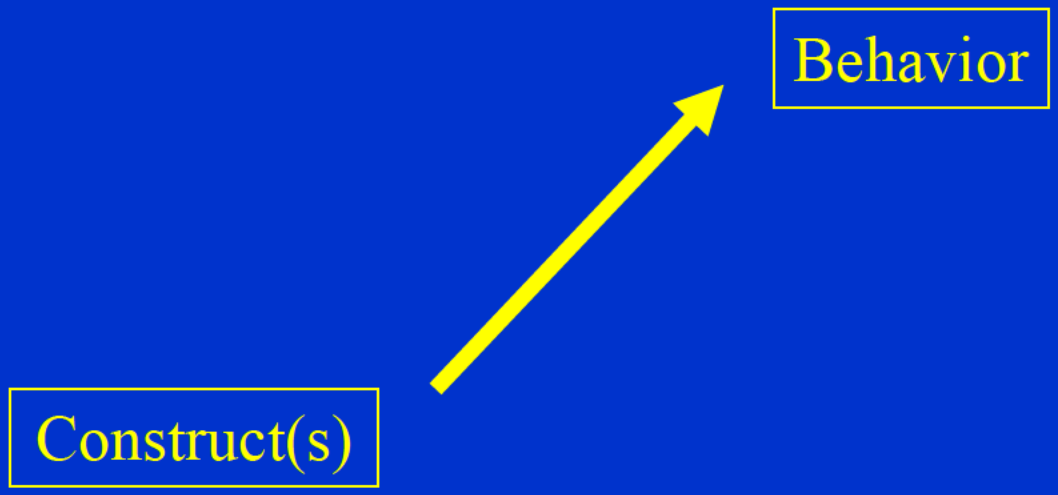
Toward a "Good" Health Behavior Theory: Moving from Challenges to Opportunities

Alex Rothman
Department of Psychology
University of Minnesota

NCI/SRTB Big D.A.T.A. Workshop
September 19-20, 2013

What Could/Should a Theory Do?

- A health behavior theory describes the expected relation between phenomena (i.e., constructs, behavior).



- "…there is nothing so practical as a *good theory*."
  --Kurt Lewin (1943-44), "Problems of research in social psychology"

What Could/Should a Theory Do?

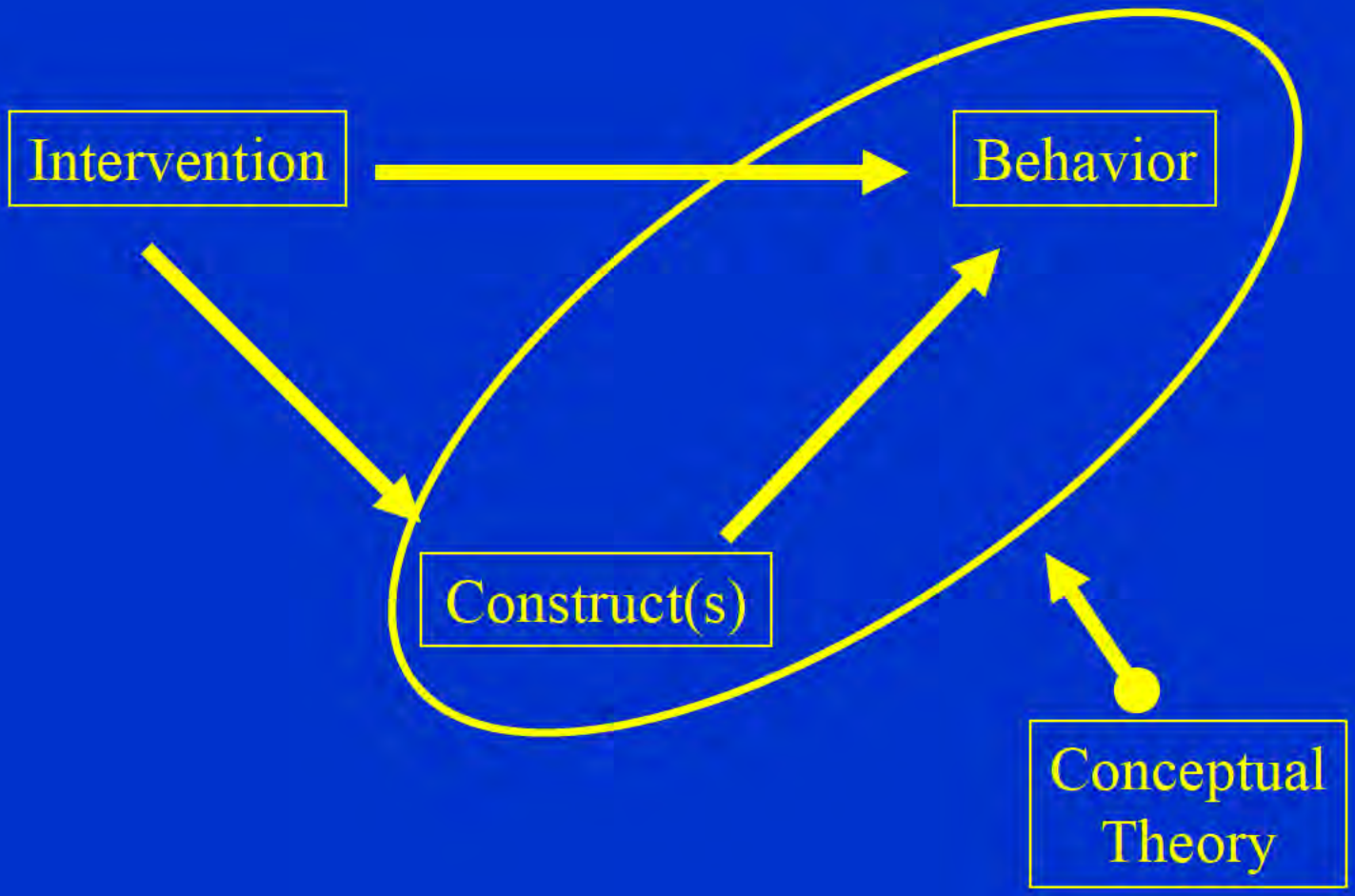
- A theory describes the expected relation between phenomena (i.e., constructs, behavior).
- "…there is nothing so practical as a *good theory*."

  --Kurt Lewin (1943-44), "Problems of research in social psychology"

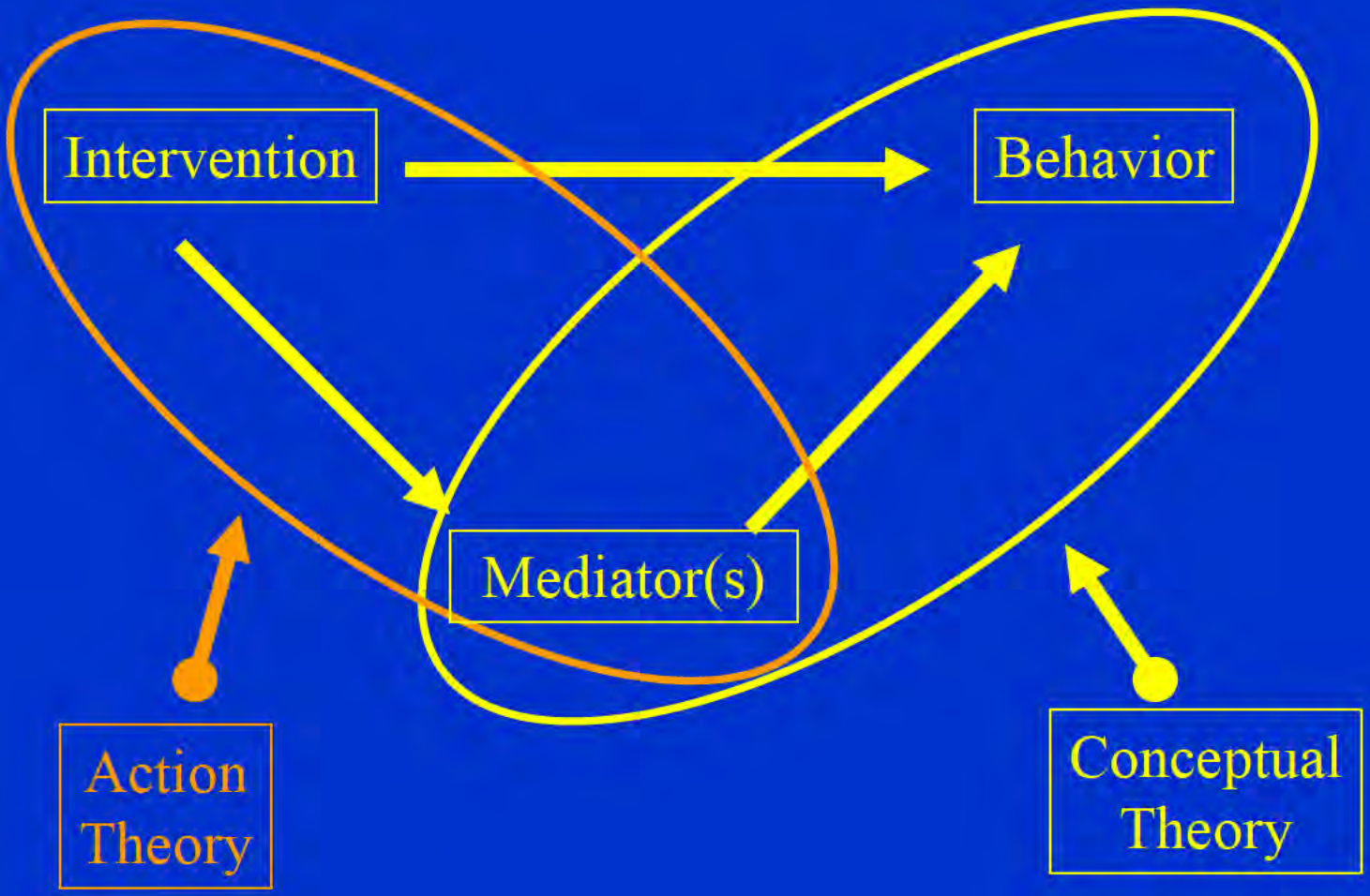
What might a *good theory* do? (Rothman, 2004, 2009)

- **Guide the development of intervention techniques**: Specify factors that influence the key constructs that, in turn, affect behavior

What Might a "Good Theory" Do?



What Might a "Good Theory" Do?



What Could/Should a Theory Do?

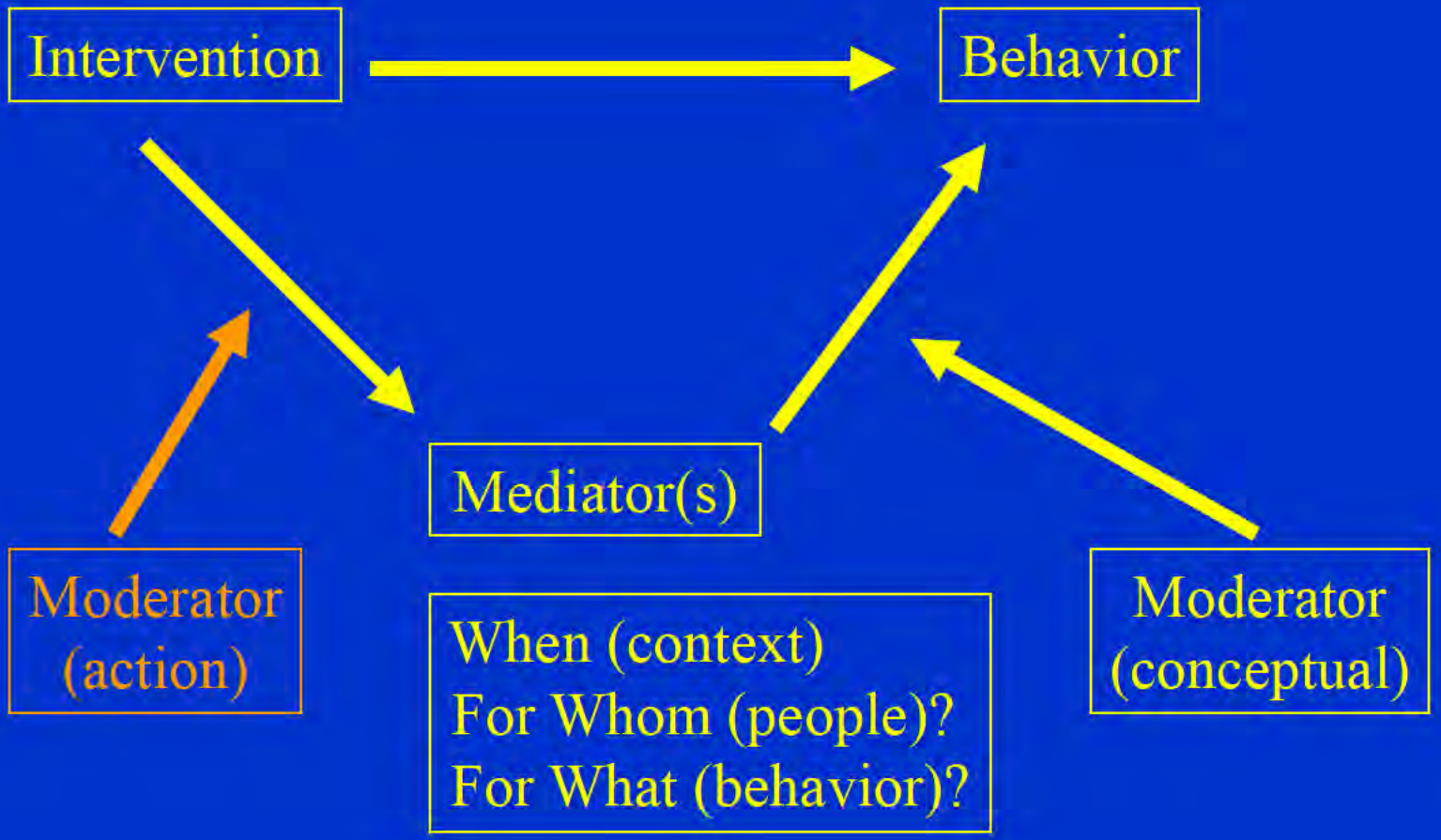
- A theory describes the expected relation between phenomena (i.e., constructs, behavior).
- "…there is nothing so practical as a *good theory*."

  --Kurt Lewin (1943-44), "Problems of research in social psychology"

What might a *good theory* do?

- **Guide the development of intervention techniques**: Specify factors that influence the key constructs that, in turn, affect behavior
- **Specify when a theory does *not* apply**: Provide precise predictions regarding the conditions under which specified relationships do and do not hold (Setting, Populations, Behavior)

What Might a "Good Theory" Do?



What Could/Should a Theory Do?

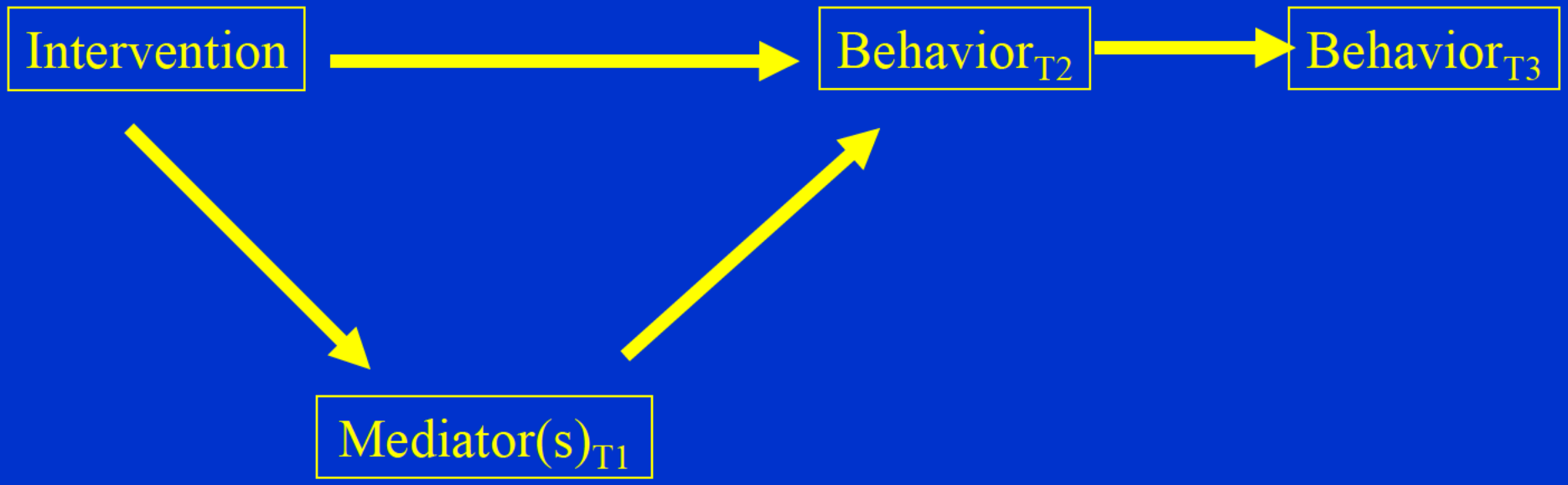
- A theory describes the expected relation between phenomena (i.e., constructs, behavior).
- "…there is nothing so practical as a *good theory*."

  --Kurt Lewin (1943-44), "Problems of research in social psychology"

What might a *good theory* do?

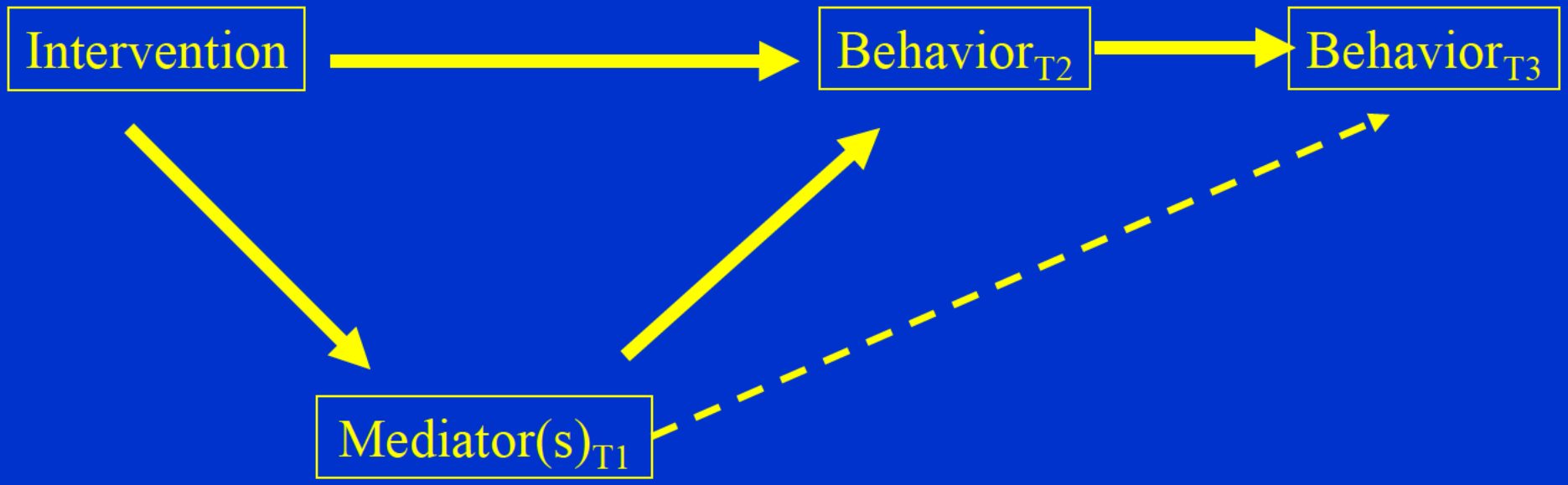
- **Guide the development of intervention techniques**: Specify factors that influence the key constructs that, in turn, affect behavior
- **Specify when a theory does *not* apply**: Provide precise predictions regarding the conditions under which specified relationships do and do not hold (Setting, Populations, Behavior)
- **Engage with how behavior unfolds over time**: Provide precise predictions regarding the timing and time course of specified relationships

What Might a "Good Theory" Do?



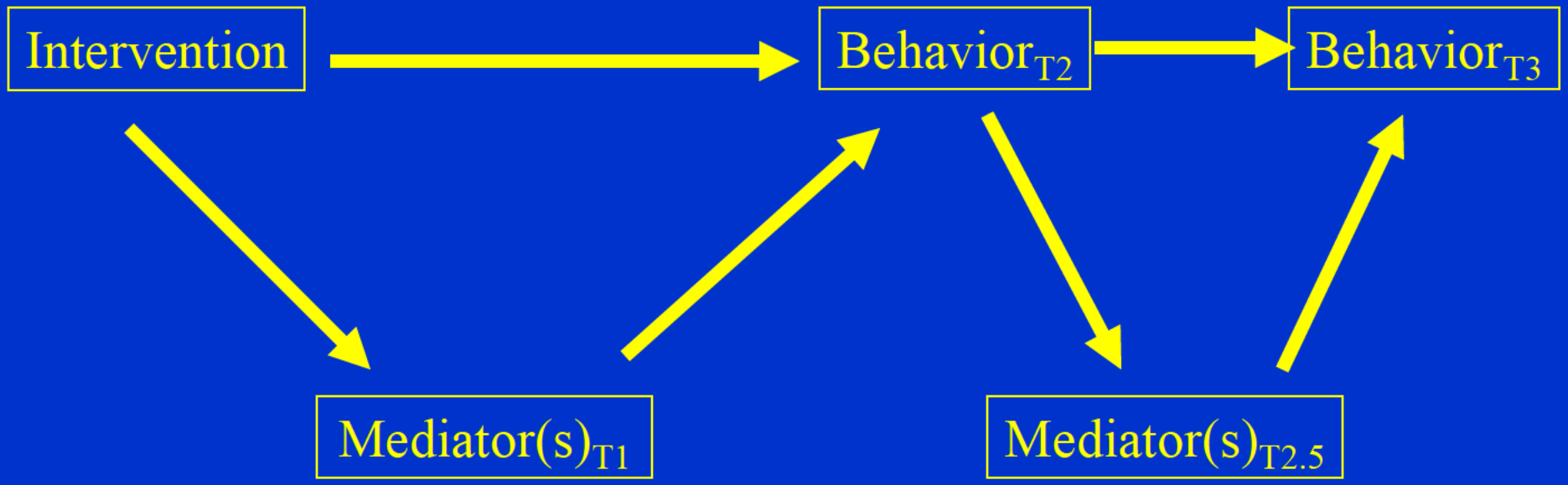
Timing: When does it matter?
Specificity: What matters when?

What Might a "Good Theory" Do?



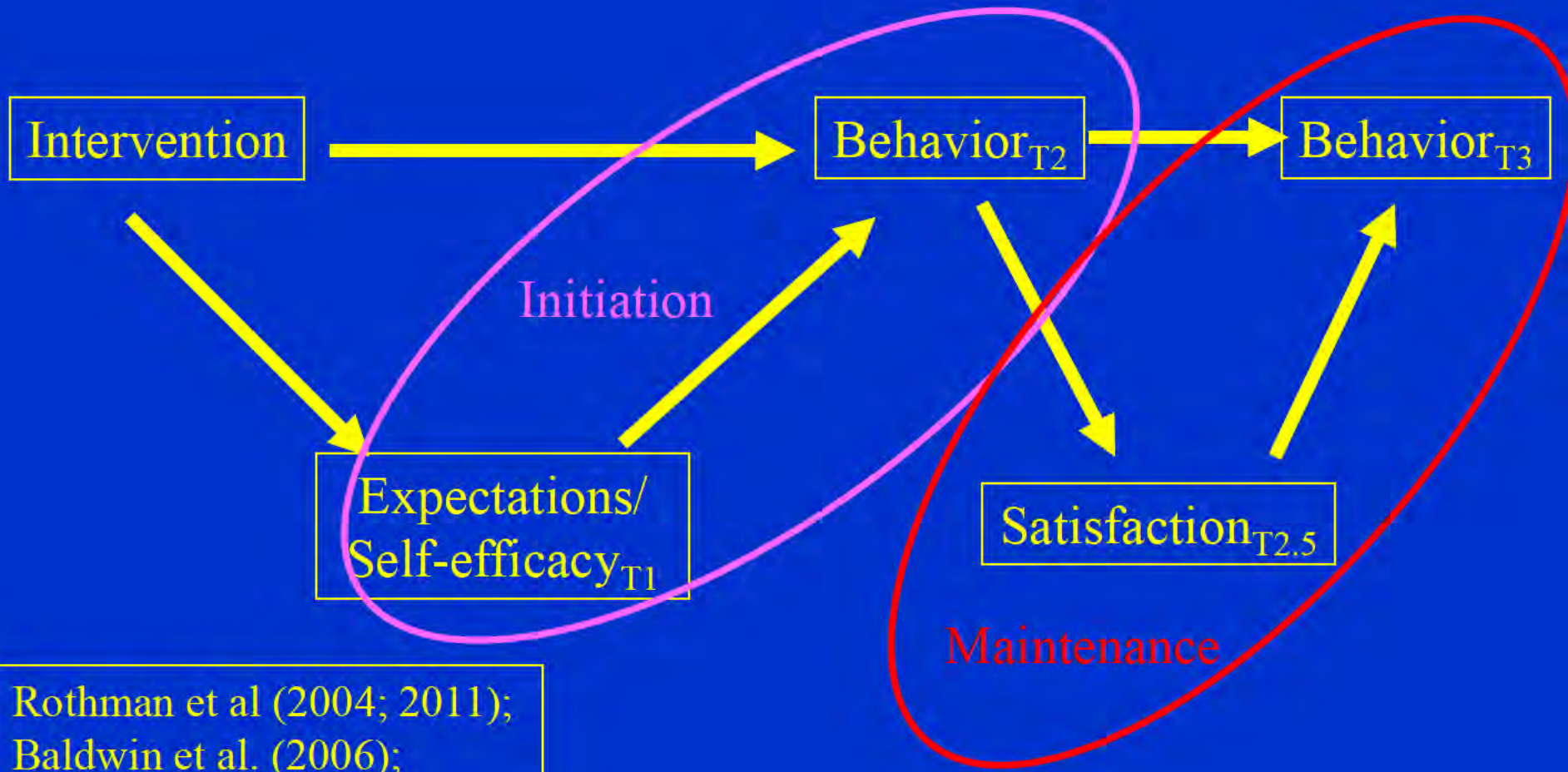
Timing: When does it matter?
Specificity: What matters when?

What Might a "Good Theory" Do?



Timing: When does it matter?
Specificity: What matters when?

What Might a "Good Theory" Do?



Rothman et al (2004; 2011);
Baldwin et al. (2006);
Hertel et al. (2008)

What Could/Should a Theory Do?

- A theory describes the expected relation between phenomena (i.e., constructs, behavior).
- "…there is nothing so practical as a *good theory*."

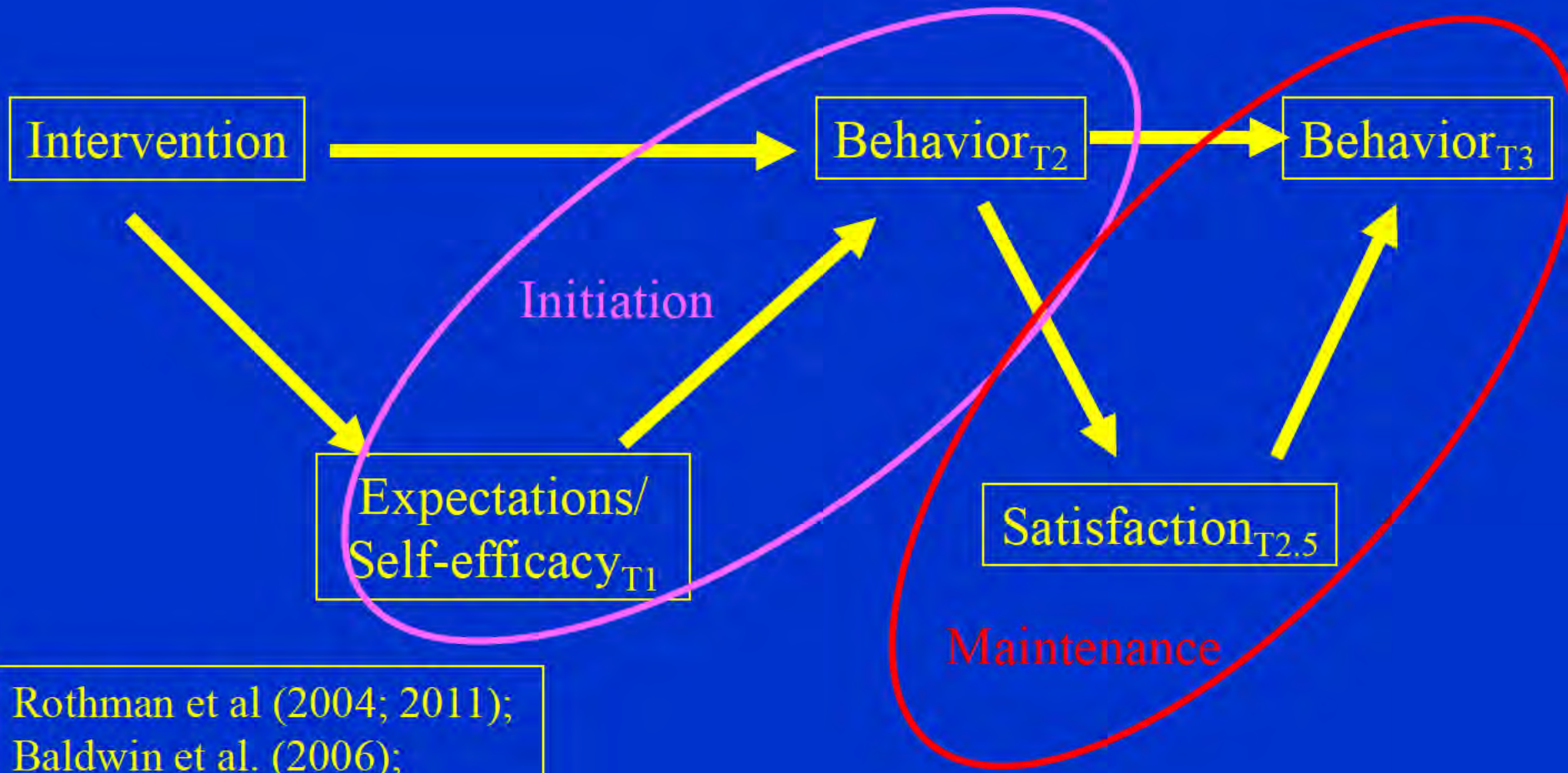
  --Kurt Lewin (1943-44), "Problems of research in social psychology"

What might a *good theory* do?

- **Guide the development of intervention techniques**: Specify factors that influence the key constructs that, in turn, affect behavior
- **Specify when a theory does *not* apply**: Provide precise predictions regarding the conditions under which specified relationships do and do not hold (Setting, Populations, Behavior)
- **Engage with how behavior unfolds over time**: Provide precise predictions regarding the timing and time course of specified relationships
- **Provide precise predictions regarding the nature of the specified relationships** (e.g., linear change; threshold models)

What Might a "Good Theory" Do?

Are the underlying effects: linear? curvilinear? thresholds?



Rothman et al (2004; 2011);
Baldwin et al. (2006);
Hertel et al. (2008)

How can “Big DATA” help theories evolve into good theories?

- Implementation of methods/tools that enable investigators to both ***imagine*** and ***test*** more complex theoretical premises
  - Design and use of methods that afford collection of data across settings/time
  - Scale and scope of observations afford the opportunity to test more complex models (explore both *a priori* and *post-hoc* variability across setting, populations, behavior; over time)
  - Application of simulations to examine different models (and underlying specifications)