Developing Theory and Research Driven Applications to Increase Eco-Friendly Behaviors

This poster summarizes a proposed project to research, develop, and release novel web-based tools that will increase participation in environmentally sustainable (eco-friendly) behaviors.

PSYCHOLOGICAL PRINCIPLES BEHIND THE TOOLS
- If people have different obstacles to engaging in the same eco-friendly behavior, a one-size-fits-all intervention will be effective for only a subset of its target population.
- People often are not aware of, or are unable to articulate, their psychological obstacles
- Social motivations can play a significant role in facilitating eco-friendly behaviors.

Based on well researched psychological principles, the tools will:
- "diagnose" users' unique obstacles to eco-friendly behaviors,
- "prescribe" personalized feedback and strategies to clear these obstacles, and
- take advantage of online social environments (e.g., social networking websites) to create social motivations to change behavior (e.g., cooperation, competition, social desirability, and public commitment).

Eco-Space maps attitudes about eco-friendly behaviors onto two-dimensional spaces like those shown below.
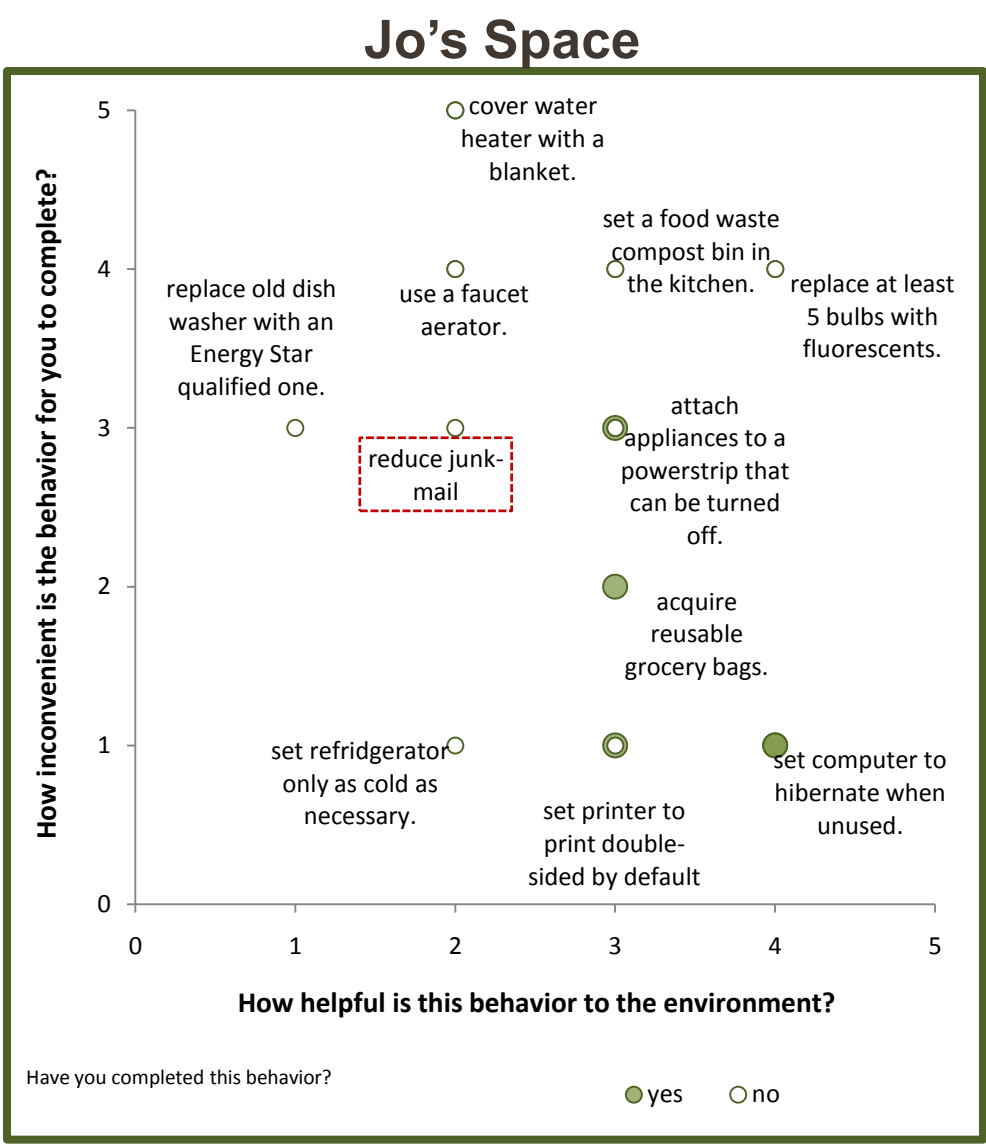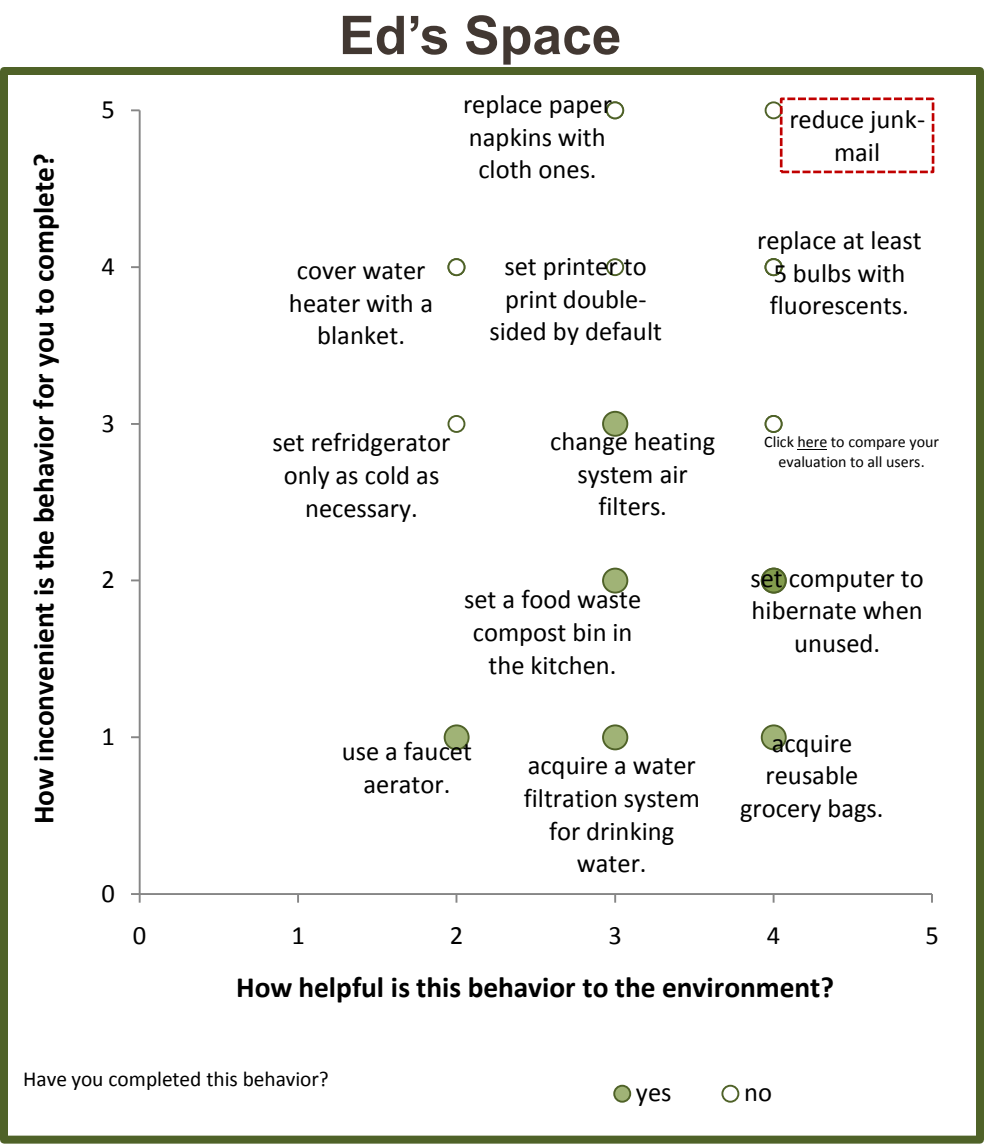
The coordinates of any behavior describes a user's attitudes about its benefits to the environment (x-axis) and its burden to the user (y-axis). For both axes, 1=not at all, 2=slightly, 3=moderately, 4=very, and 5=extremely.

Eco-Space tailors advice based on the coordinates of the behavior.

Tip given to Ed

Removing junk mail can be easy. And better yet, it removes clutter from your mailbox. Here is a Seattle Times article I found that shows you how to reduce all sorts of junk mail:

http://community.seattletimes.nwsource.com/archive/?date=20070926&slug=junkmail26

It includes six links to websites to opt of junk mailing over the internet. It took me less time to opt out of credit card offers permanently than it did for me to shred and recycle them week after week. Still not worth it? The article also contains a list of companies that will reduce your junk mail for you.

Posted by: User123   73% of users found this post helpful

Tip given to Jo

According to 41pounds.org:

-"An average of 41 pounds of junk mail is sent to every adult citizen each year. Approximately 44% of this mail goes into a landfill unopened."
-"More than 100 million trees are destroyed each year to produce junk mail."
-"The world's temperate forests absorb 2 billion tons of carbon annually. Creating and shipping junk mail produces more greenhouse gas emissions than 9 million cars."
-"About 28 billion gallons of water are wasted to produce and recycle junk each year."

Posted by: User 123   39% of users found this post helpful
Source: http://www.41pounds.org/

GreenList capitalizes on the fact that there are some behaviors that need only to be completed once or on very few occasions (e.g., setting the water heater to 120 degrees) for lasting environmental benefits.

GreenList helps users create, monitor, and focus on manageable "to do" lists of such single action behaviors.

Ed's Goal List

To do:
☐ Replace my gas-powered lawn mower. [how?]
☐ Reduce my junk mail. [how?]
☐ Set my refrigerator only as cold as it needs to be. [how?]
☐ Set my thermostat only as warm as it needs to be. [how?]

Example of instructions to replace lawnmower.

Subject: How to replace a gas-powered lawn mower
Recycle your gas-powered mower
1. Drain the gas or oil out of your existing lawnmower.
2. Secure transportation: If your car can't fit your mower, call a friend (maybe one who will want to recycle a mower, too).
3. Mark your calendar: Schedule the date and time you want to send your mower to the local recycling center.
   -The North and South Seattle Recycling & Disposal Stations are open 8am to 5:30pm, 7 days a week.
4. Set a route: Directions to the recycling station can be found here.
5. If you recycle your mower during Northwest Natural Yard Days, be sure to pick up your $25 rebate for a new mower.
Select and purchase an environmentally sustainable alternative
1. Electric versus man-powered: Read up on the pros and cons of both. There are many sites that provide comparisons (e.g., shopwiki).
2. Be an informed consumer. There are many websites that provide reviews and price comparisons for mowers (e.g., howstuffworks).

Posted by: User123
65% of users who completed this task found this post helpful
30% of users reported using this post to complete their goal.
Sources: http://www.seattle.gov/util/Services/Garbage/Recycling_&_Disposal_Stations/RECYCLING_200312011708468.asp; http://www.metrokc.gov/dnrp/swd/naturalyardcare/yard-days.asp; http://www.shopwiki.com/wiki/Lawn+Mowers#Gas+vs.+Electric+vs.+Human-Power; http://products.howstuffworks.com/electric-lawn-mower-reviews.htm

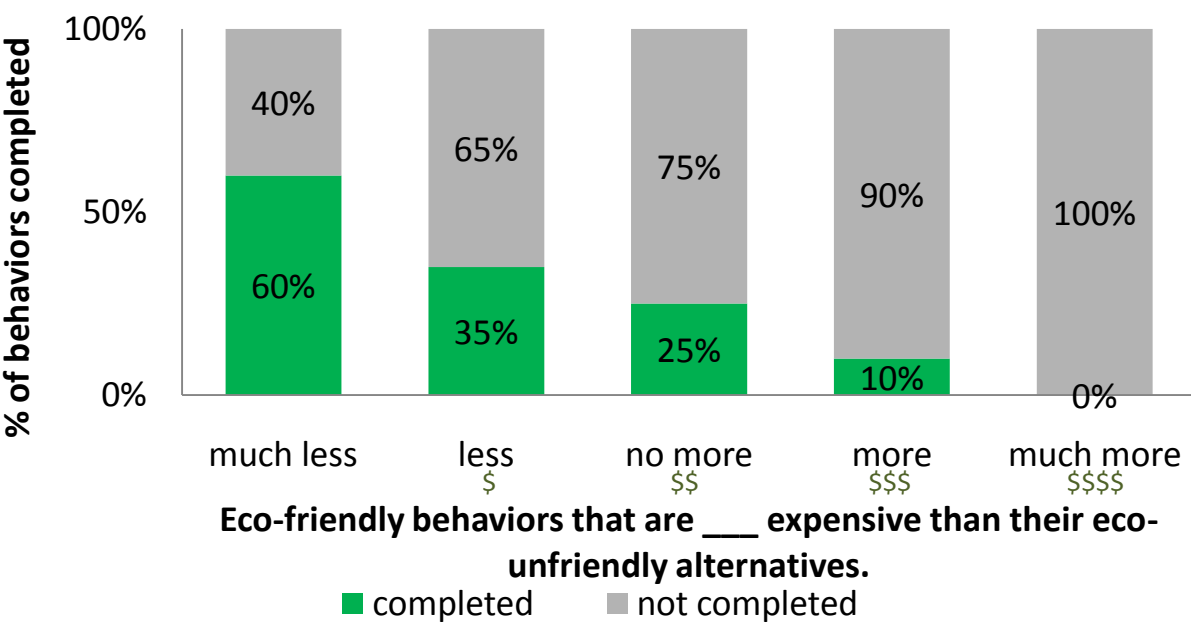Ed's completion of goals in comparison to his friend's.
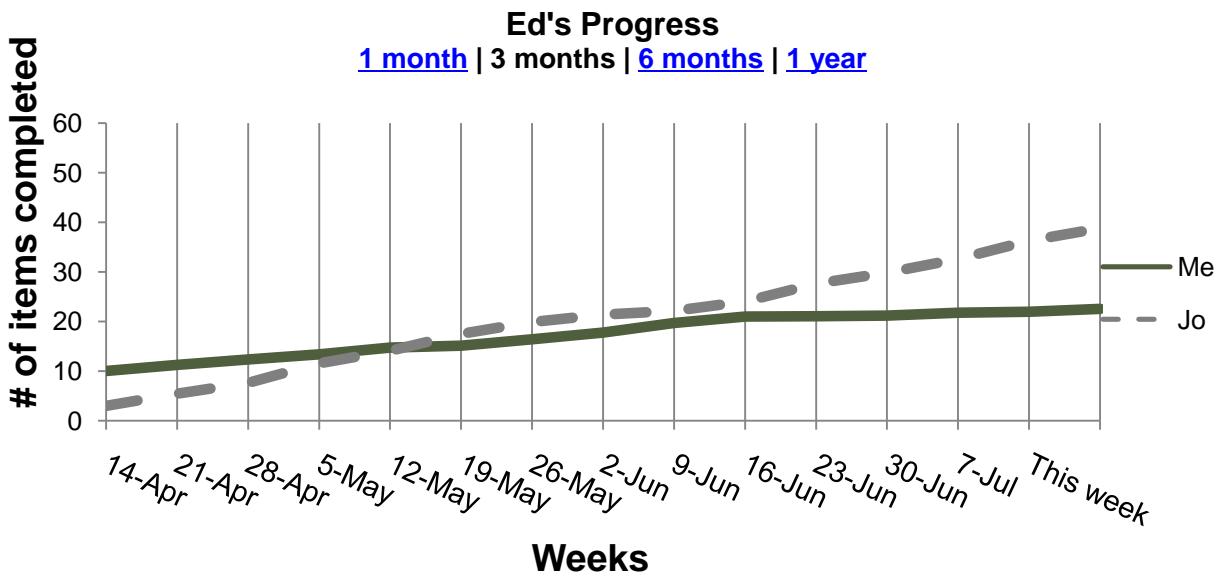
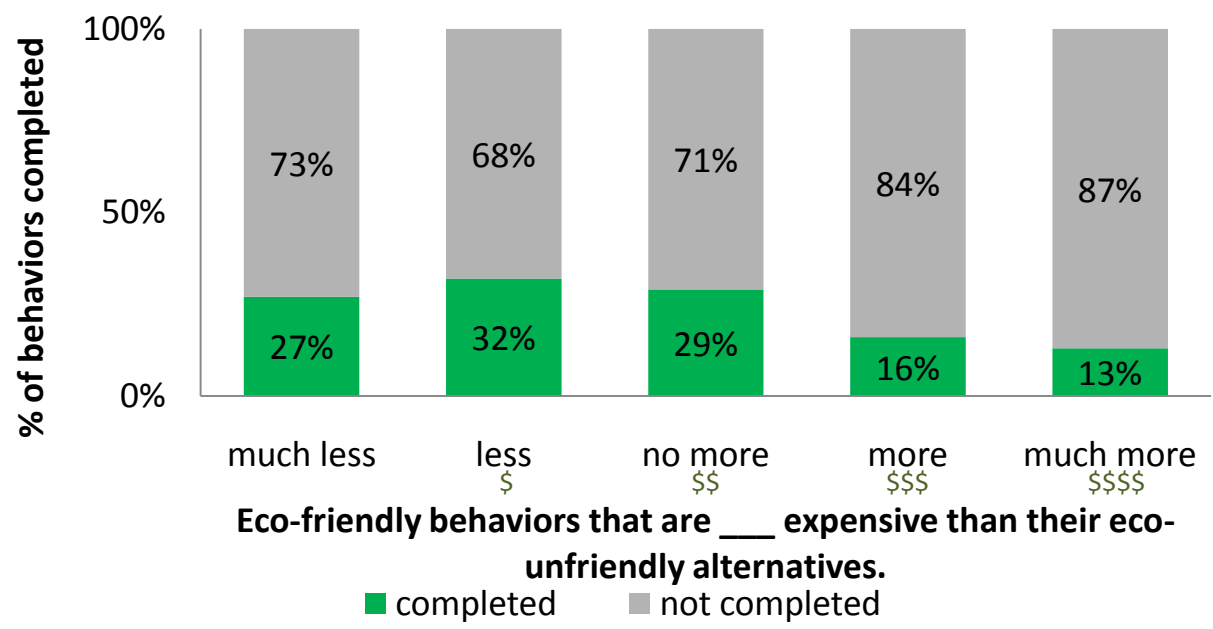Ed's completion of goals in conjunction with his friend's.
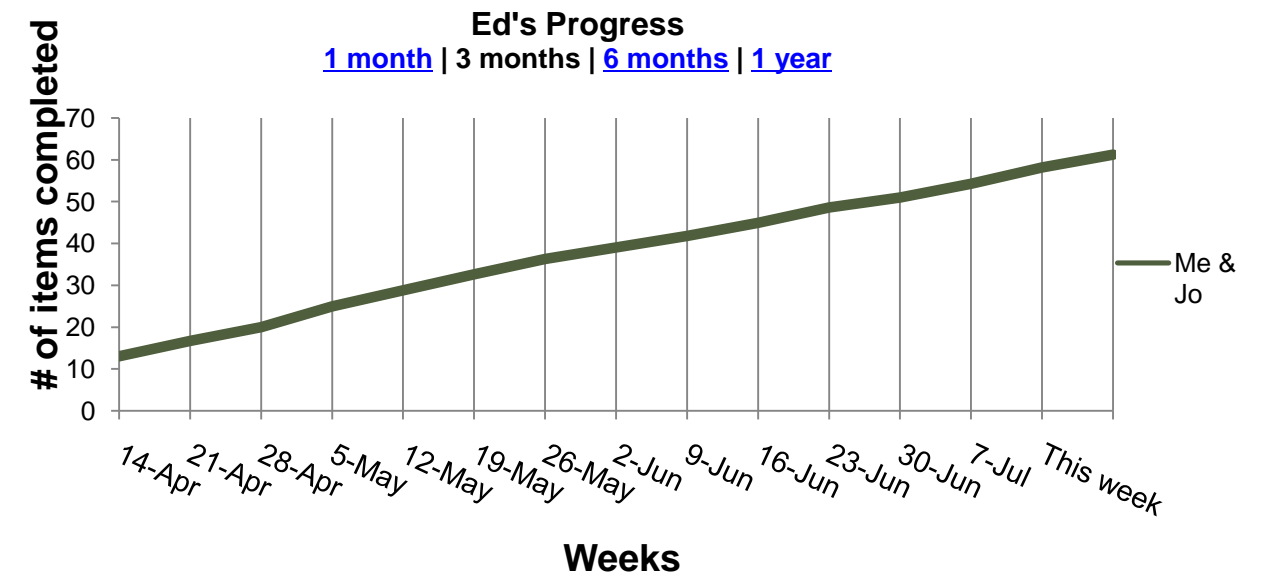
GreenInsight assesses for each user the characteristics of an eco-friendly behavior (e.g., financial cost) that act as obstacles.

The figures above illustrate that *if* a behavior is perceived as expensive, *then* Ed is unlikely to do it. The same characteristic does not influence Jo quite as much.

GreenInsight also tailors feedback to clear obstacles. For instance, the feedback below would more likely be presented to Ed than Jo.

Subject: Grants and discounts for home weatherization

Weatherizing your home is a great way to help the environment, and home improvements can save you money in the future.
The upfront cost of home repair can be costly, but did you know that HomeWise offers free and low-interest home weatherization services for low to moderate income homeowners in Seattle? Check out the site to see if you qualify.

Posted by: User123   12% of users found this post to be helpful
Sources: http://www.seattle.gov/housing/HomeWise/

Subject: Reducing your carbon footprint while saving money

Stopglobalwarming.org has a cool calculator tool that computes your annual carbon savings and resulting cash savings all at once. Check out the site for big savings. If you like some of the actions listed on this site, consider including them on your GreenList so you don't forget to do them.

Posted by: User123   30% of users found this post helpful
Sources: http://www.stopglobalwarming.org/carboncalculator.asp

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Footprint Unpacker "unpacks" one's overall carbon or water footprint to reveal users' unique situation and modality specific carbon footprint, which in turn will help identify each of their personal obstacles to reducing carbon emissions, water consumption, and waste production.

Ed and Jo's waste-reduction behavior patterns
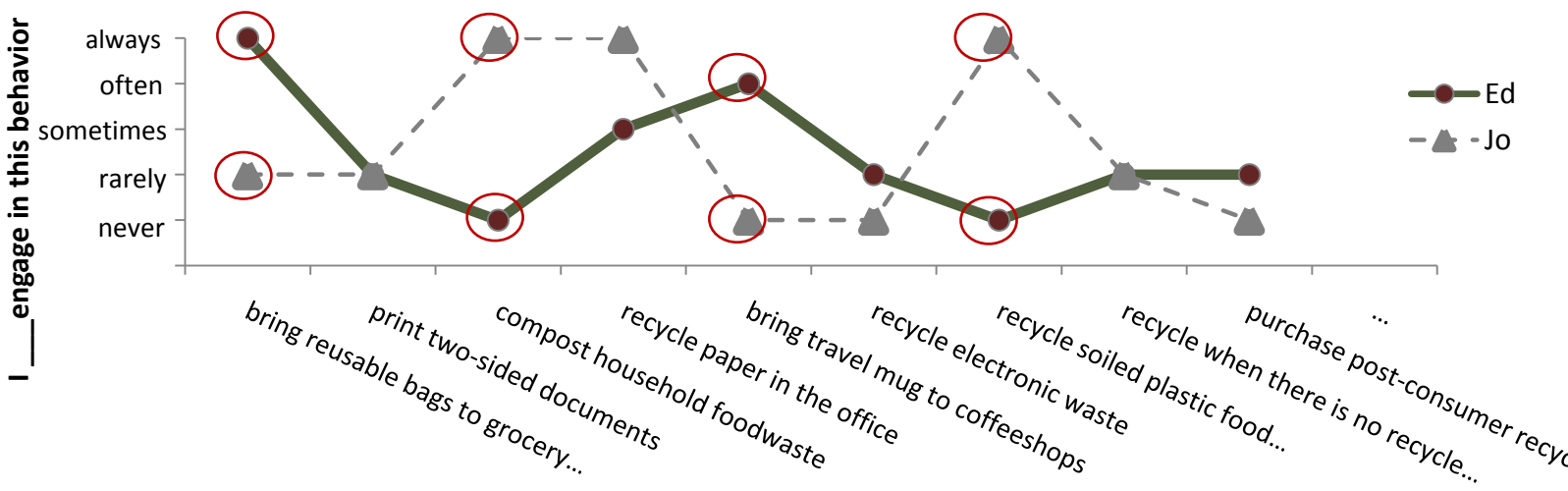
Note that Ed frequently brings reusable bags and coffee mugs to grocery stores and coffee shops, but he infrequently composts household food waste or recycles soiled food containers. Jo has the opposite pattern: she frequently composts food waste and recycles food containers, but she infrequently carries reusable bags or mugs.

- Differences in behavior patterns may reflect different situational roadblocks to eco-friendly behaviors.
- Footprint Unpacker identifies the influence of situational barriers to eco-friendly behaviors on each user. (e.g., "messiness" may impede Ed's waste reduction. Carrying, or having to remember to carry, a reusable alternative to disposable goods may impede Jo's waste reduction.)
- Using an algorithm based on multilevel modeling, Footprint Unpacker identifies the influence of situational obstacles to eco-friendly behaviors.
- Footprint Unpacker tailors feedback to remove the obstacles.

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