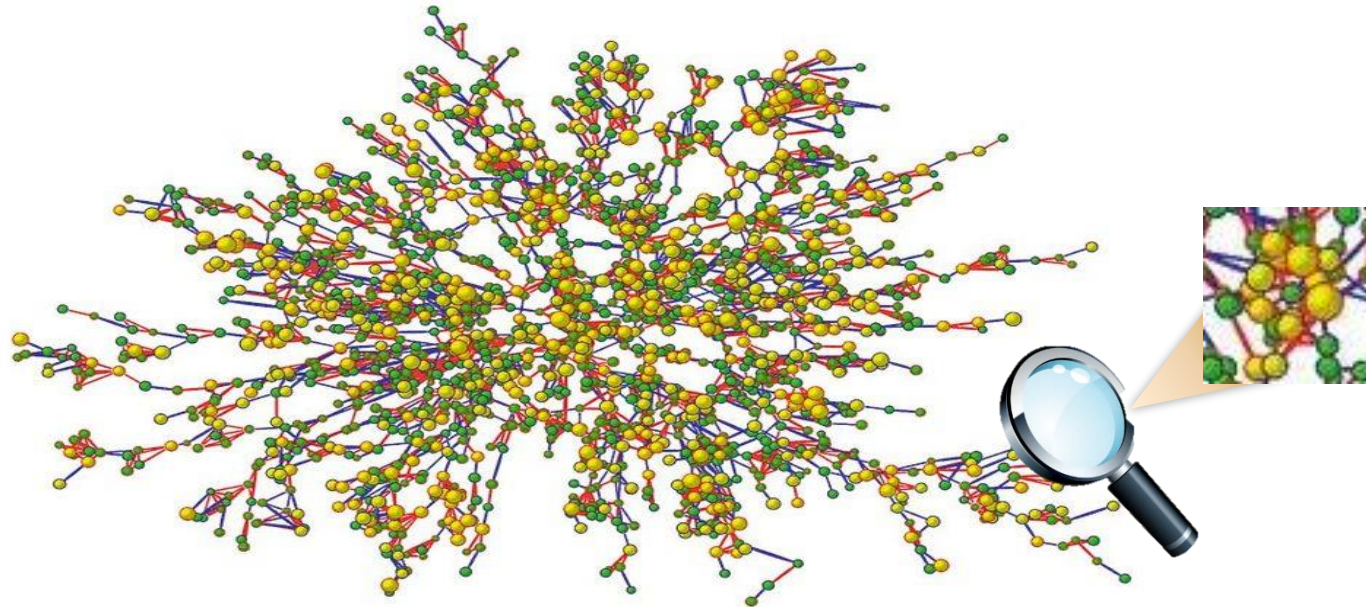
dietary
health



social network *interventions*

Segmentation: target at-risk social groups

- **Example:** peer and family-based interventions for group-level change

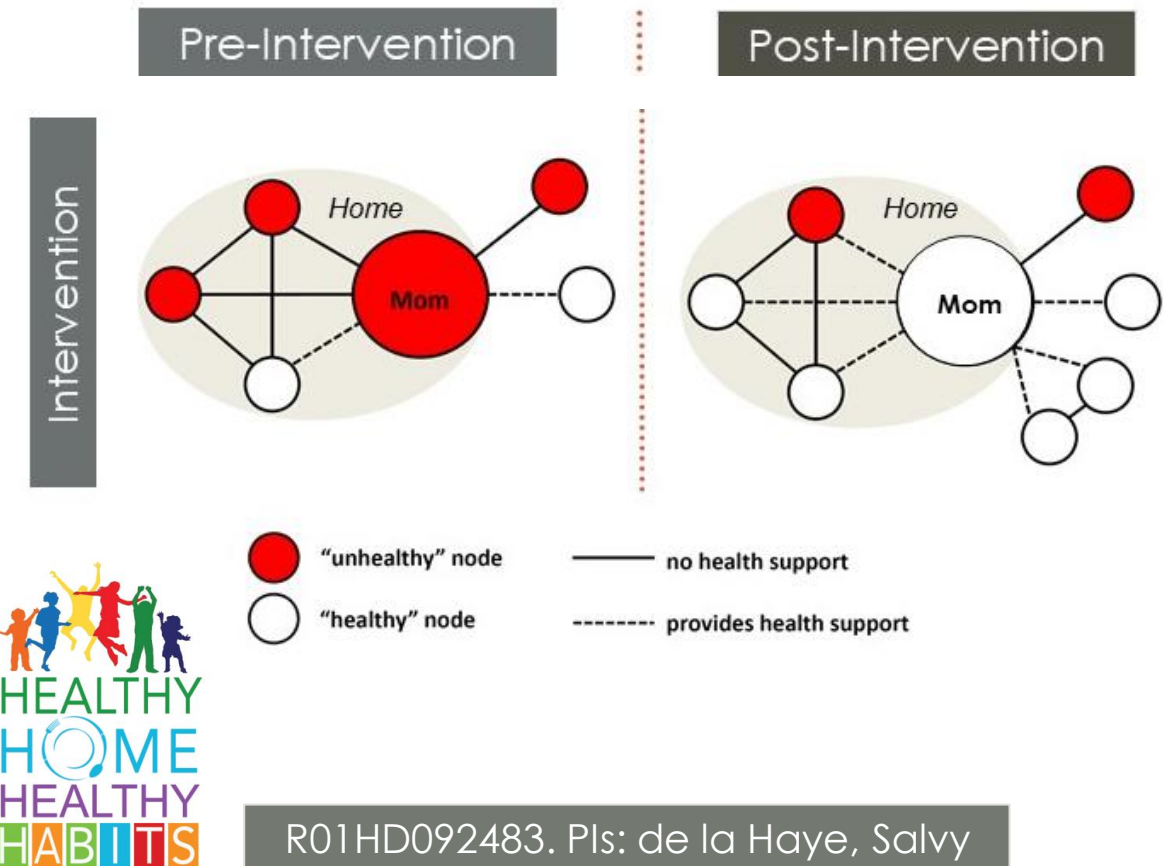
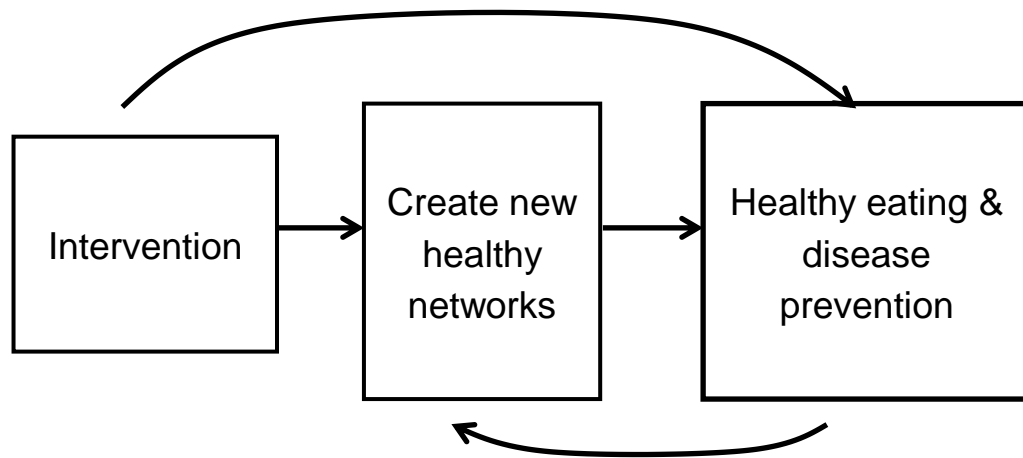


Christakis and Fowler, 2007

social network *interventions*

Alteration: Promote “healthy” social selection

- Example: build adjacent social networks that support healthy eating

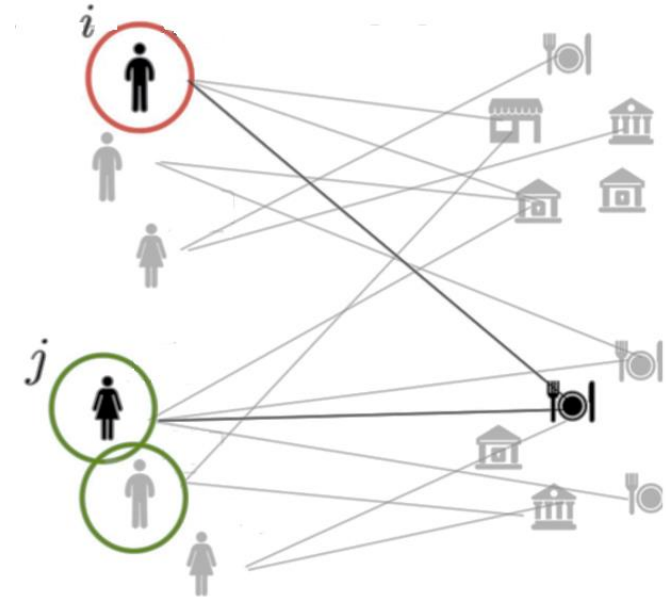
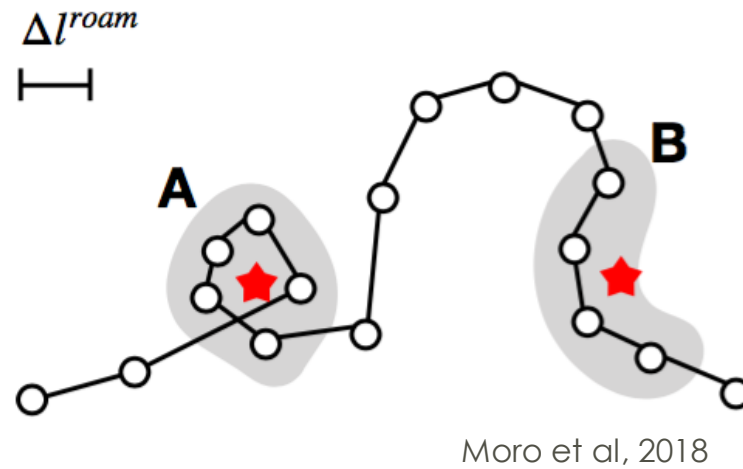


food & eating *environments*



Grid Magazine, 2009

food & eating environments

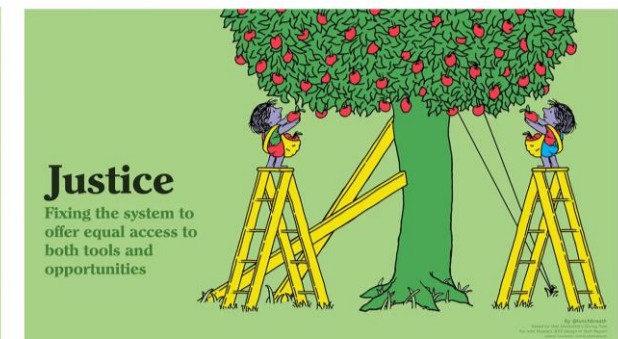
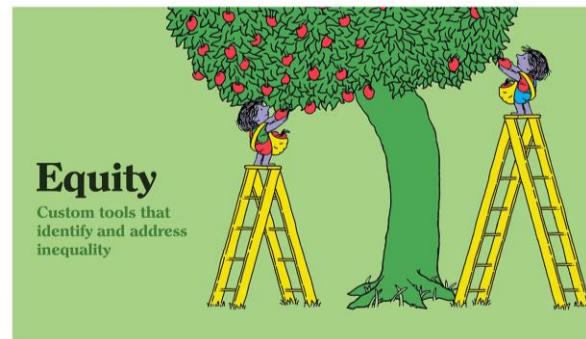
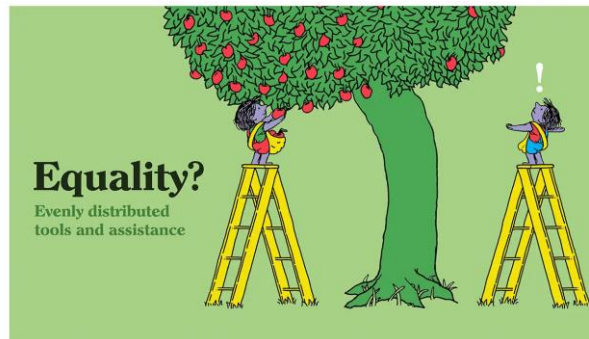
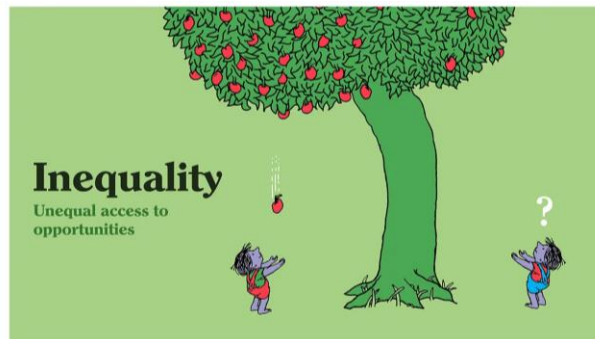


- big data from mobility traces
- patterns of exposure to **mobile food environments** & **visits to food outlets**

precision & personalized nutrition *for all*

Opportunities

- Use innovations in data, data science, & behavioral/social science to gain more ***precise insights into the social-ecological mechanisms*** that influence diet & nutrition
- Develop precision nutrition knowledge & interventions that will be ***effective, actionable, and equitable***



Tony Ruth, 2019

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Thank you.