Toward Lasting Behavior Change:
The Challenge of Persistence

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The Problem

Sustainability interventions intended to produce an ongoing behavior change are impactful *only if* the new behaviors persist – and they often don't.
And post-intervention data are often not even taken.
This presentation focuses on how learning principles can help.

(References & contact info in Handout)

The Persistence Problem

Why do researchers find that new behaviors like green commuting often fail to "stick"?

Sample Reasons

Barriers like extra effort

Insufficient reinforcement

Insufficient prompts

Regression to past habits

Failure to generalize/spill over to a new context

Successful methods and two examples follow.

Evidence-based Solutions 1

Take follow-up data and Plan for maintenance

Use variable schedules of reinforcement. Then gradually "thin" them.
Modify other reinforcement schedule parameters (e.g., size)
Gradually remove prompts
Offer a choice to participate
Offer a sound rationale
Focus on more than one behavior
Relatedly: Outcome vs specific behavior focus – outcome can work better
Relatedly: Use indiscriminable contingencies (also one of the benefits of variable schedules)

Evidence-based Solutions 2

Have on-site workers deliver feedback (not researchers)

Make feedback dependent on overall performance rather than individual behaviors

Emphasize positive outcomes and recognize success

Transition to natural consequences (including intrinsic reinforcers)

Natural reinforcers include cost savings from using less heat/AC/water

- or intrinsic rewards like the endorphins from a bicycle commute

Gamification lends itself to tailoring & metrics that can help

Example 1:
Seattle's In Motion Initiative

23,000 participants

Reduce solo car trips/Increase public transit, carpooling, biking

Barriers identified, pledges/free transit card

Individual tracking charts online, weekly reinforcing emails, reminder prompts

Persistence Success!

Typical 20% drop in solo car trips, new habits established

Graph follows after Example 2 summary

"Legacy" is 18 months after intervention end.

Example 2: "Food Dudes" Randomized Controlled Trial

Sometimes tangible incentives are critical for maintenance (Morrill et al. 2016; also Maki 2016, Runnion 1978)

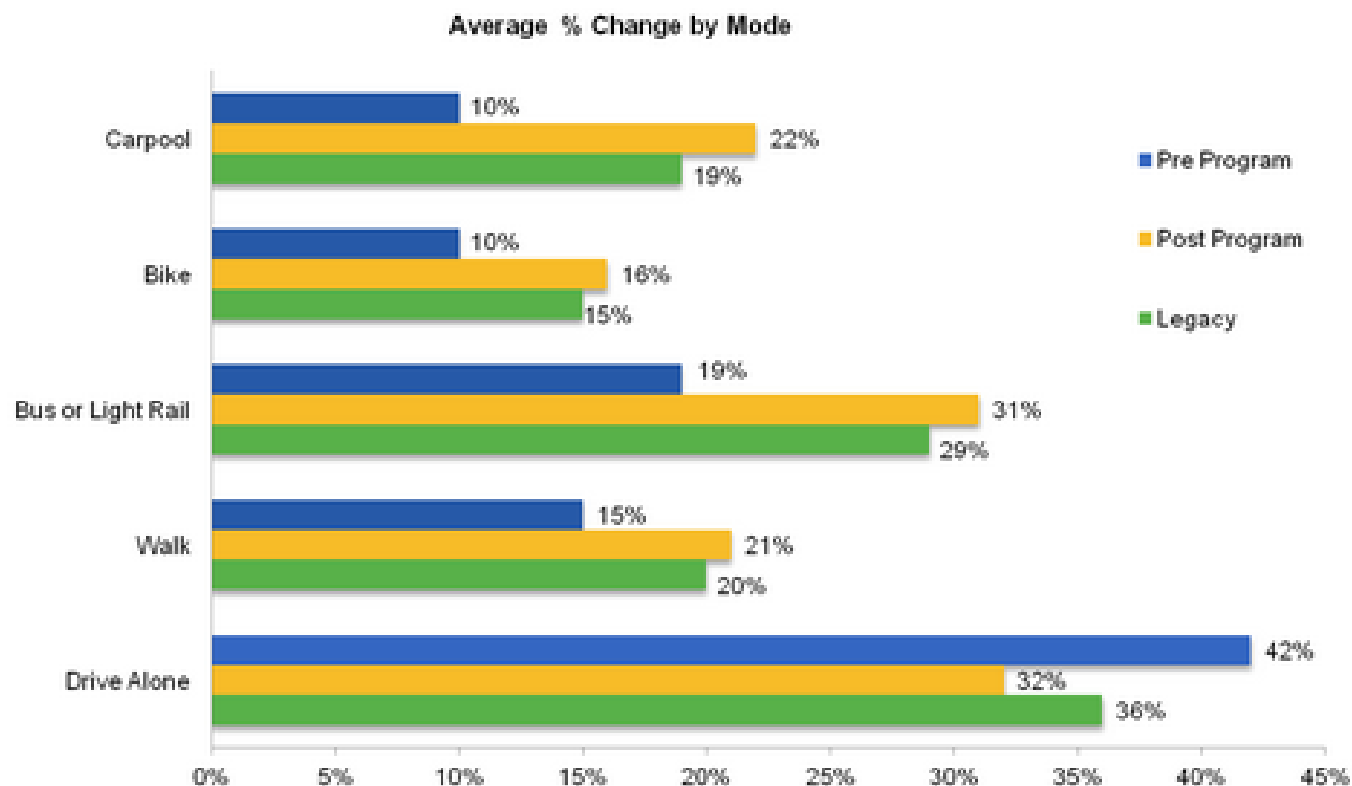Getting children to eat their veggies! (& fruit)

Win-win for nutrition, health, *and* the climate crisis

6 elementary schools, 2292 students

Cartoon models in gamified videos, goals, shaping, teacher praise, parental support. 3 groups. With or without tangible rewards (small toys). 4.5 month intervention, 6 month follow-up
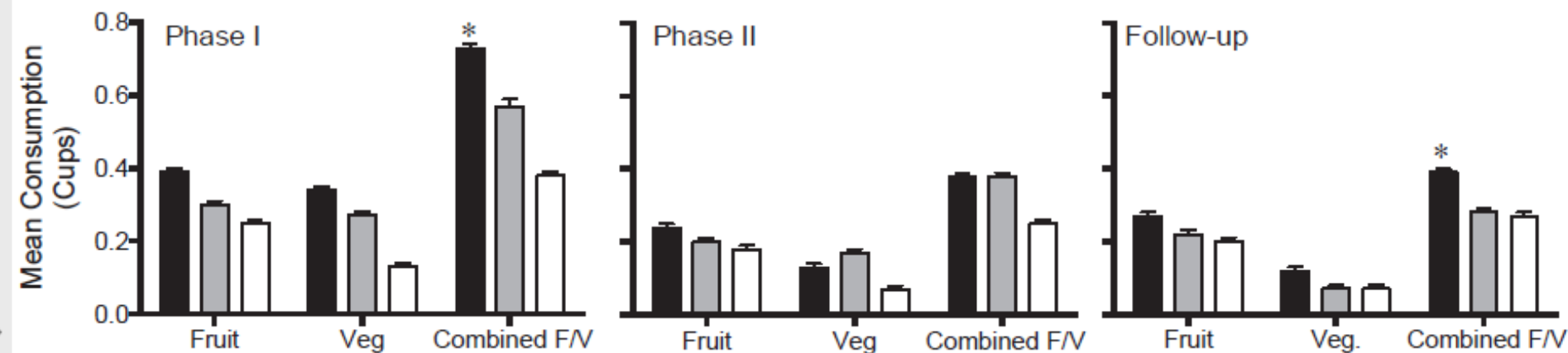
6-month follow-up: only prize schools consumed more than controls, 42.9% difference. Graph follows.

Example 1 Seattle Results:

Average % Change by Mode

Carpool — Pre Program 10%, Post Program 22%, Legacy 19%
Bike — Pre Program 10%, Post Program 16%, Legacy 15%
Bus or Light Rail — Pre Program 19%, Post Program 31%, Legacy 29%
Walk — Pre Program 15%, Post Program 21%, Legacy 20%
Drive Alone — Pre Program 42%, Post Program 32%, Legacy 36%

Legend: Pre Program, Post Program, Legacy

Example 2 Food Dudes

Legend: Food Dudes with Prizes, Food Dudes with Teacher Praise, No-Intervention Control

Phase I, Phase II, Follow-up

Y-axis: Mean Consumption (Cups)

X-axis: Fruit, Veg, Combined F/V

Ultimately, new sustainable behaviors are maintained indefinitely through a variety of processes, e.g.:

Social reinforcers from newly created social norms
Naturally occurring reinforcers of any sort

(including intrinsic)

Naturally existing prompts and other cues

Ideally, establishment of a new habit

Persistence can even require long-term continuation of the intervention (as for Opower).

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We will need a lot more *post-intervention* follow-up data to see not just what works,

but what LASTS.