

Applying theory underlying social networks to KT

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Long history of social science theory related to social networks

- Both sociology and anthropology have histories— somewhat different
- Date back to early part of 20th century
- Hawthorne wiring room studies in the Western Electric Company in Chicago— 1920s
- Very difficult to do anything other than quite small scale social network studies until computing power became widely available
 - Exponential growth between 1965 and 2005
 - “Took off” ~1975 when mainframes became widely available
 - Another rate increase in ~1990 when PCs became widely available

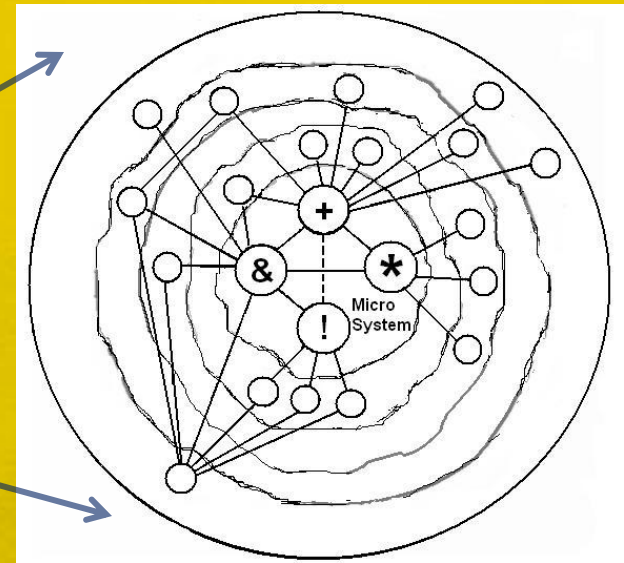
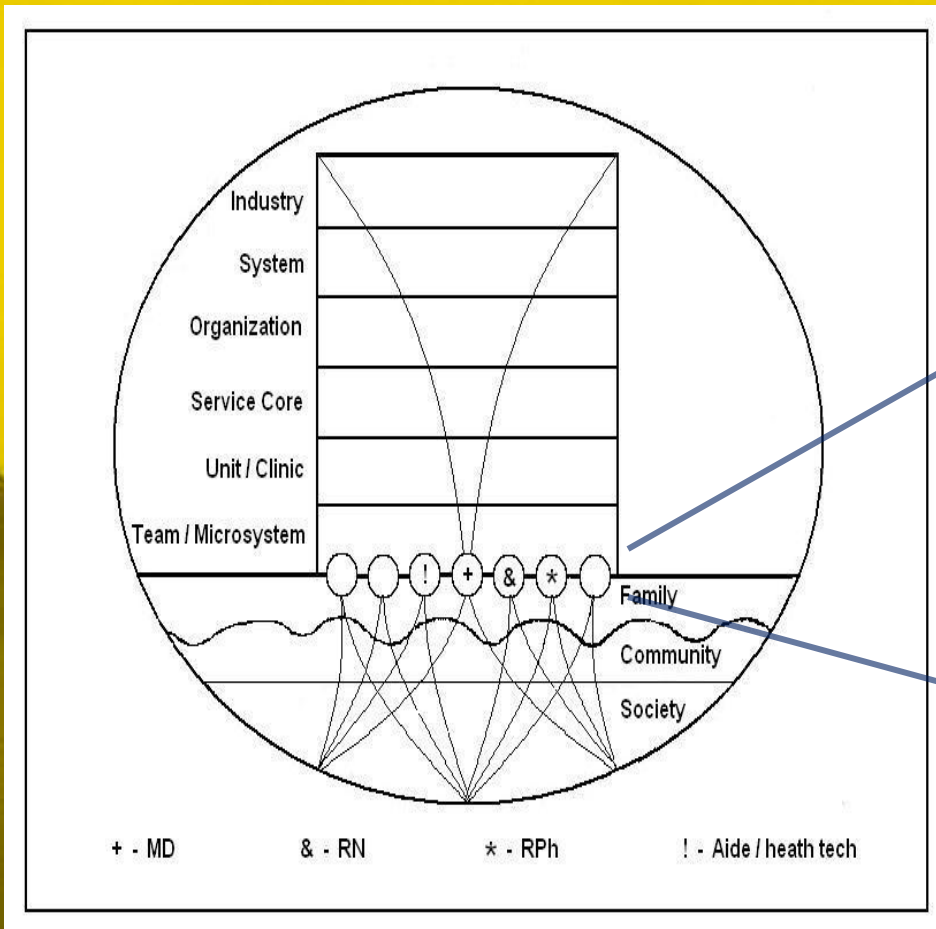
Graphs, analytic methods, and theory

- A lot of social network analysis is graphic
 - Visualization is very powerful
- But analytic techniques have been increasing steadily over the last couple of decades
 - Highly sophisticated methods that are quite analogous to advances in individual statistical analytic techniques
 - Methods to blend the different units of analysis are increasing in sophistication
- Also large body of theory related to social networks and their analysis

Theories

- Wide variety of theories related to social networks (many are inter-related)
 - Social exchange
 - Issues of balance and symmetry
 - Embeddedness
 - Power dynamics
 - Intra and inter organizational theories
 - Dependencies

How this may apply in health care KT



One fundamental question:

- Does social structure or social network affect knowledge utilization/uptake/adoption of innovation?

Assuming the answer is probably yes:

- How?
- Under what circumstances?
- How much?
- Is it modifiable?

Application (to date) to knowledge utilization/innovation

■ Opinion leader interventions

- Typically identify opinion leader (OL) through surveys of participants in a given group

- Boundaries of the group are rarely clearly defined

■ Surveys (usually) ask

- Please name up to three individuals whom you would go to for information about.../whose opinion you would value about.../whom you would regard as an expert in...

■ Once identified, the interventions vary

- Most use some form of education– letters, in-services, one-on-one sessions...

■ Outcomes have been mixed

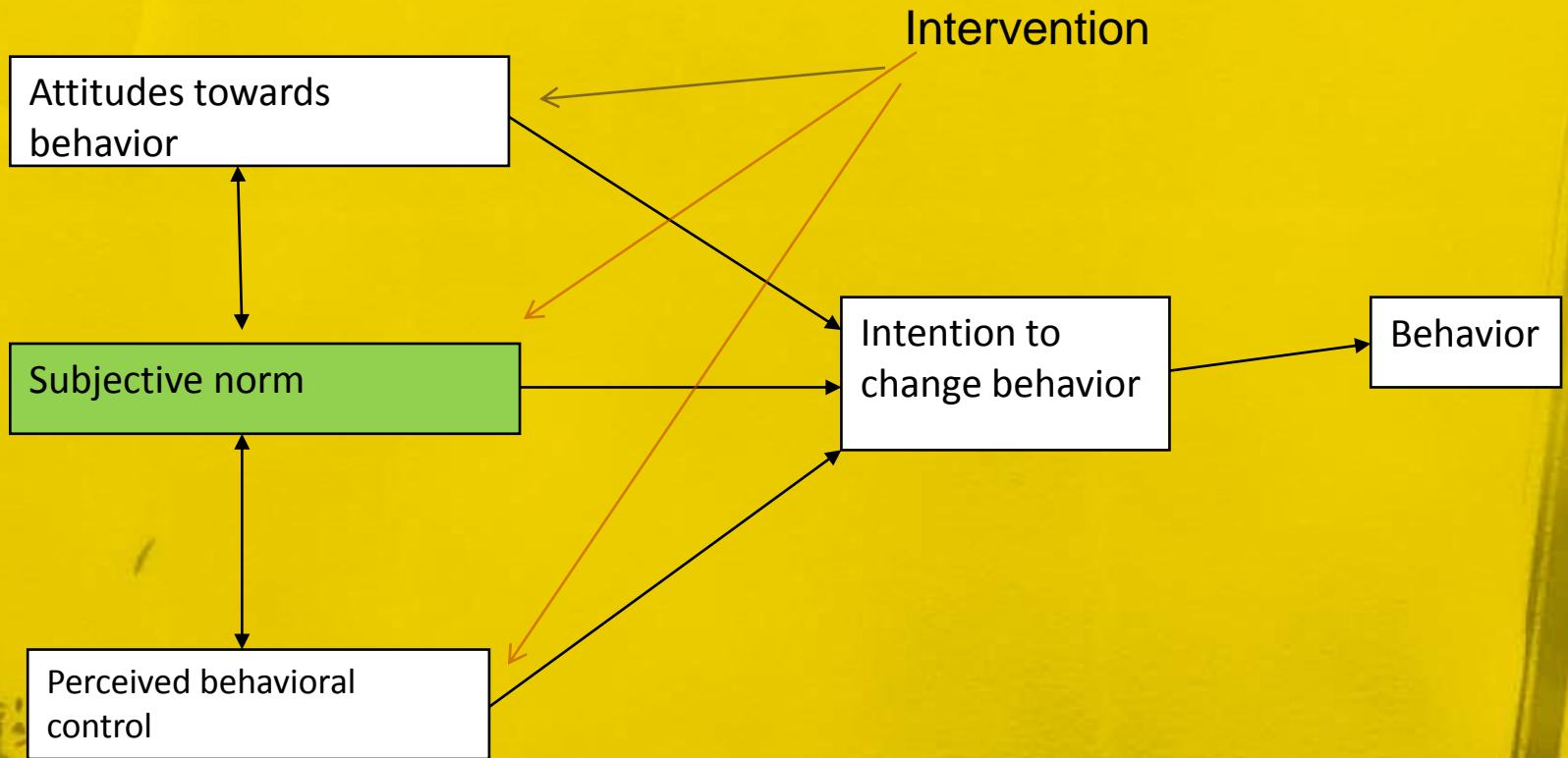
- Cochrane review 2006
 - Grimshaw et al. 2005 study across content and groups

Some critiques of OL studies from a social network perspective

- Networks are only partially described
 - Lots of missing data
 - No awareness of what might be missing
 - Non-holistic approach
 - Very subjective and lacking definition and standardization

Beyond opinion leadership

- How else might social networks affect KU/KT/diffusion?
 - Formation of social/group norms
 - Perceptions of self-efficacy
 - Perception of external factors
 - Resource dependency
 - Access to information
 - Gatekeeping, brokering, other blocking or facilitating functions

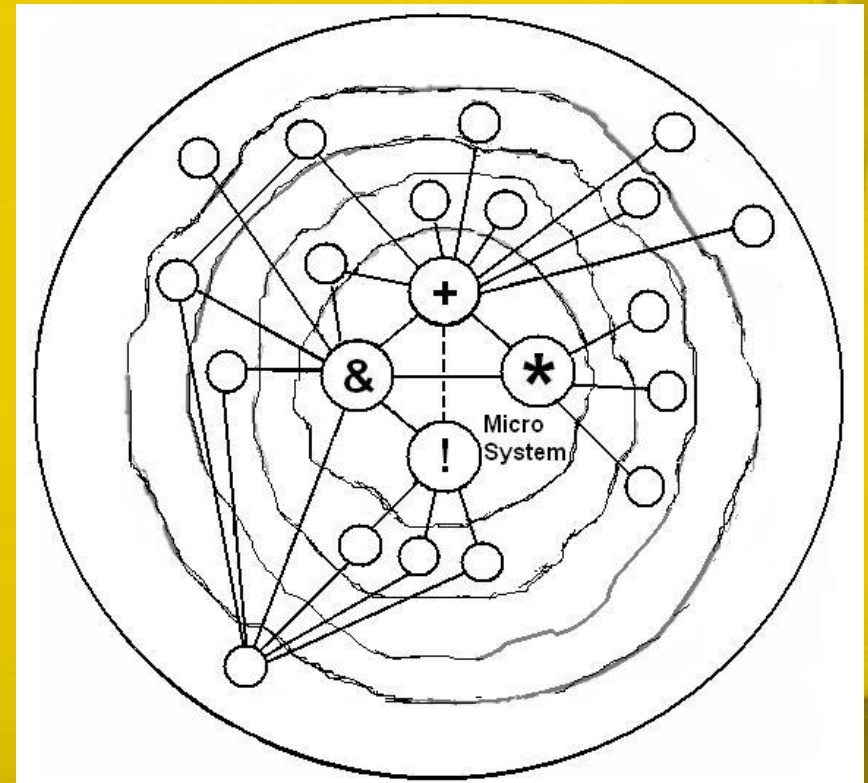


Simplified schematic theory of planned behavior

Should be arrows among all three LHS boxes, and a dotted arrow from PBC to Behavior (direct link)

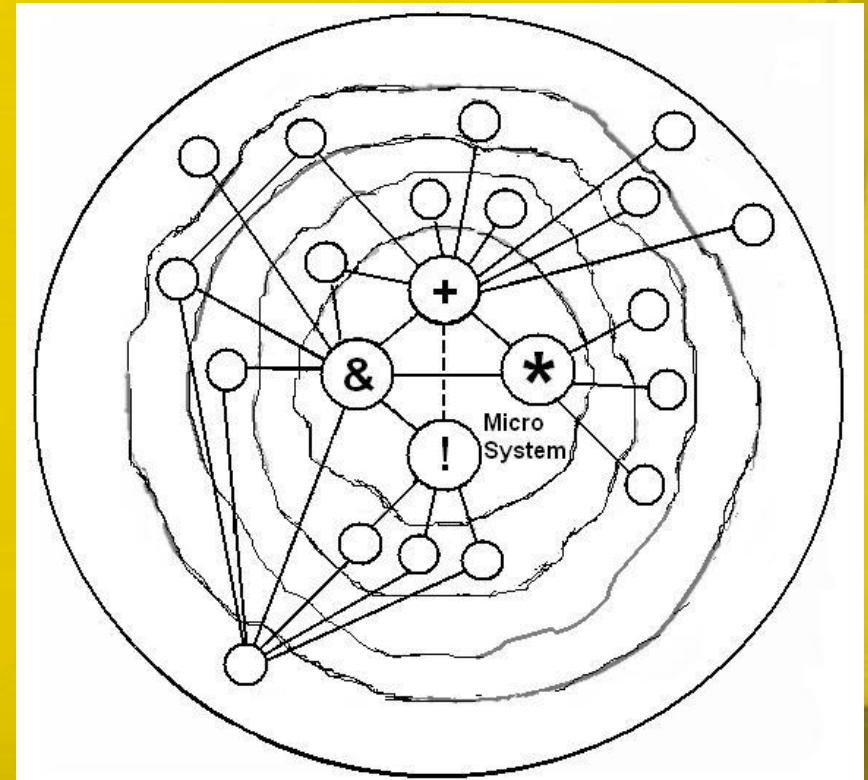
Take any intervention:

- Think about dropping it into this team/microsystem
 - Does the fact that ! and * don't connect make a difference?
 - If ! is important in his/her social network beyond that team and feels very negatively about the intervention, what difference would that make?
 - If you give the intervention to +, what would you expect to happen in the rest of the team?



And going a little further:

- Let's assume & is the most connected person within this team
 - What if s/he were given training/encouragement to strengthen ties to other team members?
 - What if an intervention to build a relationship between * and ! were undertaken?
 - Or if this whole team received training to take the intervention out to their respective groups?



Resources

- www.insna.org

- International Network for Social Network Analysis
- Interdisciplinary and international

- Multiple textbooks

- Journal *Social Networks*