

Behavioral Levers, Selection Guidelines, and Multi-Modal Approaches

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Behavioral Levers:

A Behavioral Science Primer

Why are we here?

Learning to Motivate, Enable, and Engage People on the Tough (Sustainability) Behaviors

“We collectively haven’t cracked the code on conveying the benefits of smarter energy to the **individual**, to **families**, and to **communities**.

...One that gives them compellingly easy ways to control their energy usage, and that **engages their hearts and minds to take a more active role** in doing so.”

- Sam Palmisano,
Former CEO of IBM

Behavioral Levers

Individual

Behavioral
Economics
Psychology

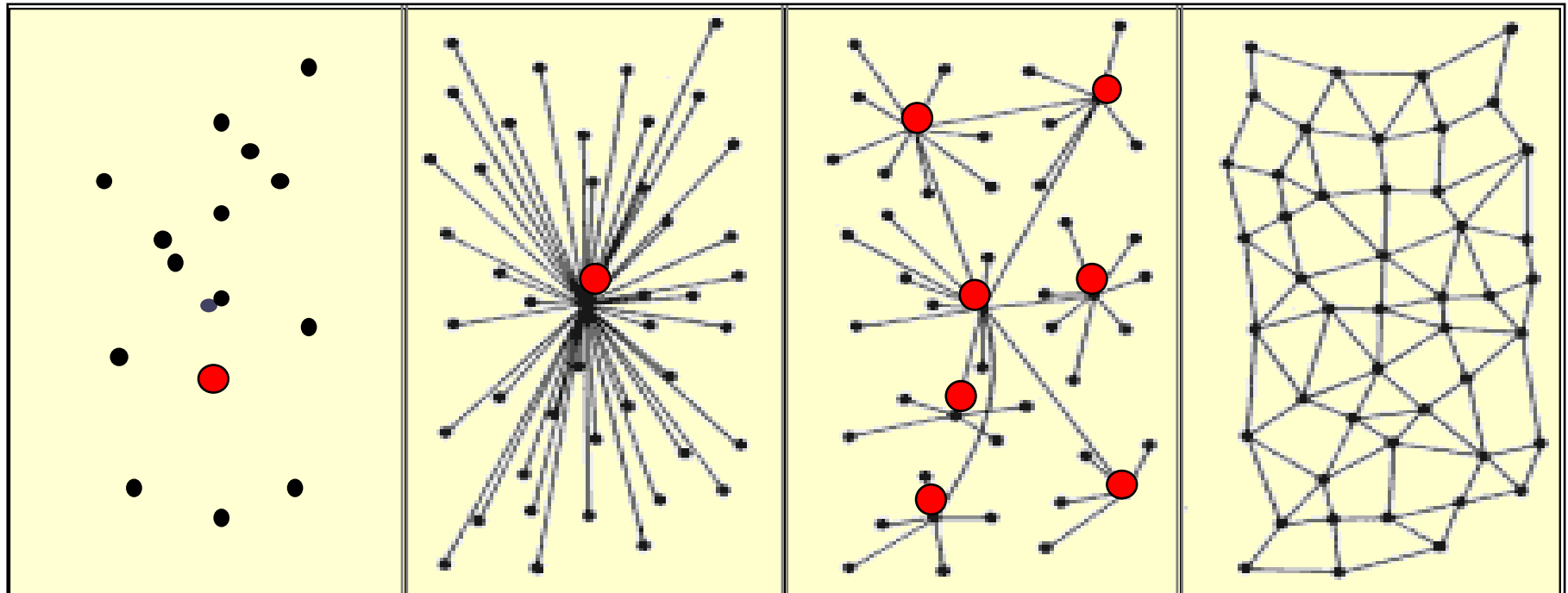


Social

Social Psychology
Community-Based
Social Marketing



Building up to Culture Change



**Individuals,
Families**

**Neighborhoods,
Communities**

Regions

Society

Tipping Point...that moment when an epidemic reaches critical mass. (Malcolm Gladwell)

Assumptions from Economics:

Rational People

- Agents are rational, controlled, informed, selfish, and calculating
- Preferences are known, stable, and ordered
- Maximize welfare returns (efficient and self-regarding)
- Optimal market conditions



Behavioral Economics: Predictably Irrational People

- Individuals & organizations do not maximize welfare
 - Reciprocating, trusting, and vindictive
- Follow suboptimal decision strategies
 - Solve local decisions
 - Misunderstand implications
- Succumb to different decision traps
 - Incoherent preferences/variable tastes
(poorly predicted)
 - Impulsive, myopic



Two Systems for Thinking



Intuitive & Automatic	Reflective & Rational
Uncontrolled	Controlled
Effortless	Effortful
Associative	Deductive
Fast	Slow
Unconscious	Self-aware
Rules of thumb	Rule-following
Gut Feelings	Conscious Thought



Most programs focus their efforts here



Source: Thinking Fast and Slow, Daniel Kahnemann, 2013

Ingrained Biases

Psychology, sociology, and behavioral economics provide a deeper understanding of the factors that shape choices and practices.

Bias	Definition
Anchoring	How starting points determine decisions
Availability	How assessments of the likelihood of risk are influenced by how readily examples come to mind.
Optimism	The belief that we are above average.
Loss Aversion	Losing something makes us twice as miserable as gaining the same thing makes us happy.
Status Quo	People tend to stick with their current situation.
Framing	Presenting the same information in different ways affects outcomes.

Source: Thinking Fast and Slow, Daniel Kahnemann, 2013

Behavioral Economics:

Facts of OVER-Consumption

- Energy **payments** are separate from **consumption**
- Short-term gain for long-term price



- Let's not forget the externalities...



Behavioral Economics:

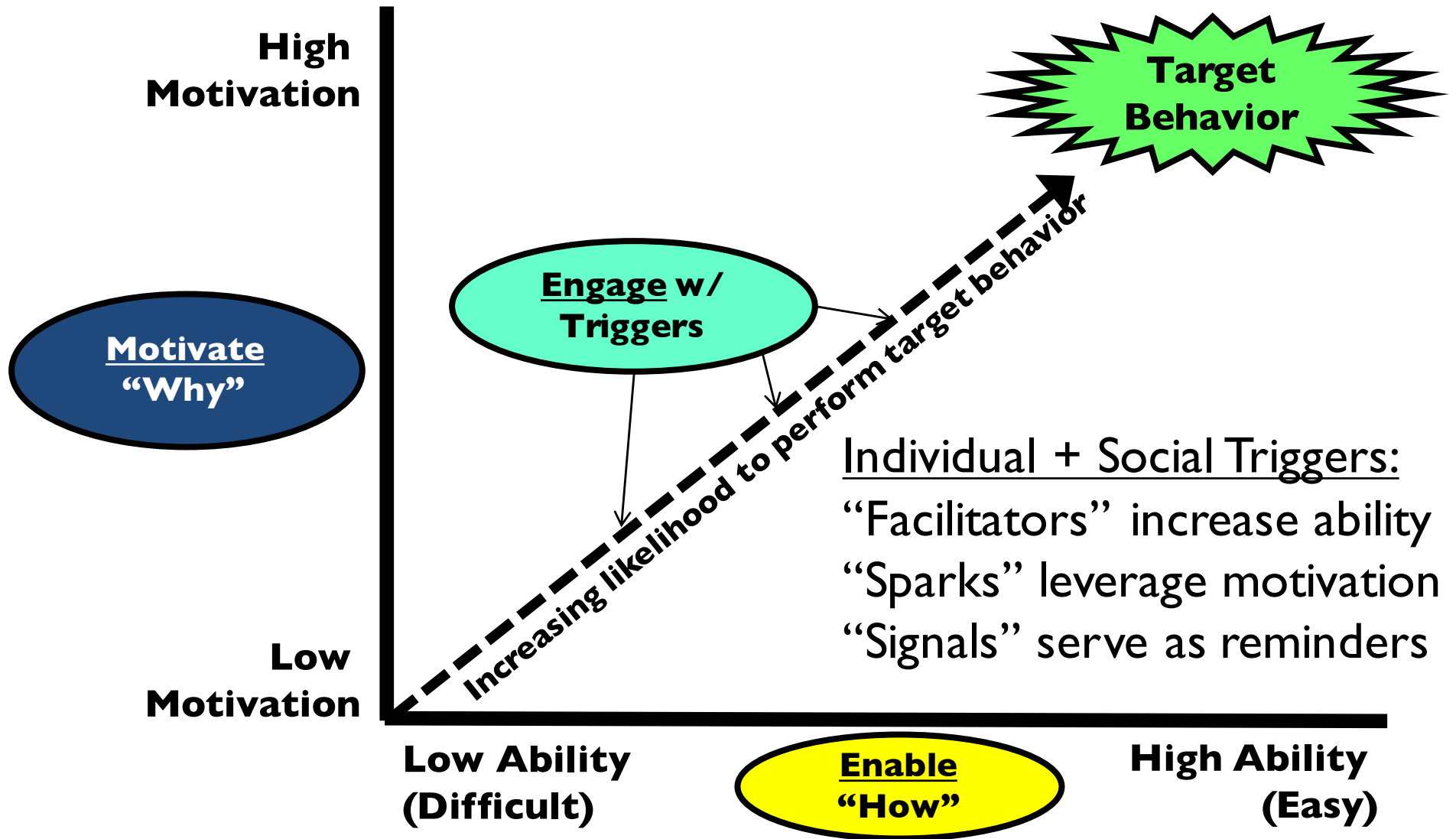
Payments are separate from consumption

- Need to Invoke the Pain of Paying!
- Psychology of \$\$\$
 - Loss aversion: We hate losses and “wasting”
 - Relativity: We think (wrongly) in percentages
- Pain of Paying
 - Pre-pay (e.g., the magic number of zero)
 - Pay as you go (e.g. feedback, fees on bottles)
- Lotteries
 - Returned bottle or refilled bottle = lottery entry



Slide Inspired by Dan Ariely
Energy Usage:
A View From Behavioral Economics (BECC 2009).

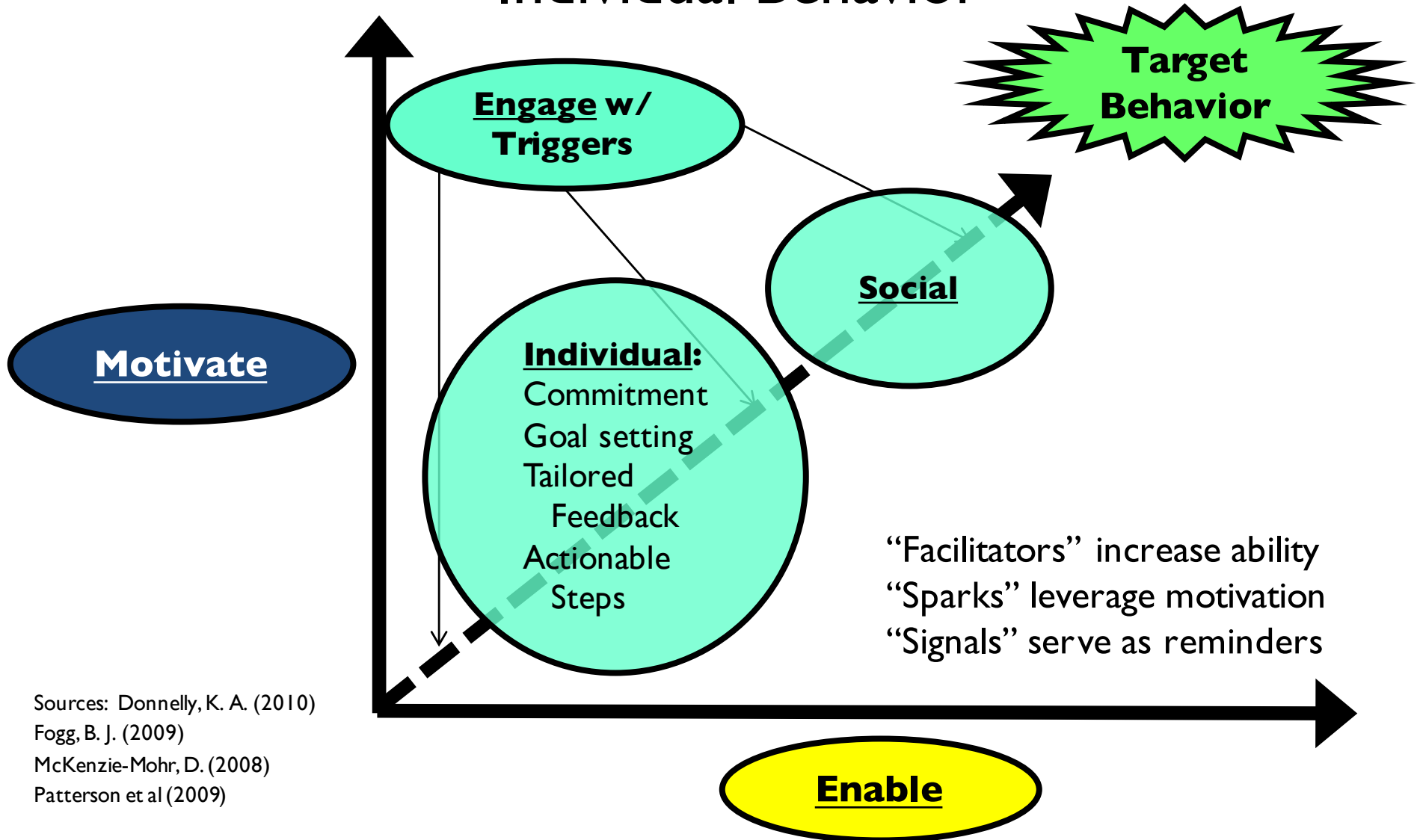
Persistent Behavior Change Framework



Graphical framework derived from: Fogg, B. J. (2009). A Behavior Model for Persuasive Design. Persuasive Conference 2009, Claremont, CA.

Targeted Behavioral Tools:

Individual Behavior



Sources: Donnelly, K. A. (2010)
 Fogg, B. J. (2009)
 McKenzie-Mohr, D. (2008)
 Patterson et al (2009)

Individual Psychology: Goal Setting and Commitment

Goal Setting

-Loss Aversion

-Framing/Anchoring

Look forward, not back

Challenging, yet doable

Zhang et al 2007, Soman 2004, Schnoll and
Zimmerman, 2001, Ester, 1985, Katzev, 1987

Individual Psychology: Goal Setting and Commitment

Goal Setting

-Loss Aversion

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Look forward, not back

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Zhang et al 2007, Soman 2004, Schnoll and Zimemrman, 2001, Ester, 1985, Katzev, 1987

Commitments

- Moral obligation

- "Foot in the Door"

Abrahamse et al 2007, Ariely & Wertenbrock 2002, McCalley & Midden 2002



A. Increases:

1. Motivation,
2. Ability to getting started,
3. Commitment,
4. Direction, and
5. Adoption of behaviors

Individual Psychology: Tailored Feedback

Tailored Feedback

- Personalized:
 - Benchmarks,
 - Progress, and
 - Expected performance

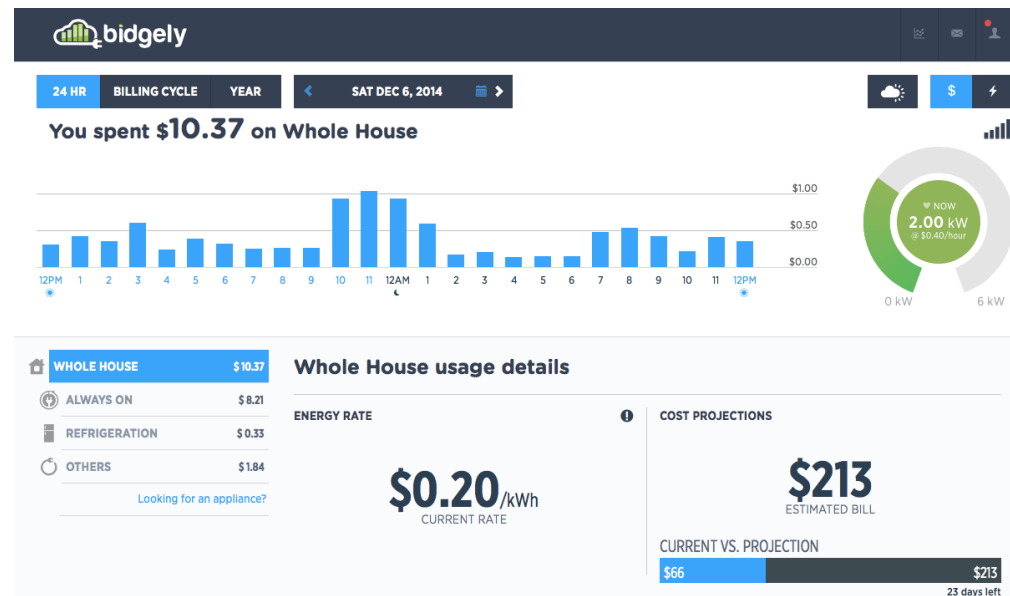
- Past, Present, Projected

- Direct and Indirect

Ehrhardt-Martinez et al 2010, EPRI 2009, Abrahamse et al 2007, Darby 2006



POWERCOST MONITOR™



Individual Behavior: Calls to Action

Small, Actionable Steps

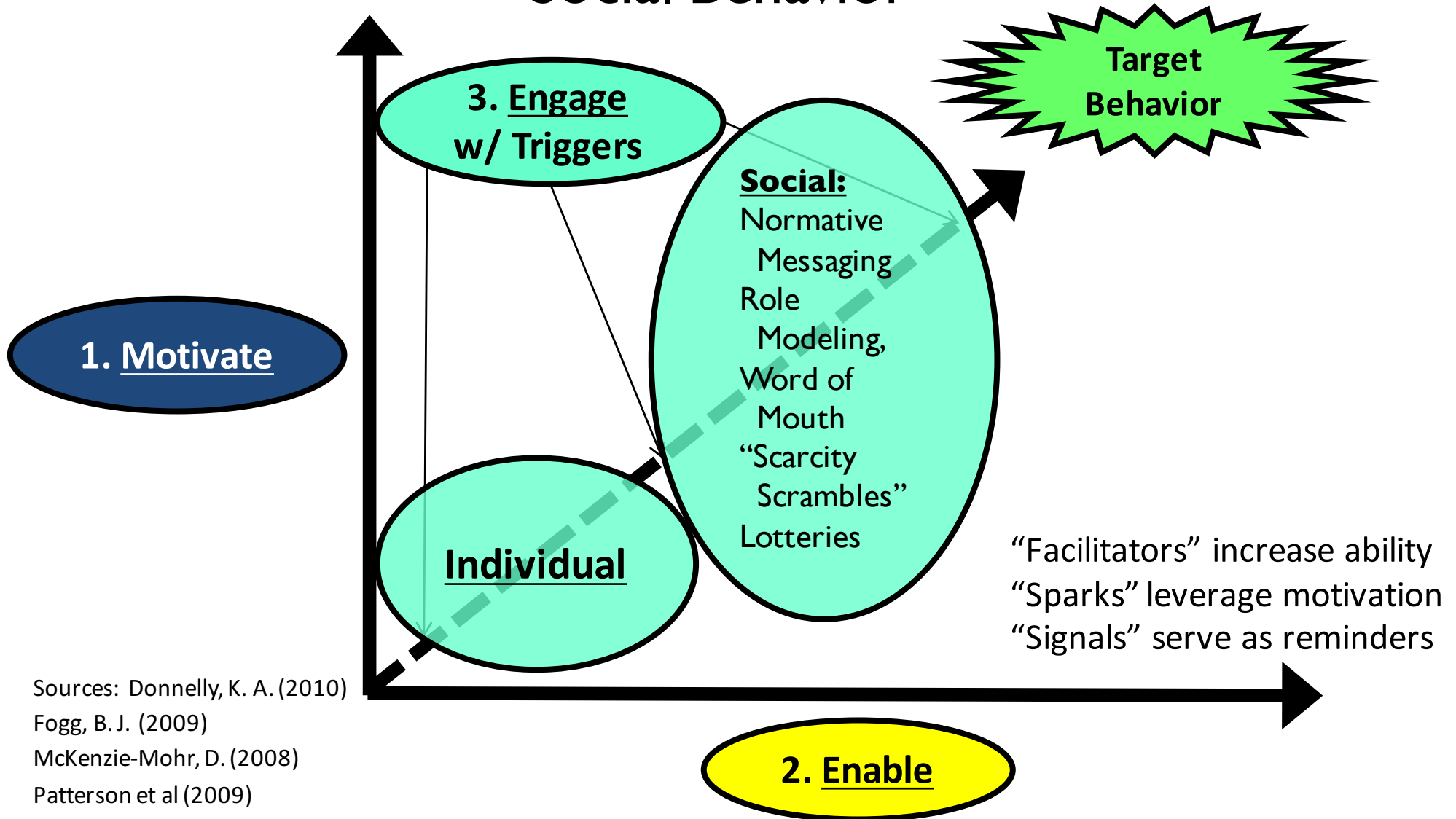
Honebein et al 2009,
Abrahamse et al 2007

People reduce more energy waste and
have more knowledge about waste.



Targeted Behavioral Tools:

Social Behavior



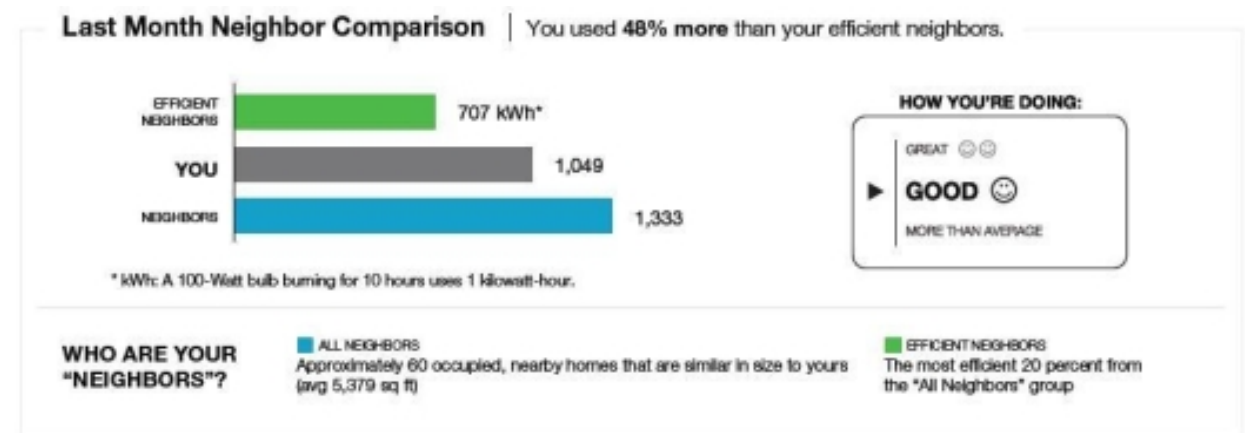
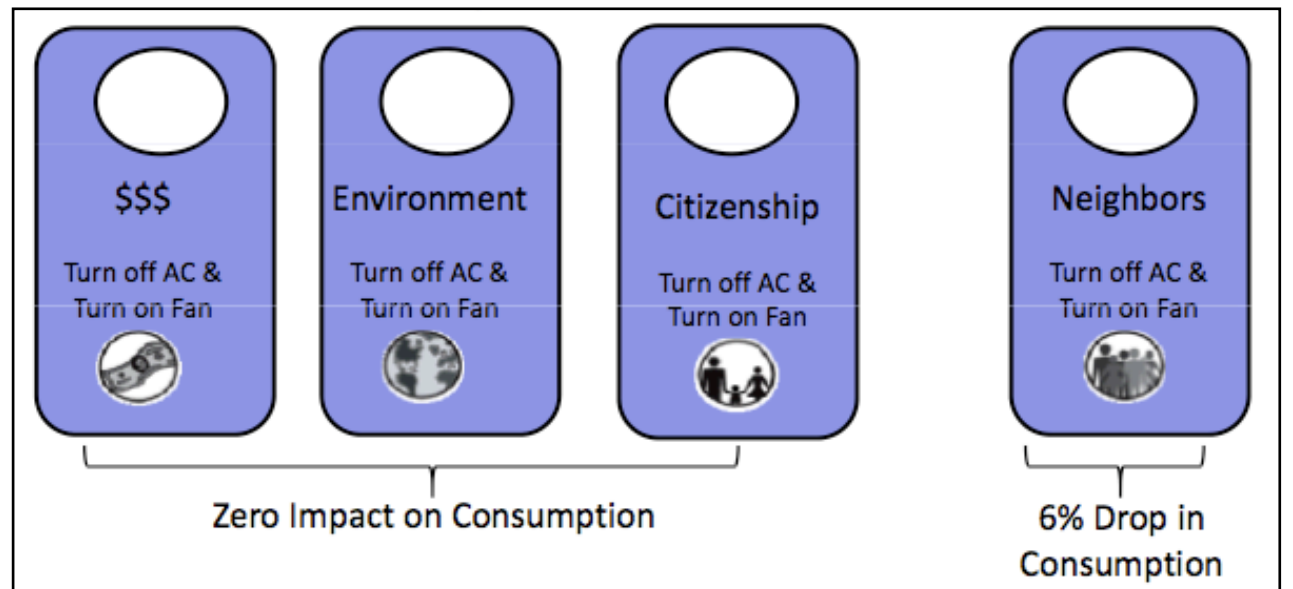
Sources: Donnelly, K. A. (2010)
 Fogg, B. J. (2009)
 McKenzie-Mohr, D. (2008)
 Patterson et al (2009)
 Slide by Kat A. Donnelly

Social Psychology: Normative Messaging

Descriptive and Injunctive Norms

Cialdini et al 2009, 2008, 2007, Cehn et al 2009, Nolan 2008, OPOWER

1. Provide social comparisons
2. Can be a powerful “lever of persuasion”, and
3. Are more effective when attached to immediate surroundings and personal context

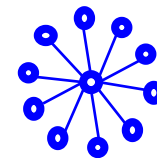


Social Psychology: Social Ties

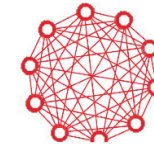
Networks/Groups

Staats et al 2004, Carpenter 2009,
Patterson et al 2008, McKenzie-Mohr 2008,
Christakis & Fowler 2007, Granovetter 1973

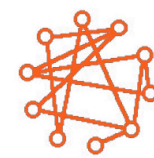
1. Individuals are embedded into social groups that influence their behaviors
2. Networks consist of strong and weak ties that dictate how norms, behaviors, ideas, technologies, move through the network



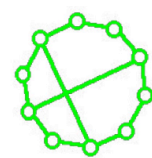
Hub and Spoke



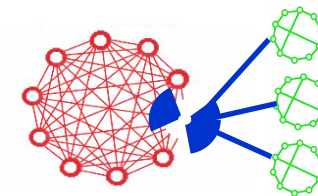
Fully Connected



Random



Small World





Neighbor to Neighbor
ENERGY CHALLENGE
Small Changes. **BIG RESULTS.**

Social Triggers in Action Testimonials

Testimonials



"I went to a Neighbor to Neighbor workshop and was inspired to take a look at my attic insulation [...] I can absolutely feel the difference before and after having the insulation redone."

- Andy Adil, Wethersfield



"I came to a Neighborhood Energy Workshop and was inspired to become an ambassador for the Challenge."

Bob Giddings, Cheshire

- Send social signals to others about the “right” behavior
- Leverage norms, social networks, peer pressure, social acceptance

Social Triggers in Action Community Rewards Program



Get My CBO to Sign Agreement	Eligible
Organize Workshop	1,000 points
CBO Member Attendance	100 points
Completed Assessment	200 points
Home Energy Upgrades	<u>500 points</u>
Community Org Winner	? Points



1st Place
\$1,000

2nd Place
\$250

Grand Prize
\$5,000

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Individual and Social Psychology: Scarcity Scrambles

“Scarcity Scrambles”

Case 2010

Creating limited time offers requiring pre-qualification on a certain future date

- a. Create word of mouth “feeding frenzy”
- b. Start individuals on the sustainability pathway



Social Psychology:

Social Influence Behavioral Levers

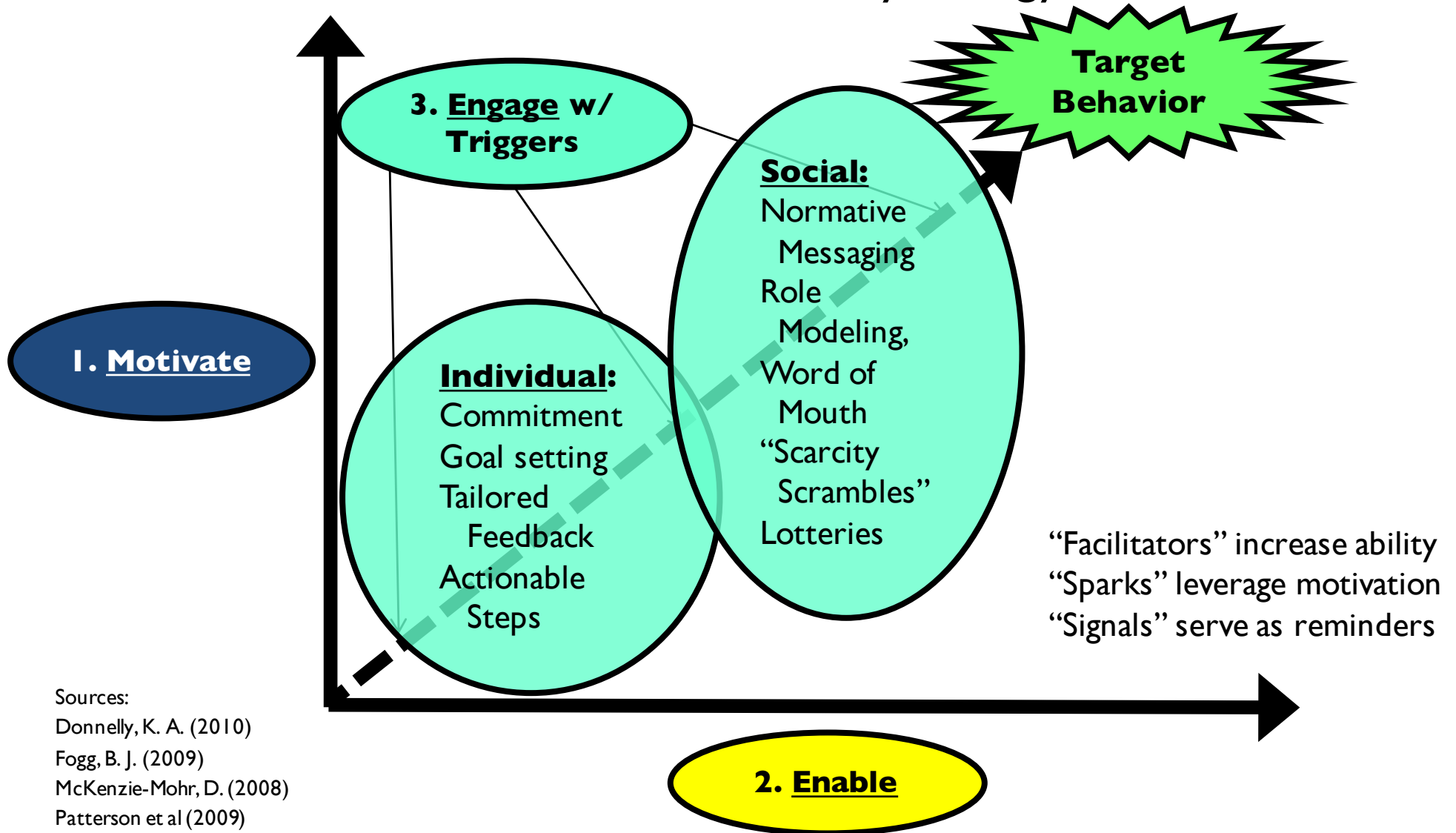
Six useful “friendly persuasion” tools for culture change:

- 1. Commitment and Consistency:** people will stick to commitments made publicly.
- 2. Social Proof:** people will do what other people do.
- 3. Scarcity:** people desire what is perceived as scarce.
- 4. Reciprocity:** people will repay favors.
- 5. Authority:** people obey authority figures.
- 6. Liking:** people are more influenced by those they like.

Source: Robert Cialdini, *Influence: The Psychology of Persuasion* (2007)

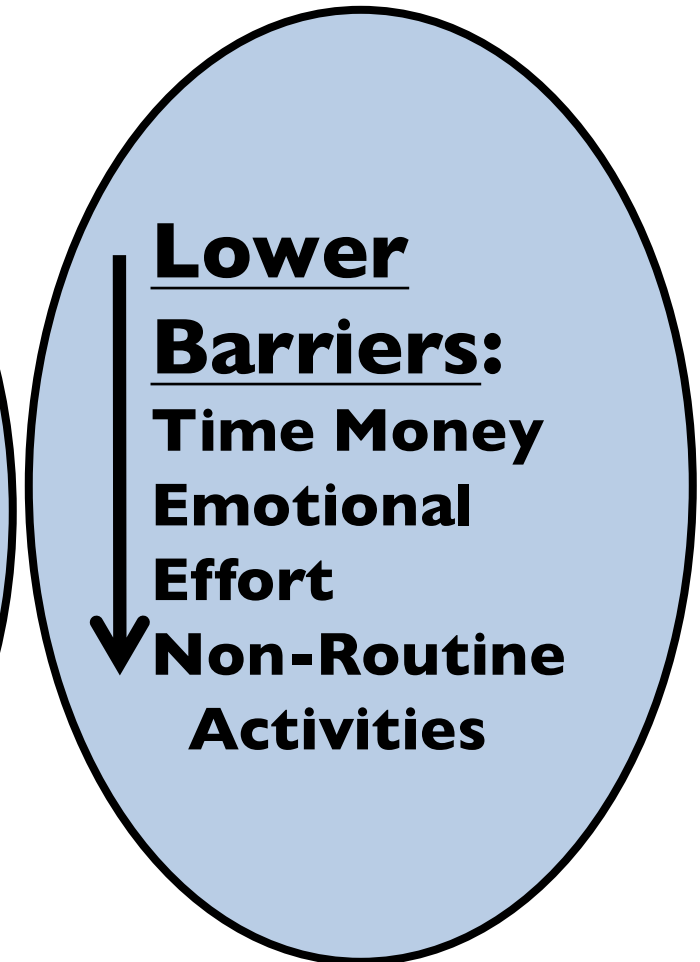
Comprehensive Behavioral Levers:

Individual and Social Psychology



Sources:
 Donnelly, K. A. (2010)
 Fogg, B. J. (2009)
 McKenzie-Mohr, D. (2008)
 Patterson et al (2009)

Motivating Engagement ...Getting to the



Sources: Donnelly, K. A. (2010)
Fogg, B. J. (2009)
McKenzie-Mohr, D. (2008)
Patterson et al (2009)

Enabling Engagement ...Getting to the



Enable
The
“How”
(Infrastructure)

Individual:
Measurement
Automation
Feedback
Devices and
Approaches

Social:
Trusted
Messengers
Social
Connections
Social
Networking
Social Media

Sources: Donnelly, K. A.
(2010)
Fogg, B. J. (2009)
McKenzie-Mohr, D. (2008)
Patterson et al (2009)

Community-Based Social Marketing (CBSM)

- **Putting individual and group triggers into action**
 - Motivates, Enables, and Engages (continuously)



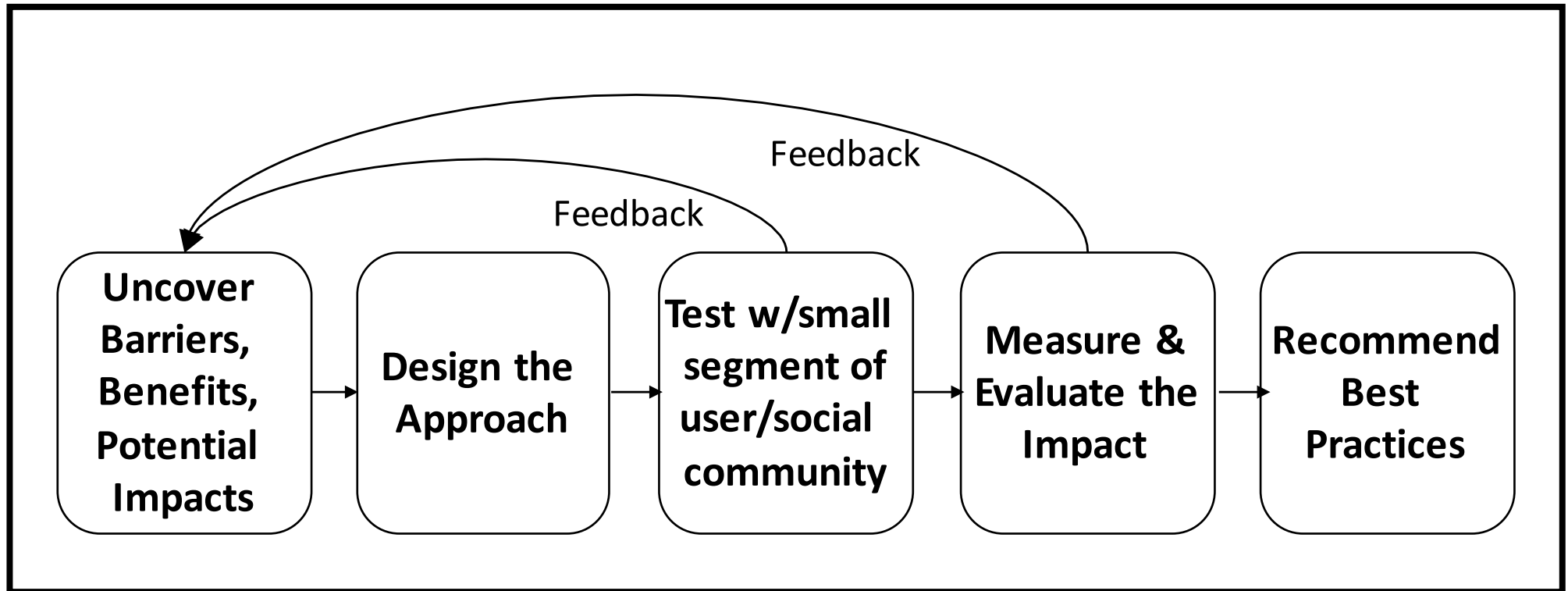


Community-Based Social Marketing (CBSM)

- **Putting individual and group triggers into action**
 - Motivates, Enables, and Engages (continuously)
- **Targeted** at people who
 - Have a reason to care
and
 - Are ready for change
- Change works on the installment plan by
 - **Goal setting** and **commitment**
 - Comparisons to **social groups**
 - Engaging people in **small, actionable steps**

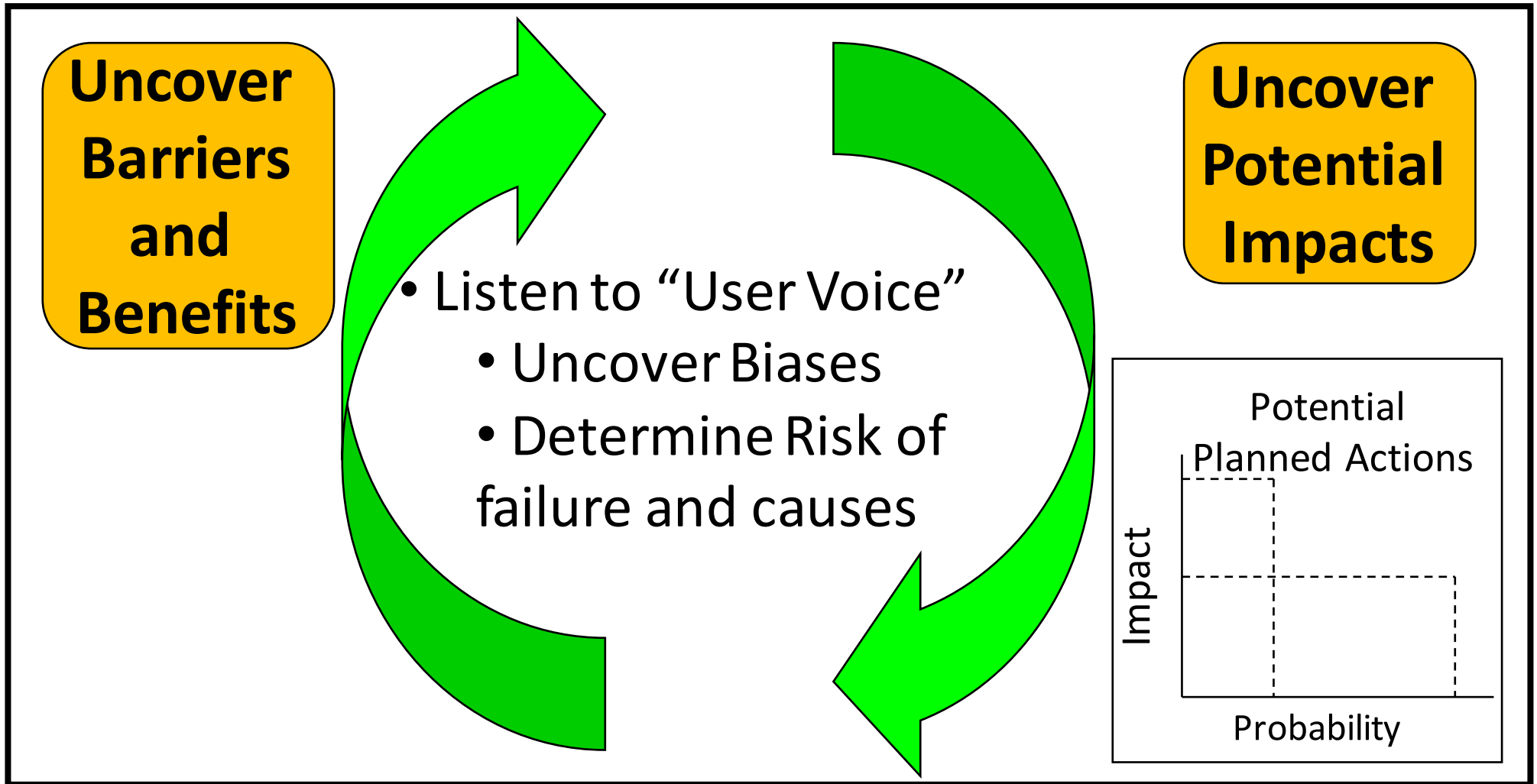


CBSM: Designing the Program



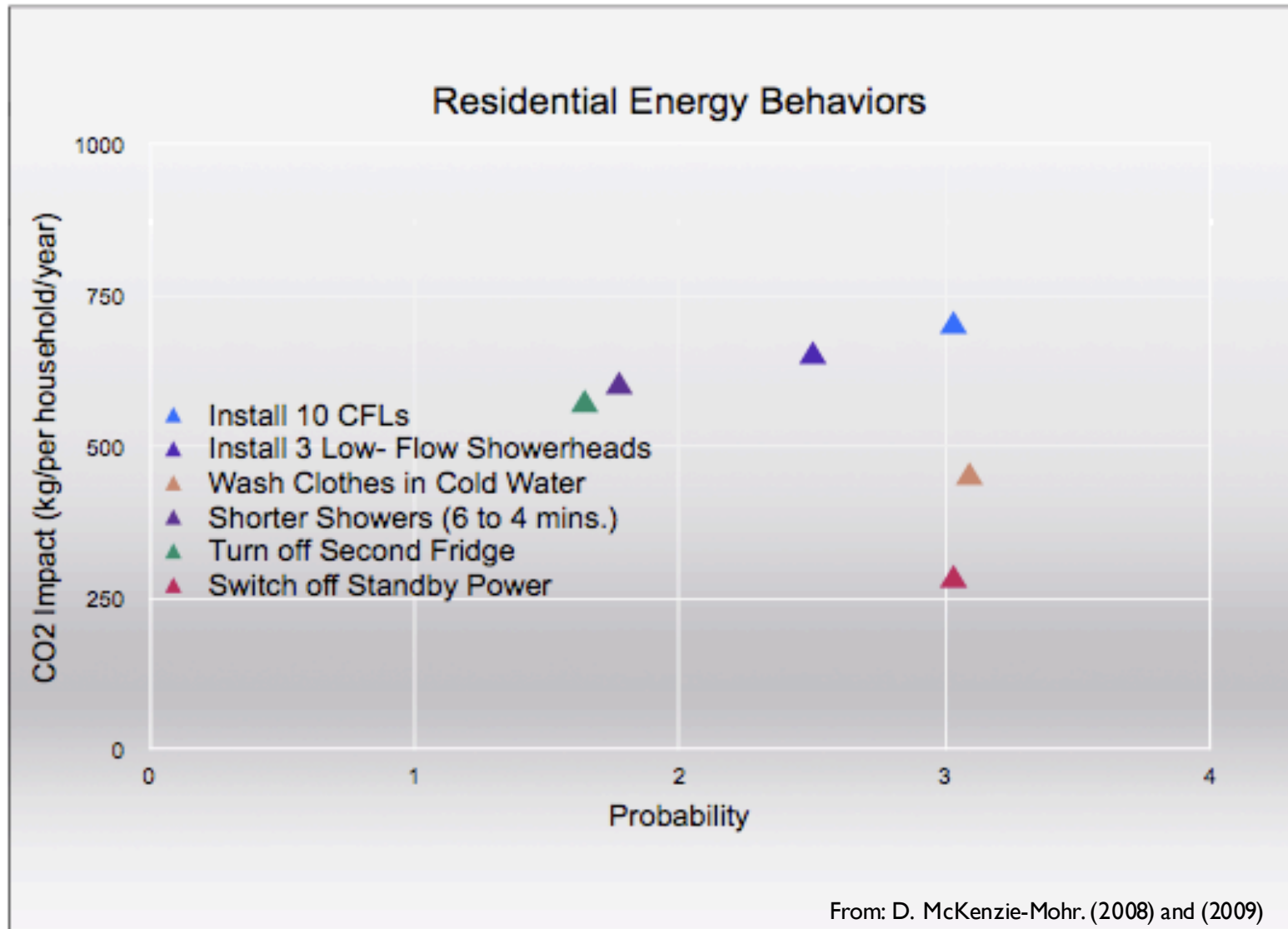
For the next several CBSM Slides, Sources:
Fostering Sustainable Energy Approach derived from: D. McKenzie-Mohr. (2008). Fostering Sustainable Behavior: On-line guide, and
D. McKenzie-Mohr (2009). Fostering Sustainable Behavior Presentation at the Behavior, Energy, Climate Change (BECC) Conference (Slides 7 to 9).

CBSM: Determine which Behaviors to Target FIRST

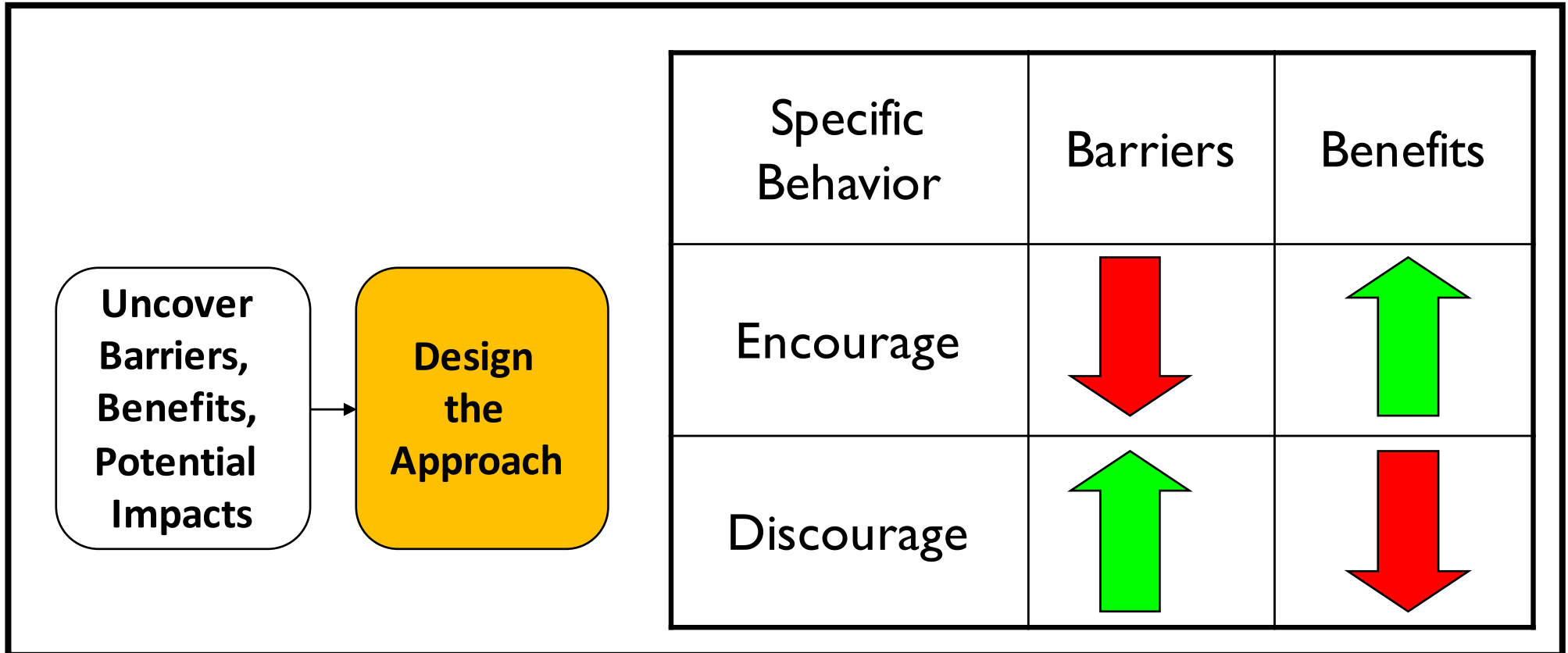


Derived from: D. McKenzie-Mohr. (2008) and (2009).

CBSM: Determine which Behaviors to Target FIRST

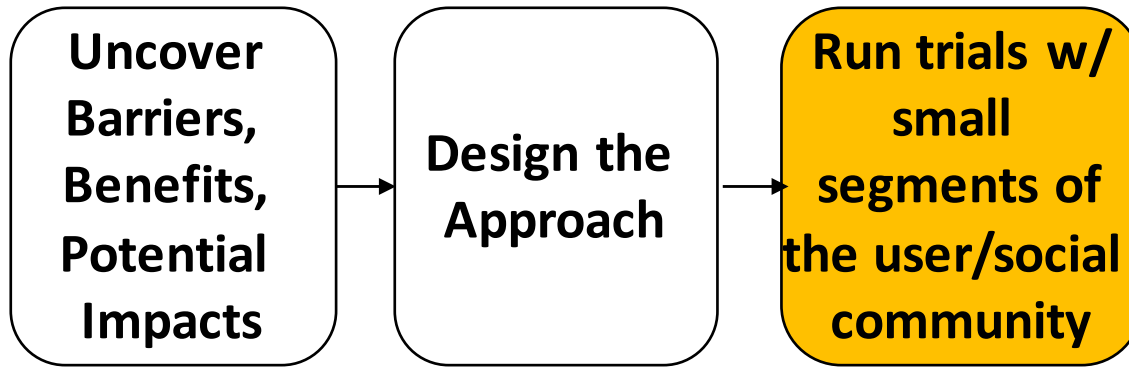


CBSM: Develop Strategies for Selected Behaviors



Derived from: D. McKenzie-Mohr. (2008) and (2009)

CBSM: Trials with small segments of the social community



- User groups
- Stakeholder analysis and Target thought leaders
- Include likely supporters and likely opposition
- Give people access to information before they are forced to make any changes

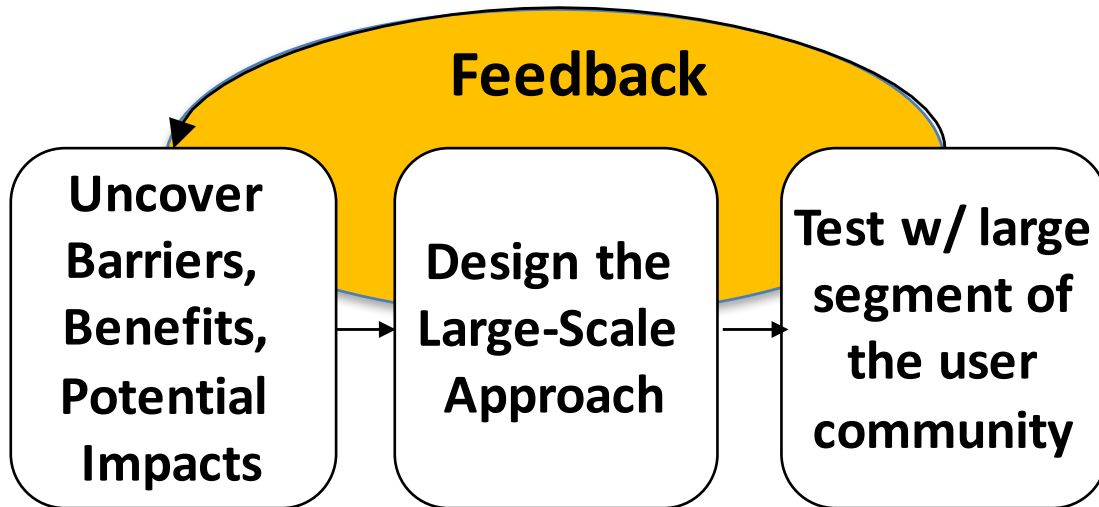


Target
social
networks
first.



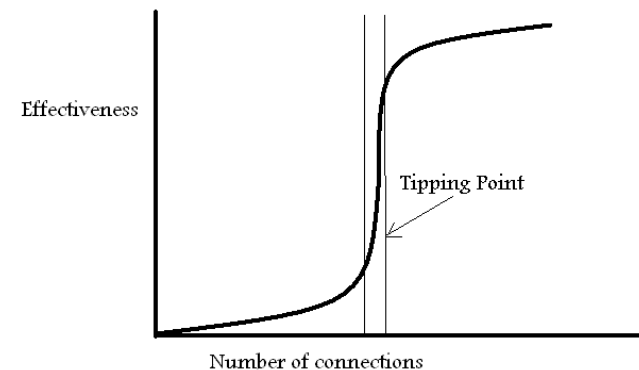
Derived from: D. McKenzie-Mohr. (2008) and (2009)

CBSM: Bring in Learning (Test, Learn, Adapt)



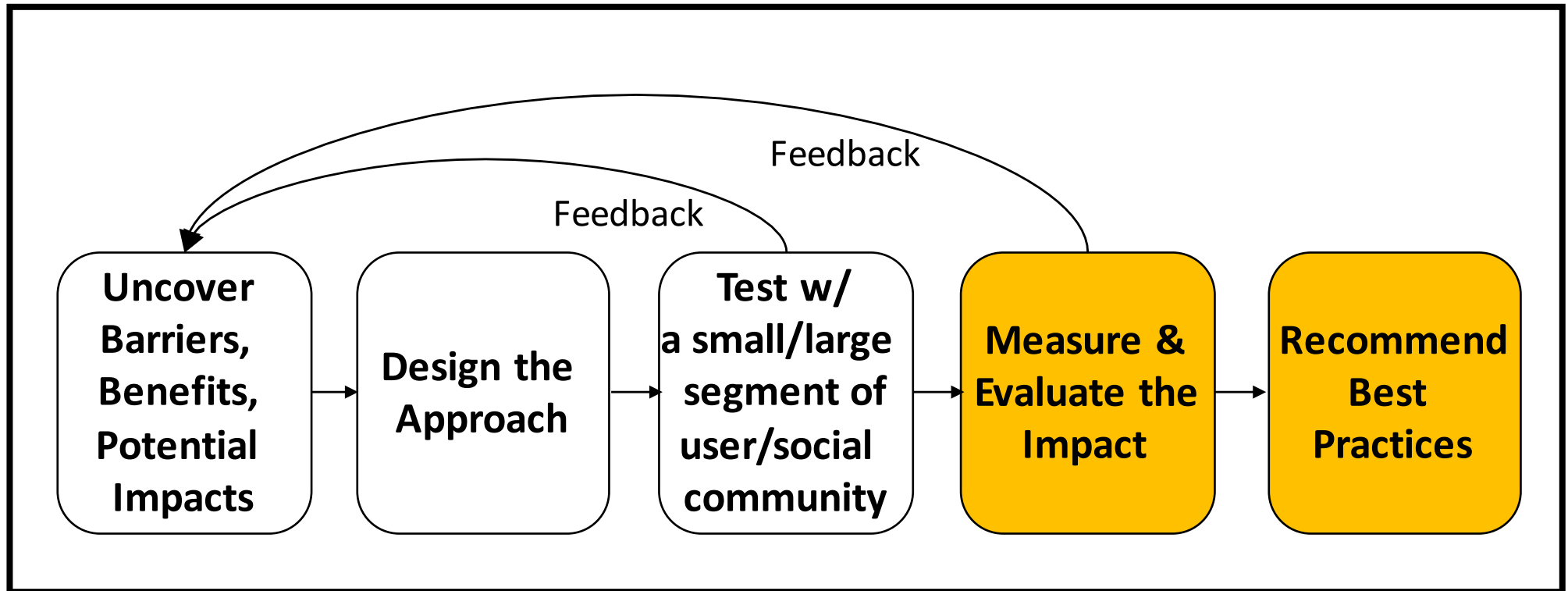
- Test with a larger segment of society
- Try to get a “tipping point” of activity with your trusted messengers:
 - Connectors, Mavens, Salesmen

Tipping Point...Reach that critical mass moment



Derived from: D. McKenzie-Mohr. (2008) and (2009)

CBSM: Follow Up for Each Behavior or Project Component



Derived from: D. McKenzie-Mohr. (2008) and (2009)

Design Successful Approaches:

Selection Tools and Multi-Modal Applications

Multi-Modal Programs

- **Multi-Modal**: Combines several types of approaches in a single program
- **Why Multi-Modal?**
 - No tools work for every behavior and person
 - Research offers little guidance about
 - *When* a tool is most effective
 - *Who* will respond most positively
 - *Types* of behaviors most likely to change

Sources: ACEEE 2013, Schultz 2013

Multi-Modal Recommendations

- **ACEEE**: Stack the tactical approaches from the three families of ACEEE taxonomy (Cognition, Calculus, Social Interaction)
 - Recommend holistic, stacked programs engaging multiple facets of decision-making and behavior
 - Engage emotions, reason, and social interaction
 - Activate multiple complementary drivers of human behavior
 - Hypothesis: Yield deeper, more consistent results

Multi-Modal Programs:

ACEEE Taxonomy

- Cognition: Focus primarily on delivering information to consumers

Source: ACEEE 2013

Multi-Modal Programs: Cognition

- General communication efforts: Traditional mass market channels, such as TV, Print, Billboard
- Targeted communication efforts: Enhanced billing, direct mail, bill inserts, bill redesigns for usability/ comprehension
- Social Media: Facebook, Twitter, Tumblr, blogs, etc. (generally one-way communication)
- Classroom-based education: Teaching and learning in K-12 and higher education
- Training: Commercial, industrial, and other institutional education efforts

Source: ACEEE 2013

Multi-Modal Programs:

ACEEE Taxonomy

- Cognition: Focus primarily on delivering information to consumers
- Calculus: Rely on consumers making economically rational decisions (i.e., practical weighing of risks, benefits, and payoffs to come to an overt decision regarding action)

Source: ACEEE 2013

Multi-Modal Programs: Calculus

- Feedback: Real-time and asynchronous (delayed or indirect)
- Games: Competitions, challenges, lotteries
- Incentives: Cash, rebates, subsidies
- Home energy audits: Free and market rate
- Home energy audits plus: DIY and direct install products

Multi-Modal Programs:

ACEEE Taxonomy

- Cognition: Focus primarily on delivering information to consumers
- Calculus: Rely on consumers making economically rational decisions (i.e., practical weighing of risks, benefits, and payoffs to come to an overt decision regarding action)
- Social Interaction: Tap into deeper human impetus towards sociability and belonging

Source: ACEEE 2013

Multi-Modal Programs: Social Interaction

- Human Scale: CBSM, person-to-person efforts, eco-teams, peer champions
- Online forums: Focused on community-based or peer-to-peer horizontal forums (i.e., user generated content and participation)
- Gifts: Reciprocity: incentives that are up-front and non-monetary

Multi-Modal Recommendations

- **Schultz:** Match the tools of change to the targeted behavior and audience (aka use CBSM)

High Barriers	Incentives Contests/Competitions	Make it Easy Commitments
Low Barriers	Social Modeling Social Norms	Education Feedback Prompts Cognitive Dissonance
	Low Benefits	High Benefits






Source: Schultz 2013

Multi-Modal Recommendations

- **Schultz**: Match the tools of change to the targeted behavior and audience (aka use CBSM)
- Provides an initial framework/starting point for selecting effective strategies
- Practical considerations affecting the final choice:
 - Finance resources (personal touches cost \$\$)
 - Degree of control (changing infrastructure is hard)
 - Time course of program (extrinsic motivators work for short-term behaviors)

Source: Schultz 2013

Example Behavioral Levers

Barrier Category	Example Behavioral Levers
Getting Started	<ul style="list-style-type: none">  Goal-setting and Commitments (get started)  Default, Frame, Anchor, Prime (develop persistence)
Information	<ul style="list-style-type: none">  Clear and Actionable Steps (create actions and habits)  Transparent Feedback: real-time, past, projected (create actions and habits)
Irrational Spending	<ul style="list-style-type: none">  Incentives, Scarcity, and Reminders (get started)

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Multi-Modal Recommendations

**High
Barriers**

Most Challenging / Low Initial Participation / Benefits after Behavior / Extrinsic Motivation (not lasting habits):

Incentives: Desirable consequence following behavior, or undesirable following undesirable behavior
 Contests: Competitions, Games, Lotteries

Already Motivated Audience:

Make it Easy: More convenient, make it the default, reduce uncertainty. Reduce structural barriers.
 Commitment: Written or verbal indication of willingness to engage in a behavior. Best if public, lasting, specific

**Low
Barriers**

Increase Motivation:

Social Modeling: “Initiators” personally engage in the behavior
 Social Norms: Others engage in the behavior
 -Stronger with a close reference group
 -Better to align descriptive and injunctive norm
 -Better for those not already engaged in behavior

Support an existing behavior with already motivated audience:

Education: Instructions for how or when, justifications of importance, attempts to raise awareness. Do not motivate in isolation.
 Feedback: Act as a trigger for already motivated participants
 Prompts: Simple reminders to overcome forgetfulness, place in close proximity, word politely, emphasize correct behavior; best suited to repetitive behaviors
 Cognitive Dissonance: Highlights inconsistency between attitudes and behaviors, Foot-in-the-Door to induce small behaviors first, create attitude, and conclude with large behavior ask. Mindfulness coupled with commitment

Low Benefits

**High
Benefits**

Derived from: Schultz 2013

Multi-Modal Programs:

ACEEE Taxonomy

Category	Behavioral Interventions
<p><u>Cognition</u>: Focus primarily on delivering information to consumers</p>	<ul style="list-style-type: none"> •<u>General communication efforts</u>: Traditional mass market channels, such as TV, Print, Billboard •<u>Targeted communication efforts</u>: Enhanced billing, direct mail, bill inserts, bill redesigns for usability/ comprehension •<u>Social Media</u>: Facebook, Twitter, Tumblr, blogs, etc. (generally one-way communication) •<u>Classroom-based education</u>: Teaching and learning in K-12 and higher education •<u>Training</u>: Commercial, industrial, and other institutional education efforts
<p><u>Calculus</u>: Rely on consumers making economically rational decisions (i.e., practical weighing of risks, benefits, and payoffs to come to an overt decision regarding action)</p>	<ul style="list-style-type: none"> •<u>Feedback</u>: Real-time and asynchronous (delayed or indirect) •<u>Games</u>: Competitions, challenges, lotteries •<u>Incentives</u>: Cash, rebates, subsidies •<u>Home energy audits</u>: Free and market rate •<u>Home energy audits plus</u>: DIY and direct install products
<p><u>Social Interaction</u>: Tap into deeper human impetus towards sociability and belonging</p>	<ul style="list-style-type: none"> •<u>Human Scale</u>: CBSM, person-to-person efforts, eco-teams, peer champions •<u>Online forums</u>: Focused on community-based or peer-to-peer horizontal forums (i.e., user generated content and participation) •<u>Gifts</u>: Reciprocity: incentives that are up-front and non-monetary

Derived from: ACEEE 2013

Behavior Change Science:

A Toolset for Social Behavior Change

Co-Benefits	Motivations (Mostly Behavioral)	Abilities and Needs (Mainly Technology)
Personal	Make the Undesirable Desirable	Much of Willpower is Skill
Social	Harness Peer Pressure	Find Strength in Numbers
Structural	Design Rewards and Accountability	Change the Environment

Table from: Patterson et al (2009)

Behavior Change is complex.

A Toolset for Social Behavior Change

Influence Dimension	Motivators	Behavioral Levers: Enablers and Engagers (i.e. Infrastructure and Triggers)
Individual (Personal Context)	Co-Benefits: Fun Simplicity Comfort Convenience Core/Intrinsic Values Healthy/Safety Sense of Ownership Gain/Fear of Loss	Make it Easy/Desirable: <ol style="list-style-type: none"> 1. Default, Frame, Anchor, Prime (Develop persistence) 2. Goal-setting, Commitments (Get Started) 3. Incentives, Scarcity, Triggers, and Reminders (Get Started) 4. Clear and Actionable Steps (Create action, habits) 5. Transparent Feedback: present, past, projected (Create learning, actions, habits)
Group (Social Context)	Co-Benefits: Social Approval Peer Pressure	Harness Peer Pressure and Support: <ol style="list-style-type: none"> 1. Social Norms (Descriptive = the “what” to do, Injunctive = the “right what” to do) 2. Tailored Messaging (Tell the stories) <ol style="list-style-type: none"> a. Behavioral Modeling and Earned Media b. Trusted Messengers and Word of Mouth c. Comparisons 3. Leverage social structures/Optimize existing social networks

A Toolset for Social Behavior Change

Influence Dimension	Motivators	Behavioral Levers: Enablers and Engagers (i.e. Infrastructure and Triggers)
Structural	Co-Benefits: Ownership Enablement Automation (Unconscious/Habitual)	Change the Environment <ol style="list-style-type: none"> 1. Deliver choice architecture <ol style="list-style-type: none"> a. Design smart defaults b. Design intelligent technology solutions (i.e., automation) 2. Stand up energy contractor networks 3. Provide stakeholder incentive structures <ol style="list-style-type: none"> a. Customer b. Program administrator c. Contractor 4. Locate feedback effectively 5. Design recognition and rewards programs

Behavioral Economics: Summary

- People behave in a way that is inconsistent with standard economics
 - Preferences are fuzzy/liking is based on reality and our brain
 - People construct their preferences
 - Context matters
 - Beware of complex choices
 - Habit formation is the key
 - Prices have lots of implications/understanding benefit does not mean WTP (willingness to pay)
- Sometimes we can model these behaviors and incorporate them into economics
- The reviewed theories capture some of the differences in simple form, but with many implications

Applicability to Conservation Behaviors

- Rational decision making shaped by two factors
 - Abundance of raw data
 - Dearth of meaningful information
- Need to bridge the gap between economical, technological, and psychological approaches to understanding behavior
- Behavior and technology are closely interwoven throughout life
- Role of technology receives surprisingly modest attention in psychology and in policy making

Applicability to Conservation Behaviors, Continued

- Interactive approaches that integrate the behavioral and technological factors have an added value by supporting the design and redesign of technical products, systems, and environments that optimize conservation behaviors and environmental effects.
- To improve our understanding of these interactions four roles of technology were identified:
 - Technology as an intermediary between behavior and conservation outcomes,
 - Technology as an amplifier of human performance and—as side effect—of environmental resource consumption,
 - Technology as a determinant of behavior—shaping and channeling behavior, and
 - Technology as a promoter of conservation motivation and/or behavior.

Behavioral Principles Recap

A Few Real-World Examples

Real-World Example

Behavioral Principle

- **Placebo Effect** → • **Illusion of control**
- **Avoid helmet/seat belt** → • **Neglect of Probability**
- **Campaign advertising** → • **Exposure effect**
- **Costs monthly, benefits yearly** → • **Contrast Effect and Anchoring**
- **Publishers Sweepstakes - “You have won \$1 million dollars”** → • **Loss Aversion**
- **Oral B – “Brush like a dentist”** → • **Authority**
- **Nonprofits - get more donations if include custom return address labels** → • **Reciprocity**



Behavioral Economics

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