Intersecting implementation science and economics

Applying theory

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Overview

- Definitions
  - Implementation science
  - Behavioral economics
- Areas of intersection and overlap?
  - Common theoretical bases
  - Additional economic theory that could benefit implementation science
- Going forward

- Disclaimer: much of what follows is caricature in the sense of over-simplifying complex concepts from a specific perspective (mine)

Prevalent definition of implementation science

- “Implementation research is the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services. It includes the study of influences on healthcare professional and organisational behaviour.”
- https://implementationscience.biomedcentral.com/articles/10.1186/1748-5908-1-1, Eccles and Mittman 2006

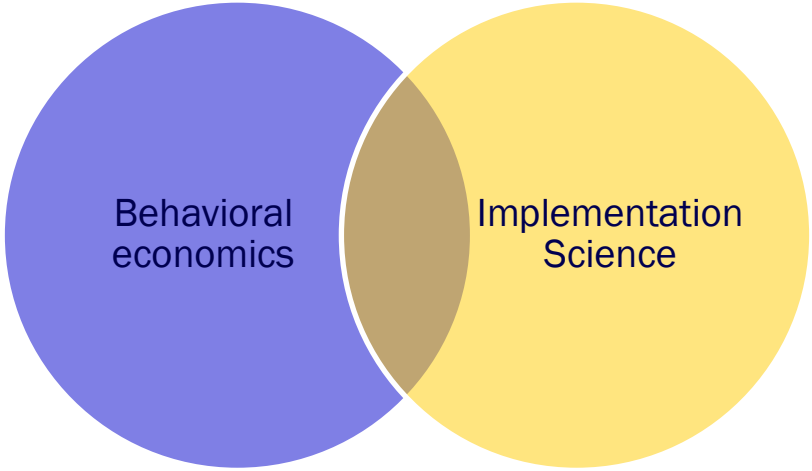
More on definitions

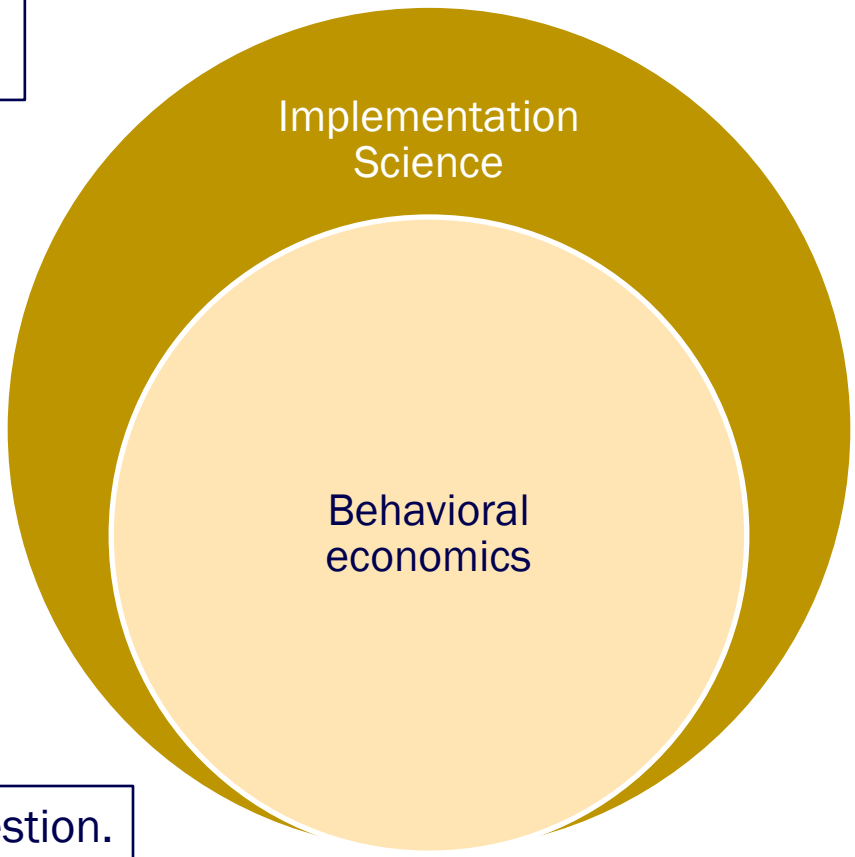
- Implementation and its science (these definitions are fairly specific to me)
  - Implementation is a process of planned human behavior change under organizational constraints
  - Implementation science is the study of implementation and related processes
  - Implementation science in health applies the study of implementation and related processes to health care services
    - Possibly secondarily to health behavior
  - Implementation practice applies tools and information from implementation science to improving delivery of services

- Behavioral economics
  - Wide range of definitions from the internet
  - (Oxford Languages) “A method of economic analysis that applies psychological insights into human behavior to explain economic decision-making”
  - (Wikipedia) “Behavioral economics studies the effects of psychological, cognitive, emotional, cultural and social factors on decisions of individuals and institutions and how those decisions vary from those implied by classical economic theory”
  - Interesting that most texts on behavioral economics start with “stories,” not definitions

How do we think about these two fields in relation to one another?

Is health different from other goods? Is healthcare different from other sectors?





This may be an important question. Or it may not.

Applications to health and health services

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There may be differences in the theory bases

- IS
  - Multiple sources of theory and a number of "atheoretic" positions
    - Psychology: TPB, TRA, control theory, others
    - Sociology: norms, networks, social influence
    - Organizational studies: org behavior, change management
    - And many more
- BE
  - Utility theory overarching
    - Rational choice
  - Prospect theory
  - Bounded rationality
  - Numerous "smaller" theories
    - A fair amount of cross-over with theories listed in the IS column

Utility theory

- Explain observed behavior and choices
- Posits that humans have “utility functions” which includes their most salient preferences and which determine their utility (or happiness)
  - “Disutility” can also be a negative preference
  - Utility functions are usually composed of goods ranked in order of preference where the concept of “good” is the economic term and can include things like “health,” “solitude,” etc. as well as more obvious goods (money, food, etc.)

Prospect theory

- Deals with how people make choices
  - Managing risk and uncertainty
  - Grounded in their current reality (which is largely unobservable)
  - Focus on loss aversion
    - Generally, people are more anxious to avoid losing something than they are to gain something that they don't already have
      - Degree of uncertainty and current circumstances mediate this effect
      - May be correlated with personality
- Important extension or modification of utility theory
  - Expected utility vs. actual utility
  - Anchored to a reference point (perception of current status)
  - Not directly observable
- Related to other important theories
  - Heuristics and bias, slow/fast thinking modes
  - Satisficing

How do these factor into decisions about health and health care?

- "Pure" utility theory generally does assume health is part of individuals' utility functions
  - But posits this as a fairly static concept, not very useful in some ways
- Prospect theory allows the way health enters the utility function and the preference ranking to vary
  - Can be anchored to current health condition
  - Loss aversion may be very important in health decision making for individuals
  - But it may also be important for health care providers

Additional theoretical considerations

- Principal-agent theory
  - A major difference in health care services
    - Many health services are only available through the services of another (agent)
    - Classic: physician but other entities and providers as well
    - High degree of specialization and professionalization
    - Role of insurance as agent is often treated differently
- Cost utility of knowledge utilization (CUKU)
  - Knowledge utilization is another term (in some ways) for implementation of evidence based practice
  - Application of utility theory to KU/IS may be useful
    - Especially with a focus on disutility (cost) to the individual(s) being targeted for behavior change
    - May relate to loss aversion

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More on principal-agent theory in the context of implementation

- Whose utility?
  - Principal (patient)
  - Agent (provider)
- Whose behavior?
  - Much of implementation research and practice focuses on the behavior of the agent
    - "Under organizational constraints"– organizations act to constrain agents, not principals (generally)
    - Need to recognize dual agency
      - Agency on behalf of patients, but also agency on behalf of payers
      - Organizations mediate these dual interests to some extent
  - Behavior of the principal is generally the domain of health psychology/human behavior change
    - Behaviors under the control of the individual– diet, exercise, smoking, other "lifestyle" decisions

More on cost utility (or disutility)

- Costs of behavior change
  - Some fairly easily quantified costs
    - Time, equipment, materials
  - Other much less quantifiable costs
    - Learning and unlearning
    - Loss of self-esteem– may no longer feel like an expert
      - Cost of not knowing
    - Characteristics of personality may be a major factor
      - Big Five: openness; conscientiousness; extraversion; agreeableness; neuroticism
  - Interaction with organizational constraints
    - Agents are also principals in their own organizational contexts
      - Needs that require service from the organization as well as constraints on action
      - Workflows (channeling and systematization of work), which are central to behavior change, are largely organizationally constructed

But there's more to research than theory

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There appear to be differences in approach

- IS
  - Increasingly systematic approaches
    - Design
    - Use of codified knowledge (frameworks)
    - Testing of specified strategies
    - Evaluation using mixed methods
  - Primacy of existing evidence
- BE
  - Radical empiricism
  - "See what works"
  - Tradition of experiments
    - But little systematic design thinking

So what difference does any of this make?

- These two fields are often seen as different, and sometimes oppositional
  - I propose that while there are key differences, there may be more similarities than differences
  - Differences may be more in approach than in orientation or theoretical underpinnings
- These fields ignoring each other may not be optimal
  - Each field can learn from the other
- An important benefit from attending to each other is the gain in theoretical perspectives
  - May inform new ideas for strategies
  - May offer new insights to understand basic principles and mechanisms