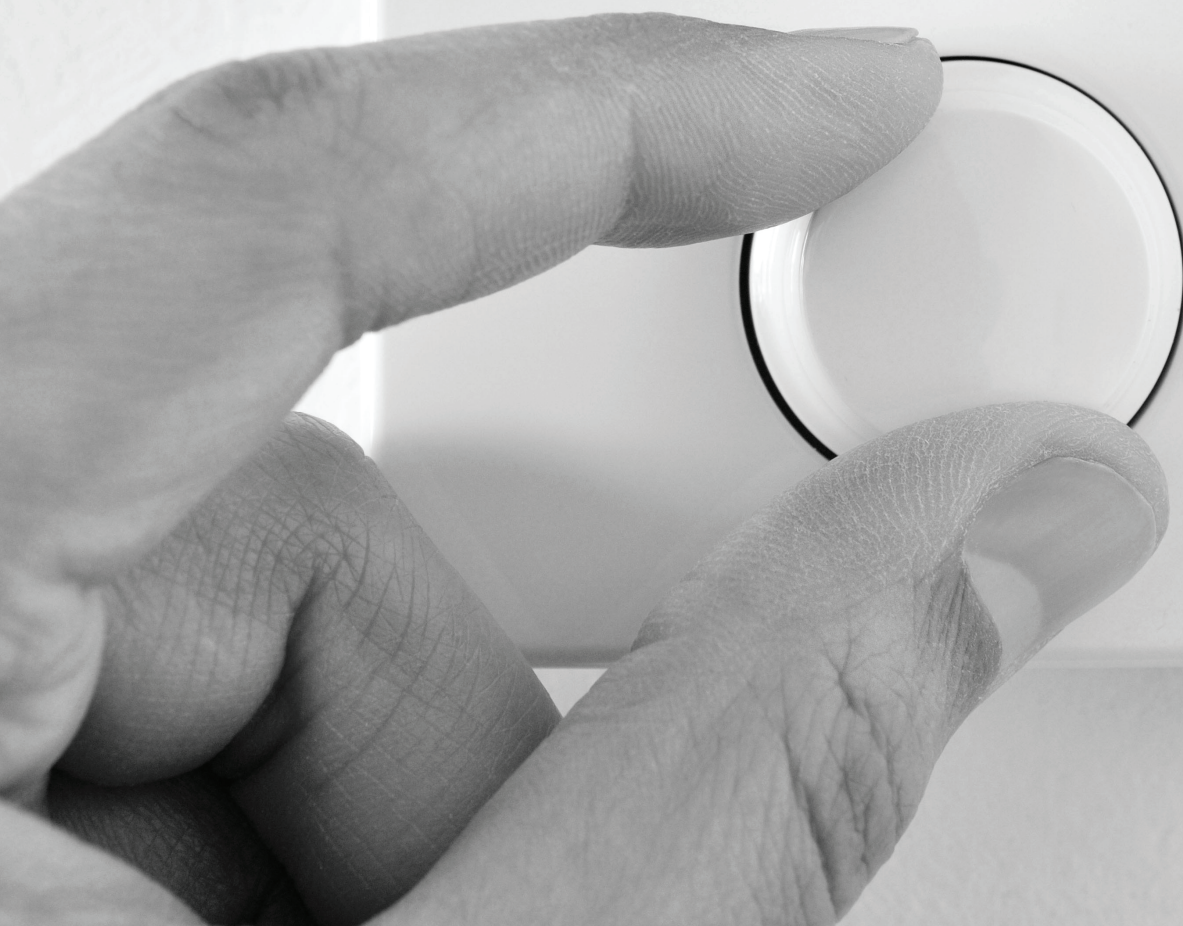20 C° ECO

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How to encourage pro-environmental behaviors without crowding out public support for climate policies

Kaitlin T. Raimi

abstract

Utilities, governmental agencies, and nonprofit organizations all use interventions meant to spur the public to act in ways that reduce greenhouse gas emissions, such as by turning down the heat in the winter and limiting beef consumption. Yet critics contend that these interventions promote relatively trivial behaviors while reducing the perceived need to support regulations that would have much more of an effect but might require, say, increased taxes or effort. In other words, promoting behavioral interventions can crowd out the public's support for climate policies. But this undesirable consequence is avoidable. In this article, I propose evidence-based guidelines, which I collectively call the *SESH formula*, for implementing climate-related behavioral interventions that avoid crowding out support for effective policies. They hold that interventions should (a) push for *specific* high-impact behaviors, (b) accurately convey the behaviors' *effectiveness,* (c) promote behaviors that are *similar* to (that is, are clearly related to) desirable policies, and (d) frame the desired behaviors as steps toward a *higher* goal—in this case, climate-change mitigation. I review the evidence for each SESH guideline and identify areas for future research into behavioral interventions that will complement, rather than undermine, climate-change policies.

Core Findings

What is the issue?
Interventions aimed at encouraging pro-environmental behaviors can sometimes have unintended consequences. Crowding out will occur when an intervention diverts people's attention away, in part or in full, from more effective, traditional climate change policies. The problem is particularly acute when the behavioral intervention is relatively low effort yet much less effective, while the traditional policy is high effort—such as requiring taxation—and effective.

How can you act?
Selected recommendations include:
1) Breaking down abstract instructions for people into specific, concrete recommendations
2) Accurately conveying the magnitude of a behavior's impact
3) Increasing the perceived similarity between target behaviors and key policies
4) Emphasizing that target behaviors are part of a larger goal

Who should take the lead?
Policymakers, organization leaders, and researchers on environmental issues

People who are concerned about climate change may be prompted to adopt climate friendly behaviors if they are given a *nudge* in that direction—a slight push that does not limit their freedom of choice. For instance, receiving household utility bills that indicate how the household's energy use compares with that of the neighbors may motivate homeowners to turn their heat down during the winter, which will reduce the burning of fossil fuels and thus the emission of carbon dioxide and other climate-warming gases. Or seeing emissions ratings on new-car labels might prod a buyer to select a more fuel-efficient vehicle. Behavior-based climate interventions such as these have been touted as cost-effective ways to reduce greenhouse gas emissions and circumvent the political gridlock that has prevented the adoption of large-scale policies.[1] Not surprisingly, then, government policymakers, utilities, and nonprofit organizations increasingly rely on these approaches. But the efforts have critics as well as supporters.

Even the most effective behavioral interventions can achieve only a fraction of what might be accomplished by a classic climate policy—such as the imposition of a tax on the carbon in fossil fuels or the regulation of greenhouse gas emissions from power plants.[2,31] Further, efforts to expand such traditional climate policies have stalled in the United States, and critics fear that adopting simpler behavioral interventions may divert attention from and even crowd out public support for climate policies.[4,5] *Crowding out* (sometimes called *negative spillover*) is a well-studied phenomenon in which motivation to take one action diverts attention from and diminishes interest in another action.[6–8]

Crowding-out effects are often small.[92] Even so, they are best avoided given the dire risks of climate change. Fortunately, crowding out is not inevitable. *Interveners*—my word for anyone conducting an intervention, whether they be researchers, policymakers, or others—[1]can use several tactics to avoid it. These tactics include being selective about which behaviors to pursue and strategically communicating their merits to a target audience. In this article, I introduce the *SESH formula*. This acronym represents the recommendation that interventions should (a) push for *specific* high-impact behaviors, (b) accurately convey the behaviors' *effectiveness*, (c) promote behaviors *similar* (that is, related) to desirable policies, and (d) frame desired behaviors as steps toward a *higher* goal. I then define these four guidelines of the formula, describe the evidence behind them, and highlight opportunities for future research.

Many researchers have demonstrated that behavioral climate interventions can crowd out policy support. This is the first article to propose evidence-based, practical guidelines for avoiding this crowding-out phenomenon. (See Table 1.)

Push for Specific High-Impact Behaviors

People who want to reduce their carbon footprint face a dilemma. They will find plenty of suggestions about actions they can take, but they will not receive much guidance on which ones have the greatest impact. Given this quandary, people tend to choose behaviors that seem either easy or important.[10] They may end up acting in a way that does little to mitigate climate change, such as turning off lights whenever they leave a room, and they may overestimate the impact of that activity.[11–15] Interveners cannot simply nudge people toward climate-friendly behaviors and assume that they will try them all or that they will choose the most effective options. Worse, people taking an action may be less likely to support policies that would have a greater effect on the climate, which means these individual behaviors could result in a net increase in emissions.

Instead, interveners must select target behaviors carefully, choosing ones that have as high an impact as possible. One factor in impact calculation is the extent to which greenhouse gas emissions might be reduced by adopting a particular behavior, such as reducing beef consumption.[16,17] (The beef-production process results in large emissions of climate-warming gases into the atmosphere.) Interventions must

Table 1. SESH cheat sheet: Avoid crowding out climate policy support with behavioral interventions

Initial	What to do	How to do it
S	Push for **specific** high-impact behaviors.	• Pick a small number of target behaviors. • Choose target behaviors that are likely to have the most impact and are most likely to be adopted. • Be specific in telling the audience what behaviors to perform.
E	Accurately convey the behaviors' **effectiveness**.	• Inform the audience that behavior interventions cannot solve climate change on their own. • Tell the audience how a target behavior's effectiveness compares with that of other approaches.
S	Promote behaviors **similar** to desirable policies.	• Choose target behaviors that self-evidently relate to key policies (for example, both help to reduce energy consumption). • Pretest to see whether the audience perceives these behaviors as being related to policies. • Spell out how these behaviors are related to policies.
H	Frame desired behaviors as steps toward a **higher** goal.	• Draw attention to an audience's successes at changing behavior, which will enhance people's confidence in their ability to take actions to protect the climate. • Communicate to the audience that target behaviors and policy support both serve the higher order goal of climate-change mitigation.

also target behaviors that people are able or willing to adopt. For example, carpooling can potentially save a lot of fuel, but getting people to do it has proved extremely difficult.[2] Fortunately, researchers have identified behaviors that have a high impact and that people are also willing to do.[2,18,19] These include driving fuel-efficient vehicles, weatherproofing homes, and installing energy-efficient heating and cooling equipment. However, similar research has not been done on interventions that might alter other behaviors that have a substantial effect on the climate, such as flying.[18]

Targeting high-impact behaviors is not sufficient by itself, though. Interveners must also be specific about what they want people to do and communicate this information clearly. For example, instead of telling people to save energy by weatherproofing their home (a vague admonition that could be interpreted in a number of ways), interveners should instruct people to install insulation having a rating of R-38 or higher in their attics. By breaking down abstract instructions into concrete recommendations, interveners can avoid confusion and increase the likelihood that their target audiences will

"people tend to choose behaviors that seem either easy or important"

believe themselves capable of acting on the recommendations.[20]

By focusing efforts on a select group of meaningful behaviors and clearly communicating the exact behaviors being recommended, interveners can maximize the climate-mitigation impact of behavioral interventions. Even if behavioral nudges toward the desired actions crowd out policy considerations for some people, focusing on high-impact behaviors helps ensure that those actions will still have a beneficial effect on the climate.

Accurately Convey the Behaviors' Effectiveness

People motivated to change their behavior because of climate change often overestimate

"geoengineering alone cannot solve climate change"

the impact of small behaviors. Even policymakers sometimes believe that relatively low-impact behavioral interventions, such as changing the default option so that households automatically receive electricity from renewable sources, are as effective as high-impact policies, such as carbon taxes.[6] Such misconceptions can crowd out support for effective policies by leading people to conclude that the behaviors are so effective that they obviate the need to support large-scale policies.

Recent experiments demonstrate this phenomenon. In an online experiment, participants who were told about a behavioral intervention that linked utility customers to renewable energy sources reduced their support for a carbon tax.[6] Yet when researchers explicitly told participants that their switch to a renewable energy source would reduce carbon emissions only a small amount, this crowding-out effect was erased. Similarly, another experiment found that crowding-out effects were strongest when people thought voluntary energy savings made sufficient progress toward climate goals.[8]

These findings clearly indicate that to minimize crowding out, interveners must accurately convey the magnitude of a behavior's impact. Imagine, for instance, an infographic showing that insulating attics saves more energy than turning off lights but also that a carbon tax would be more effective than either of these voluntary approaches.

Behavioral interventions are not the only actions that can crowd out support for important climate policies. Scientists worry that when people learn about *geoengineering*—the deliberate manipulation of the climate to lessen the consequences of climate change (such as by injecting cooling particles into the atmosphere)—their support for more traditional emissions-reducing policies will be undermined. As with behavioral interventions, this geoengineering crowding-out effect can be reduced or eliminated simply by telling people that geoengineering alone cannot solve climate change.[21]

One cautionary note: Because people are more likely to support and adopt behavioral interventions if they think those interventions are effective,[22,23] informing people about the relative ineffectiveness of behavioral actions could theoretically undermine people's willingness to undertake them. However, research shows that, at least with climate change, providing information about the small impact of a behavioral nudge does not appear to weaken public support for it.[6] Thus, telling people these interventions are not as effective as traditional climate policies appears to prevent the crowding-out effect on policy support without undercutting support for behavioral approaches.

Researchers still need a better understanding of the most effective ways to convey magnitude information to audiences. It would be useful, for instance, to test whether people are more convinced by messages that provide concrete numbers about impacts or by qualitative messages that speak of relative impacts. Whichever method interveners choose, they should be careful to convey to audiences the reality that behavioral interventions are a step in the right direction toward climate goals but cannot replace large-scale policies.

Promote Behaviors That Are Similar to Desirable Policies

Crowding out is less likely to occur when two actions seem similar or are closely related along some dimension. A recent meta-analysis (a study that combines data from multiple studies) found that when people were asked to do one pro-environmental behavior, their intentions to do a second action increased greatly when the two behaviors were very similar (for example, buying energy-efficient light bulbs and buying energy-efficient appliances).[9] Other researchers have confirmed that the more similar two environmentally friendly behaviors are, the more likely it is that someone who does one will also do the other.[24–26] This pattern may hold true for behaviors and policies as well, such that behavioral interventions that seem to be aligned with

an environmental policy effort could actually increase support for that policy. For instance, people motivated to buy a fuel-efficient car may be more likely to support government fuel efficiency mandates on the automobile industry. The converse relationship also appears to hold true: Researchers have shown that promoting behavioral interventions that were dissimilar in some way to a policy crowded out support for that policy (for example, promoting plastic recycling among college students undermined their support for a campus nature-preserve fund).[7,9]

Studies like these tend to rely on researchers' concepts of similarity, but perhaps the target audience's perception of similarity is even more important.[27] This distinction is key, because experts and nonexperts perceive climate-related behaviors differently. Experts often categorize climate-related behaviors by their effectiveness or frequency of use; however, laypeople tend to categorize them in terms of their health effects or even by the room of the house in which they occur.[14,15] Further, laypeople may judge similarity on factors such as how difficult actions are to carry out or by their categories—for example, transportation, energy consumption, or purchasing.[28,29] In short, interveners should not assume that their audience will share their perceptions of similarity. Researchers can aid in efforts to match the goals of interventions with the goals of policy by gaining more insights into which behaviors laypeople see as similar to key policies: Most existing work focuses on the similarity among behaviors but not between behaviors and policies.

In any case, interveners can help their audience appreciate the similarity between recommended behaviors and policies by highlighting the shared attributes of both (such as when both reduce greenhouse gas emissions or conserve energy) and thus the ways that recommended behaviors and larger policies support the audience's underlying values.[30] In addition, highlighting the shared attributes of behaviors and policies may help to clarify the effectiveness of the behaviors, as the previous guideline recommends.

Interveners can take a number of actions to increase the perceived similarity between target behaviors and key policies. First, they can choose behaviors that they think audiences will most readily perceive as being similar to key policies. For instance, if a carbon tax is the desired policy, then interventions can target related behaviors, such as voluntary purchases of low-carbon electricity sources. Second, interveners should run pilot studies to test which behaviors their particular audience sees as being most similar to key policies. Finally, interveners can explicitly tell audiences how these behaviors and policies are connected. For example, if a carbon tax is the highest priority policy, then household energy efficiency should be described in terms of the carbon saved.

Thus, by targeting behaviors that audiences perceive as being similar to key policies and also highlighting that similarity to the audience, interveners can prevent behavioral interventions from crowding out support for those policies. Beyond reducing crowding-out effects, this approach might, in some cases, even help elevate policy support above baseline levels.

Frame Desired Behaviors as Steps Toward a Higher Goal

When people see the achievement of small goals as a way to advance toward a higher goal, they are more likely to treat these smaller actions as complements to one another rather than as substitutes.[31,32] In addition, viewing small goals in terms of higher order values can help motivate further actions and prevent backsliding.[33] Thus, when people perceive two behaviors as working together toward a higher, valued goal, they are more likely to follow through on both.

Moreover, converging evidence suggests that the framing of goals matters with regard to crowding-out effects. Interventions that use environmental appeals to change household behavior (such as those that encourage buying energy-saving appliances) can lead people to support environmental policies even more than they otherwise would, whereas appeals that emphasize monetary savings (such as via reduced energy bills) can end up crowding out

Nudge
A slight behavioral push that does not limit people's freedom of choice

Crowding out
When motivation to take one action diverts attention from and diminishes interest in another action

Geoengineering
The deliberate manipulation of the climate to lessen the consequences of climate change

of policy support[34] or at least failing to boost climate policy support.[35] This pattern may occur because people can easily understand that a behavior done for environmental reasons serves the same goal as environmental policies, but they have a harder time seeing how an economic choice relates to environmental policies.

Research thus indicates that interveners can prevent crowding out of policy support by emphasizing that target behaviors are part of a larger goal. By all means, interveners should celebrate what people are doing right: Drawing attention to accomplishments can increase people's beliefs that they are capable of performing climate-mitigation behaviors, which can in turn lead to more action.[28,36] But interveners should also convey that these little victories are part of a bigger push for climate-change mitigation.

It is important to be explicit. Interveners should not assume that members of their audience, by themselves, will recognize that recommended behaviors and government policies fulfill the same greater goal. Instead, interveners need to spell out for their audience that target behaviors and policies serve the same higher order goal of mitigating climate change. For example, interveners should frame household energy savings as combating climate change in the same way a carbon tax does. Interveners, particularly those in the United States, sometimes avoid mentioning climate change for fear that members of their audience may reject climate science.[37] But the proportion of the U.S. population that is deeply worried about climate change has grown,[38] which makes it increasingly reasonable to explicitly highlight this goal.

Conclusion

Any behavioral intervention related to climate mitigation, no matter how well designed, has the potential to crowd out support for climate policies. Therefore, researchers should continue to evaluate whether interventions cause this effect, to ensure that interventions do not cause more harm than good. Meanwhile, by applying the SESH formula—targeting specific high-impact behaviors, conveying their effectiveness, and communicating that behaviors are similar to and serve the same higher climate goals as policies—interveners can minimize the risk that crowding out will occur and can thereby maximize their interventions' beneficial effects on climate change.

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