



Keep the Change: The Persistence of New Energy Behaviors

Kira Ashby
Behavior Program Manager
Consortium for Energy Efficiency (CEE)
Sacramento, CA
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Agenda

- ▶ Overview of CEE
- ▶ Why is “Keeping the Change” important?
- ▶ CEE Behavior Persistence Research
 - Types of Persistence
 - Early findings from EE
 - Research from other disciplines
- ▶ Areas for future research

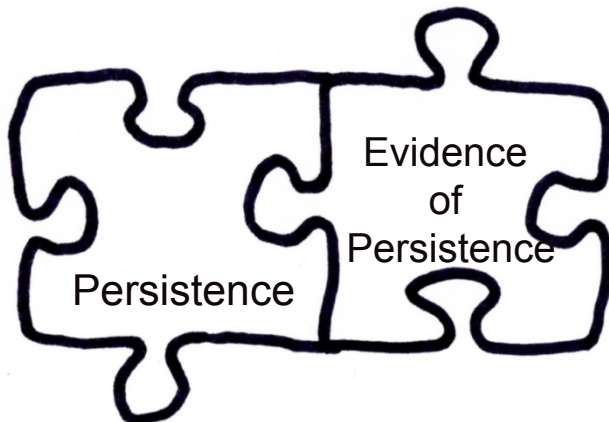


CEE MISSION

As the US and Canadian consortium of gas and electric efficiency program administrators, CEE works to accelerate the development and availability of energy efficient products and services, encourage market uptake, and attain lasting public benefit.

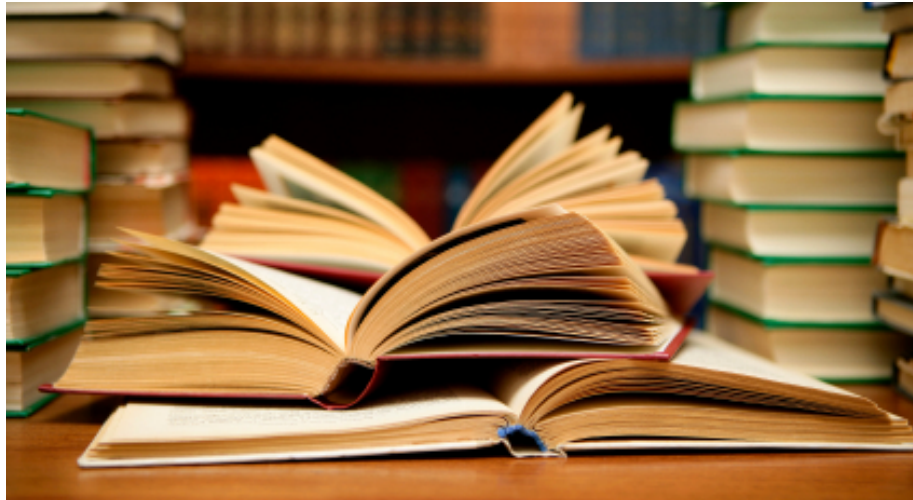
Why does persistence matter?

- ▶ Ability to reach more customers
- ▶ Cost-effectiveness
- ▶ Long-term effectiveness
- ▶ Credibility
- ▶ Resource planning
- ▶ Ability to claim savings



Persistence Research at CEE

- ▶ **Purpose:** provide overview of behavioral persistence research, inform EE efforts, help maximize persistence
- ▶ **Rationale:** Research -> effective approaches for changing behavior
Research -> effective approaches for making behavior last
- ▶ **Approach:** gather research on behavioral persistence (secondary)
- ▶ **Disciplines:** EE, public health, psychology/sociology, transportation safety, sustainability (e.g. recycling), etc.



Research Questions

- ▶ What are the different types of persistence?
- ▶ How long does behavior change last in general?
- ▶ What factors promote persistence?
- ▶ What factors, if any, degrade persistence?



What is persistence?

Three Main Categories of Persistence:

- ▶ Ongoing Persistence: during the program
- ▶ Post-Intervention Persistence: after a program
- ▶ Maintenance Persistence: post-program, but during some continued low-level and infrequent participant engagement



Early Findings from Energy Efficiency

Duration of Persistence

- ▶ In-home display program (by a CEE member in Canada): nearly 100% persistence for first 2 years, 3% decline each year for subsequent 3 yrs.
- ▶ Several feedback-based programs have maintained persistence from 1-2 yrs. post-program
- ▶ Home Energy Reports (more on that in a moment)

Program Characteristics that Foster Persistence

- ▶ Providing feedback
- ▶ Social Norms



1 Program Type, 2 Case Studies

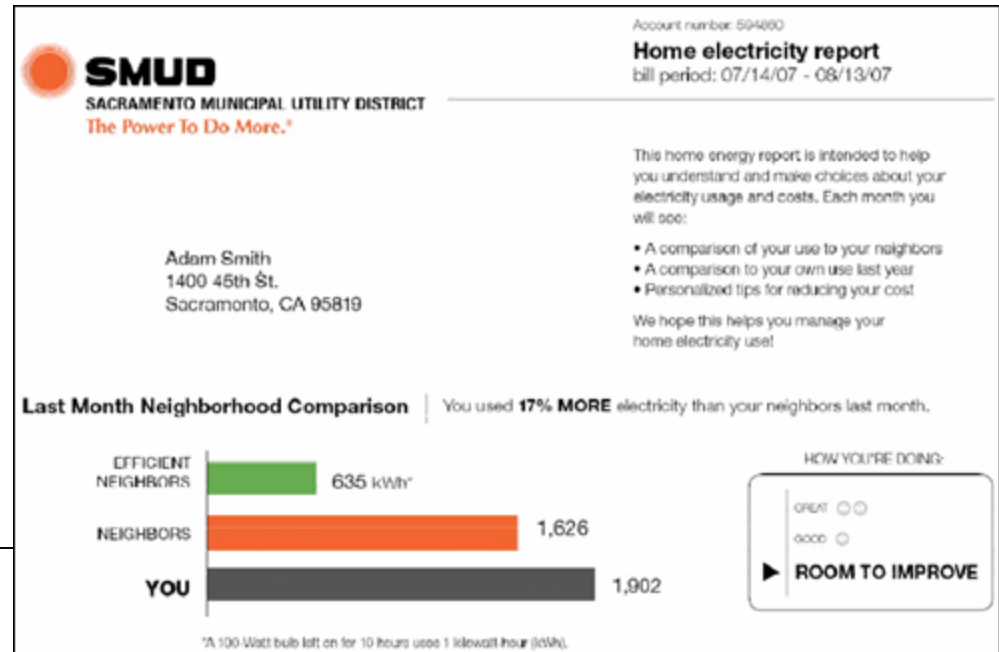
Program Type:

Home Energy Report Programs

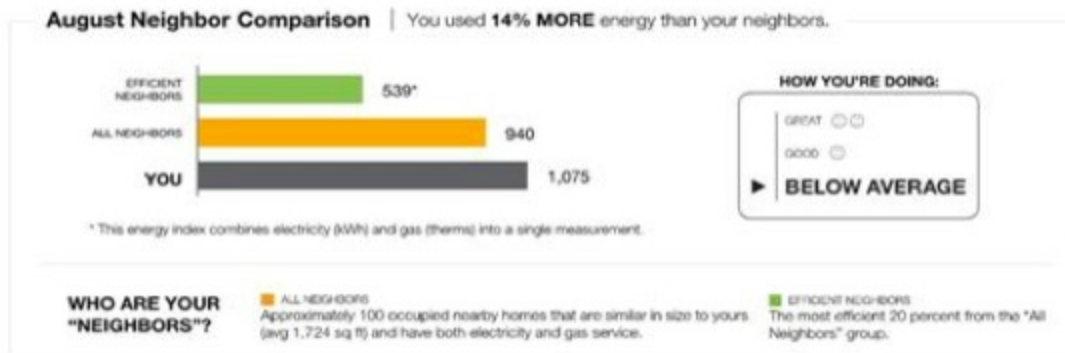
Evaluation: Experimental Design

Program Examples:

- SMUD
- Puget Sound Energy



A4a: PSE sample report



Persistence Research Results

Sacramento Municipal Utility District

- ▶ Savings for at least 4 years of customers receiving reports
- ▶ 67% of the energy savings lasted for at least a year after reports were stopped
- ▶ Customers who stopped receiving reports still saved 1.6% on average for the year following their last report



Information courtesy Bruce Cenicerros, SMUD

Persistence Research Results

Puget Sound Energy

- ▶ Also found savings for 4 straight years of providing reports
- ▶ Savings increased each year while reports continued
- ▶ 61% of the electricity savings and 70% of the gas savings lasted for at least 2 years after reports were stopped



Early Findings: Other Disciplines

Duration of Persistence *(post-intervention)*

▼ *Examples**

- Nutrition/Exercise: up to 1.5 yrs.
- Heart disease reduction: up to 4 yrs.
- Smoking cessation: up to 3 yrs.
- Seatbelt use: up to 2 yrs.

▼ *Overall*

- Meta-analysis of 29 nutrition/fitness studies: 72% achieved persistence
- Importance of habit formation

**these are just examples, not suggesting they're representative of all research*



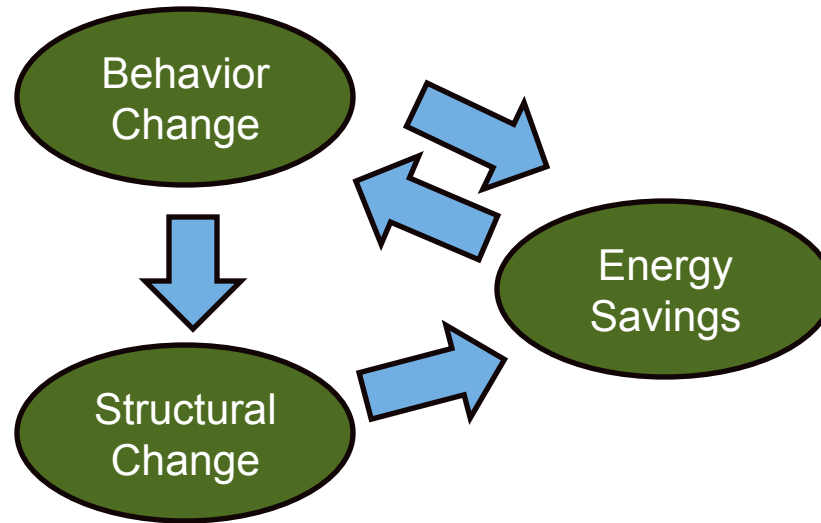
Early Findings: Other Disciplines

Factors Impacting Persistence

- ▶ Social support, face-to-face contact
- ▶ Providing feedback
- ▶ Diverse program approaches/activities
- ▶ Fostering self-efficacy (through goal setting, self-monitoring)



Opportunities for Future Research



- ▶ Potential role of maintenance interventions
 - Frequency, format, content
- ▶ Achieving persistence in different sectors
- ▶ Longer post-program observation periods



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Bruce Cenicerros

bcenice@smud.org

Sacramento Municipal Utility District

Joel Smith

joel.smith@pse.com

Puget Sound Energy



Contact



Kira Ashby

Program Manager, Behavior
Consortium for Energy Efficiency

617-337-9281

kashby@cee1.org