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Less is more in energy conservation and efficiency messaging

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ABSTRACT

Campaigns aiming to encourage people to reduce their energy consumption frequently make three well-intentioned but inadvertent mistakes in their communications strategies. These mistakes are driven by a deeply embedded yet often counterproductive popular intuition: that 'more is better.' We identify three messaging pitfalls that can result from this assumption, namely that a message will be more persuasive if it emphasizes the greatest number of people engaging in undesirable behavior, the greatest number of victims of such behavior, and the greatest number of reasons why one should adopt particular energy conservation and efficiency measures. We cite experimental evidence demonstrating that these strategies can in fact reduce the persuasive power of a message, and review several underlying psychological mechanisms that may explain these counterproductive effects. Finally, we provide a number of alternative messaging strategies that are likely to improve the performance of energy conservation campaigns.

1. Introduction

Given indications that behavioral habits are the most important determinant of variations in household energy use (Chen et al., 2015), targeting consumption behaviors and the latent `behavioral capital' that lies therein (Beretti et al., 2013) should be an important element of climate change mitigation strategies. In order to accomplish such objectives, governments and environmental groups often use information campaigns to persuade people to reduce their energy consumption by engaging in either energy conservation or energy efficiency measures.[1] Emerging empirical evidence suggests that these campaigns may be flawed due to three common, but inadvertent, messaging mistakes that recent experimental evidence has shown to lead to counterproductive effects. The degree to which their underlying intuition is embedded in the collective popular wisdom means that these messaging strategies are not only pervasive and resistant to change, but also go quite unnoticed, and therefore represent a uniquely problematic and underestimated issue when it comes to energy conservation objectives.

Each of the mistakes we outline can be seen as a manifestation of a shared intuition: that more is better. In what follows, we explain how this assumption can be detrimental to the objectives of persuasive messaging related to energy use, and argue that messaging strategies should be informed not by intuition, but by empirical evidence regarding their behavioral impacts. First, we provide an overview of several prominent behavior change theories and situate the role of information campaigns within these theoretical frameworks. We note that messaging campaigns are often designed based on a key assumption of rational choice theory: that information will be processed in a rational way through deliberative cognitive processes. This framework generally overlooks the existence of heuristic decision-making processes and the fact that these processes can bypass analytical, deliberative processes. Messaging interventions designed using the framework of rational choice theory can therefore produce unanticipated and sometimes counterproductive behavioral impacts. In each of the subsequent sections, we present a counter-intuitive mistake in intervention design that inadvertently exploits some heuristic process, describe the underpinning psychological mechanisms that may be at play, and provide some practical suggestions for how to avoid the mistake in question. Namely, we address the social norm effect, the identifiability bias effect, and what we call the 'too many reasons' effect. These mistakes are not mutually exclusive and may even be likely to reinforce each other.

2. Theories of behavior change

Attempts to change one-shot or habitual energy-related behaviors are frequently based on theories of human behavior and behavior

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[1] Energy conservation involves reducing energy use through lifestyle changes (e.g. by line-drying clothing rather than using the dryer), while energy efficiency involves improving the efficiency of one's energy use primarily through technological changes (e.g. by buying energy efficient appliances).

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change. We do not provide a comprehensive review of this vast theoretical literature, as this is beyond the scope of our contribution and has already been accomplished by other scholars (e.g. Brown and Sovacool, Forthcoming; Darnton, 2008; Martiskainen, 2007; Jackson, 2005; Kollmuss and Agyeman, 2002). Rather, we overview a number of prominent theories, placing particular focus on the role of information provision as an intervention for behavior change. Interestingly, Brown and Sovacool, (Forthcoming) assert that their review 'suggests that research (and policies) should focus on information deficits,' yet they recognize that 'addressing information deficits has not delivered large-scale impacts in terms of reductions in energy demand or changes in energy related practices'.

An appropriate starting point for our review is the 'rational choice' model, according to which people systematically weigh costs and benefits and adopt energy-related behaviors only if they are economically advantageous. Information regarding available choices is therefore a crucial component of agents' decision-making processes (Martiskainen, 2007; Jackson, 2005). Rational choice theory frequently assumes that suboptimal choices result from information deficits and accordingly, prescribes information provision in order to enable agents to make informed choices. Despite its intuitive appeal and universal ambitions, the rational choice model has been criticized on the grounds that it often overestimates people's cognitive abilities, but also that it underestimates the complexity of the decision-making apparatus (Costanzo et al., 1986; Jackson, 2005), failing to account for other factors that can bypass cognitive deliberation, such as habits, moral and social considerations, emotions, and cognitive biases. Evidence indeed shows that information provision alone does not automatically lead to the expected behavioral changes (Abrahamse et al., 2005).

Some theories have attempted to expand the expectancy value structure (i.e., according to which choices are understood to be made on the basis of their expected outcomes and the value that one attaches to these outcomes) of the rational choice model in order to take into account the influence of social and psychological factors such as expectations about others' attitudes towards a behavior and perceptions about one's control over the situation. One very well-established theory is the Theory of Planned Behavior (Ajzen, 1991), which states that behaviors are determined by behavioral intentions, which are in turn determined by attitudes, subjective norms, and perceived behavioral control. Within this framework, messaging campaigns aim to affect these antecedents (i.e., attitudes, norms, and perceived behavioral control) in an attempt to ultimately affect behavior. Although this model does help to understand some types of intentional behaviors, it overlooks several affective and cognitive dimensions of the decision-making process. In some cases, for example, behaviors can be modified without modifying attitudes, norms, or perceived behavioral control, suggesting that these antecedents are not the only important determinants of behavior (Martiskainen, 2007; Jackson, 2005).

Another direction for improving the predictive power of theories based on the rational choice model is to explicitly incorporate the dynamic formation of moral beliefs, rather circumventing them. If morals are to understood as fixed preferences, alignment with one's morals represents a form of self-interest. Several theoretical frameworks, such as Norm-Activation Theory (Schwartz, 1977, 1992) and Value Belief Norm Theory (Stern et al., 1999), explore this possibility. Value Belief Norm Theory, for instance, is based on the premise that prosocial attitudes and personal moral norms are significant predictors of pro-environmentally-friendly behaviors. According to this theory, human behavior is the end result of a causal chain comprised of five elements (personal values, ecological worldview, adverse consequences for valued objects, perceived ability to reduce threat, and pro-environmental personal norms), each of which can conceivably be influenced by the provision of new information. Interestingly, it has been recognized that several value orientations can co-exist within the same individual, suggesting that behavior critically depends on the salience of specific values and beliefs in a given decision-making context (Jackson, 2005). A criticism of this theory is the relatively weak empirical correlation that is frequently found between personal norms and pro-environmental behaviors, suggesting the possible role of situational factors (Martiskainen, 2007; Jackson, 2005).

The Theory of Interpersonal Behavior (Triandis, 1977) attempts to integrate elements of rational decision-making with an explicit role for habits and social and emotional factors. This model assumes that behavior is influenced by an individual's intentions, habits, as well as facilitating conditions of the decision-making environment. Intentions in turn are influenced by attitudes and social and affective factors. There are indeed some indications that emotions are 'a more or less unconscious input to decision-making, (…) governed by instinctive behavioral responses to particular situations' (Jackson, 2005). While this theory addresses several of the criticisms faced by the rational choice model, its complexity has led to its infrequent use in empirical investigations (Martiskainen, 2007; Jackson, 2005).

Given our focus on information provision as an intervention for inciting behavior change, it seems appropriate to devote some attention to persuasion theories (for an overview, see O'Keefe, 2016). The broad category of persuasion theory contends that the persuasiveness of a message depends on three main elements: the credibility of the source of the message, the persuasiveness of the arguments contained in the message, and the responsiveness of the audience receiving the message (Hovland et al., 1953), further assuming that sufficiently persuasive messages have the power to change attitudes and intentions accordingly. 'Cognitive dissonance theory' refers to a situation involving conflicting attitudes, beliefs, or behaviors. Cognitive dissonance can occur when one receives information that calls attention to such conflict (e.g. when someone who is convinced that he uses little energy receives energy-use feedback indicating that in fact he uses a lot of energy). To reduce the psychological discomfort this generates and to restore cognitive harmony, people are susceptible to altering either their attitudes, beliefs, or behaviors (Kantola et al., 1984) in order to realign any perceived conflict between them. A more recent persuasion model, the Elaboration Likelihood Model (Petty and Cacioppo, 1986) also formalizes the notion that changes in attitudes can occur via two different types of psychological processes: central (i.e. deliberative) and peripheral (i.e. heuristic) processes.

Vlaev and Dolan (2015) state that 'most traditional theories of behavior change have relied mostly on influencing higher-order mental processes as a route to altering deliberate responses whereas more recent theorizing postulates that interventions can also rely on using contextual cues influencing lower-order processes as a route to changing spontaneous responses.' Information and messaging interventions that seek to change people's attitudes and behaviors are frequently grounded in the postulate that the information provided will be processed by what has been called System 2 (deliberate cognition), which is characterized as slow, effortful, infrequent, conscious, logical, and calculating. Recent evidence demonstrates, however, that the same information can also be processed though System 1 (automatic cognition), which is characterized as fast, automatic, frequent, unconscious, emotional, and stereotypic (Kahneman, 2011). Dual-process theories of cognition can be found across many disciplines and share a distinction between two different cognitive processes akin to System 1 and System 2. In what follows, we invoke this distinction in order to understand the experimental evidence we raise within the context of a broader theoretical framework regarding behavior change. Evidence suggests, moreover, that people are generally unaware of how heuristic processes shape their behavior while preserving their higher-order cognition such as beliefs and attitudes. Vlaev and Dolan (2015), for example, find evidence suggesting that people unconsciously attempt to rationalize their behaviors ex-post. In what follows, we draw upon a large and growing body of empirical work that supports such dual-process theories of decision-making. Without dismissing the role of deliberate cognition in determining some types of behaviors, we contend that behavior is largely context-dependent and that even introspective

reflection can fail to elucidate the determinants of an individual's own behavior, especially when the behavior in question is heavily influenced by System 1.

In what follows, we consider the ways in which energy-related public messaging campaigns can fail to deliver the expected results. We call attention to evidence suggesting that this can occur when public messages are designed under the assumption that the information they contain will be processed through System 2 without taking into account the possibility that System 1 can intervene and bypass System 2. As we will show, this mistake can lead to unexpected and sometimes counterproductive results. In the subsequent sections, we show how messages designed with System 2 in mind (i.e. deliberate cognition) can involuntarily activate System 1 (i.e. automatic cognition).

3. Inadvertently emphasizing the prevalence of undesirable behavior

In an effort to convince people of the severity of an issue, and therefore of the reason to act, one common strategy employed in information campaigns is to call attention to the ubiquity of undesirable behavior. This is often done in the belief that the greater the perceived severity of the problem, the greater the likelihood that an individual will decide to do something about it. Empirical evidence shows, however, that emphasizing that an undesirable behavior is widespread can in fact reinforce the behavior by fostering the impression that it constitutes a social norm.[2]

Numerous psychological mechanisms have been proposed to explain conformity to perceived social norms, including conditional reciprocity, social learning, coordination benefits, and social sanctioning (Nyborg et al., 2016). We add that publicizing information about the ubiquity of undesirable behavior may even cause individuals or entities (e.g. companies, municipalities) to engage in detrimental positional races, enabling them to more easily justify their unethical behaviors through selective social comparisons (e.g. 'I'm bad, but others are worse').

In support of these theoretical accounts, empirical evidence shows that disseminating information about widespread engagement in detrimental behavior can indeed backfire. For example, the use of descriptive norms as a strategy to encourage households to reduce their energy consumption (Allcott, 2011) can generate a 'rebound effect' when households that use less energy than the average household feel entitled to increase their consumption (Brown and Wang, 2015; Schultz et al., 2007; Allcott and Rogers, 2014; Buchanan et al., 2015). Another example unrelated to energy consumption illustrates the counterproductive effect of emphasizing the frequency of an undesirable behavior. Due to the theft of more than one ton of wood from Arizona's Petrified Forest National Park each month, the local authority erected signs informing park visitors that many people were vandalizing the park by stealing small pieces of wood. Contrary to expectations, this message actually appeared to normalize stealing wood from the park and resulted in an increase in theft (Cialdini, 2003). In this way, it could be said that although conventional wisdom anticipates that social information will be received and processed through the deliberative decision-making process of System 2, experimental evidence seems to suggest that the heuristic decision-making process of System 1 can intervene instead, leading to behavioral outcomes that stand in opposition to the desired effect.

Rather than using a disadvantageous descriptive social norm (e.g., 'Many past visitors have removed petrified wood from the Park…' or 'Many people do not switch off the lights when leaving the room'), it may make more sense to employ an injunctive social norm (e.g., 'Please do not remove petrified wood from the Park…' or 'Please switch off the lights when leaving the room') that targets the pursued behavior (Cialdini, 2003; Winter, 2006). Descriptive norms could also be used more advantageously by creating subgroups designed to better leverage the power of social comparison. In the case of home energy reports, one alternative strategy suggests that injunctive feedback should figure more prominently than descriptive feedback for the most energy efficient households, or that these households should receive information about households with a similar level of energy usage rather than all other households.[3]

Other research points to the importance of framing and wording in communicating descriptive norms (Demarque et al., 2015). Rather than calling attention to the high percentage of people engaging in an undesirable behavior, for instance, a more effective strategy could emphasize the absolute number of individuals engaging in the desirable behavior or a positive trend in the frequency of the desirable behavior. In aiming to reduce the practice of a consumptive habit that is highly prevalent, such as the use of electric clothes dryers, campaign messages would also do well to re-frame the message by emphasizing the number of people in a given region that have decided to line dry their clothes. Demarque et al. (2015) also show that information about non-prevalent norms can be effective if communicated using verbal quantifiers of positive rather than negative polarity, as doing so draws cognitive attention to reasons for engaging in a desirable behavior vs. reasons against engaging in this behavior (e.g. 'a few people line dry their clothes' rather than 'few people line dry their clothes').

4. Emphasizing the large number of victims

Another strategy that is often used to draw attention to the scale of a problem is to emphasize the great number of potential victims. For instance, UNICEF has recently communicated that air pollution kills 600,000 children annually and that reducing fossil fuel combustion and investing in energy efficiency are therefore urgent priorities.[4] In a similar fashion, UN representatives have stated that air pollution is responsible for the death of 6,000,000 people every year, urging world leaders to shift to cleaner energy in order to halve the death toll by 2030, even adding that the 'horrible thing is that this will be growing because of rising use of fossil fuels.'[5] In these cases, conventional wisdom would assert that the greater the number of victims, such as the number of migrants forced to relocate due to environmental degradation or the effects of climate change, the stronger the expected impact of a message on an individual's propensity to take action. Nevertheless, recent empirical evidence suggests that emphasizing a large number of victims could harm the very cause it intends to help, namely due to the identifiability bias (Jenni and Loewenstein, 1997; Lewinsohn-Zamir et al., 2017) and the related scope-severity paradox (Nordgren and Morris McDonnell, 2011).

According to Hsu (2008), identifiability bias is the 'propensity for people to have stronger emotions regarding identifiable individuals or groups than for abstract, unidentifiable ones.' Several mechanisms (Jenni and Loewenstein, 1997; Hsu, 2008) have been proposed to

[2] This has indeed been suggested with respect to littering in the case of the "Iron Eyes Cody" spot, a publicity measure that aired on U.S. television in the 1970s and 1980s, which depicted widespread degradation of Native American lands due to pollution (Cialdini, 2003). For a discussion of the various risks that social norm-type interventions can entail, see also Corner (2011).

[3] Tailoring messages to different groups, however, raises ethical and political questions that should not be overlooked. If a target subgroup learns that they are receiving different information than other subgroups, for example, this could be viewed as contentious, especially if the information or the consequences of providing it have important political implications. We thank an anonymous reviewer for raising this point.

[4] http://edition.cnn.com/2016/10/30/health/air-pollution-children-unicef/index.html.

[5] https://www.reuters.com/article/environment-pollution/air-pollution-scourge-underestimated-green-energy-can-help-un-idUSL5N0CW2U820130409.

explain this tendency, notably:

- The *vividness* of an identification that is activated through an emotional story, visual images, and real-time unfolding.[6]
- The *certainty effect*, derived from prospect theory, which states that people overweight certain outcomes (e.g., helping an identifiable victim) relative to uncertain ones (e.g., helping statistical victims who are characterized as a probabilistic threat).
- The *reference group*: Individuals overweight similar expected risks that are faced by smaller groups (e.g. 100,000 people face a 10% risk of suffering due to forecasted sea level rise) compared to bigger groups (e.g. 1,000,000 people face a 1% risk of suffering due to forecasted sea level rise). In the case of an identified versus statistical victim, the reference group size is smaller and entirely constituted of identified victims.
- *The contrast between evaluating the harm before it occurs (ex ante) versus after (ex post)*: In the case of an identified victim, the unfortunate event has already occurred, providing greater impetus to help, compared to statistical victims for whom the unfortunate event has not yet occurred, raising the need to take preventive measures.

As a result of any of these psychological mechanisms, messages stressing a greater number of victims may be detrimental to the objectives they intend to address. Given that these mechanisms can be considered to operate through System 1, here again we observe that the unanticipated effects of this strategy could be considered to result from the incorrect assumption that the information provided will be given careful, deliberative consideration through a process akin to System 2, whereas in reality the information appears to be processed instead through System 1. Kogut and Ritov (2005), for example, find that an identified victim elicits greater willingness to help compared to an unidentified victim. Interestingly, the identifiability bias has also been shown to affect behaviors related to non-human victims, such as raising funds to protect endangered species (Markowitz et al., 2013; Thomas-Walters and Raihani, 2016). Moreover, in contrast to a reasonable expectation that the severity of punishment should be sensitive to the severity of a crime, Nordgren and Morris McDonnell (2011) and Konis et al. (2016) have found that increasing the number of victims of a crime actually decreases the perceived severity of the crime, and that third parties recommend less severe punishments for crimes that victimize a greater number of people. This provides evidence that people don't always conform to expected, rational evaluative processes. Ceteris paribus, the identifiability bias implies that emphasizing the great number of victims of energy-related pollution can lead decision makers such as politicians or judges to under-invest in measures they could undertake to address these issues. The identifiability bias may also influence politicians' behavior through its impact on their constituents. Voters who are subject to this bias may not be swayed by information regarding the significant number of victims who suffer from the consequences of high levels of energy consumption, such as the scores of people who suffer from aggravated asthma symptoms due to automobile tail-pipe pollution. This could result in a lack of demonstrated voter interest in having their elected representative address energy-related issues.[7]

The biases presented above suggest that information about victims is often processed through System 1 rather than System 2, which implies that identifying a specific victim is likely to be a more effective strategy than identifying many faceless victims. Thus, one intuitive that communicators could avoid this pitfall is to design messages that emphasize the identity, rather than the number, of those affected by high levels of energy consumption. Vivid descriptions could be used, for example, to amplify numerical information provided. This is a well-known strategy in charity work, but may be less well-known, or perhaps perceived as less relevant, among proponents of energy conservation campaigns. Thus, although issues caused by the overconsumption of energy, namely those related to climate change, indeed impact a significant number of people, selecting a single individual and identifying him or her in some way may be a more effective strategy in avoiding 'climate change apathy' (Norgaard, 2009) and inducing energy conservation than simply endeavoring to cite the maximum number of victims possible. Additional research suggests that people may be more likely to help, e.g., by donating more to large numbers of victims, if victims are perceived as belonging to a single entitative group (Smith et al., 2013) or if fundraisers ask donors to indicate a hypothetical amount that they would be willing to give to help a single individual in need before asking them to decide how much they would like to donate to a group of similar individuals (Hsee et al., 2013).

5. Providing too many reasons to go green

The intuition that more is better can also lead people to believe that providing more arguments in favor of the adoption of energy-saving measures constitutes a more persuasive message than one that provides fewer arguments. It is indeed characteristic of environmental campaigns to provide a great many reasons why one would do well to adopt pro-environmental behaviors. The official website of the Energy Star program, for example, cites ten different reasons why construction professionals should pursue certification.[8] In a similar fashion, numerous associations and blogs encourage citizens worldwide to conserve energy by listing numerous reasons to do so.[9] An online search for 'Top 10 reasons to go solar' also returns almost ten times as many results as a search for 'Top 3 reasons to go solar'.[10] Recent studies in other contexts, however, challenge the effectiveness of this implicit belief, demonstrating that adding arguments can in fact reduce the overall persuasiveness of a message (see Weaver et al., 2012 and Shu and Carlson, 2014 in a business context, and Weaver et al., 2016 in a prosocial context).

The presenter's paradox (Weaver et al., 2012) suggests that when people present information, they tend to follow an additive strategy (in which case, the more arguments the more persuasive a message is considered to be), whereas when people evaluate the same information, they tend to use a process that more closely resembles averaging (in which case, a greater number of arguments does not necessarily improve the persuasiveness of a message). Communicators often assume, for example, that providing weaker reasons in addition to relatively stronger ones should increase the overall persuasive power of a message. Several studies, however, demonstrate that an audience is in fact *less* likely to be persuaded to engage in a behavior after receiving a message that contains both weak and strong arguments compared to a message that contains the stronger arguments only (Weaver et al., 2016), a phenomenon that could be understood in part through bounded rationality. Rational inattention, or information overload could also be at work here (Sallee, 2012). Asensio and Delmas (2015) moreover show that information about health benefits is more motivational than information about cost savings with respect to engaging in energy conservation, suggesting that the domain and/or framing of an argument can also contribute to its persuasiveness. In short, contrary

[6] A recent non-energy related example pertains to aid for the Syrian crisis. In September 2015, an image of the body of Aylan, a Kurdish child who perished while fleeing conflict in Syria, began circulating widely, prompting a sharp temporary rise in donations towards relief efforts (Lunt, 2016).

[7] We thank an anonymous reviewer for raising this point.

[8] https://www.energystar.gov/buildings/about-us/how-can-we-help-you/build-energy-program/business-case/10-reasons-pursue-energy-star.

[9] One illustrative example, enumerating 15 reasons to conserve energy, can be consulted at: http://www.conserve-energy-future.com/whyconserveenergy.php.

[10] Search conducted via Google on April 11, 2018.

to popular belief, including weaker reasons to change one's behavior can inadvertently weaken the persuasive impact of the message rather than strengthen it. These results, too, can be considered to be evidence of a cognitive bias that occurs via System 1.

Evidence suggests that this detrimental effect could be avoided by privileging the strongest arguments. Albeit counter-intuitive, this strategy would involve deliberately limiting the number of reasons provided in a message in order to maximize its persuasiveness. This has direct applications to arguments aiming to convince people to reduce their energy use or to switch to cleaner energy sources. Pilot studies would be necessary in order to determine the optimal number of reasons, the most appropriate framing and wording (Clot and Grolleau, 2017), the strongest types of arguments given the targeted audience (Nisbet and Mooney, 2007), as well as the type of behavior change that is being pursued in the contexts of interest. In identifying the optimal number of reasons to include in a specific context, messages could be evaluated based on a Pareto-like principle whereby arguments would continue to be added until they no longer have a positive impact on the overall persuasiveness of the message among those who receive it.

6. Conclusion

Taken together, the evidence we raise here suggests that the devil is indeed in the details with respect to persuasive messaging. We raise recent scientific evidence suggesting that many persuasive messages in the energy conservation and efficiency realm and beyond (e.g. environmental and health campaigns) may be flawed by recurrent mistakes that can undermine the very outcomes they are intended to encourage.

In calling attention to what some may consider to be bad news, however, we also offer some good news. The bad news is that conventional wisdom, driven by an implicit ascription to the belief that more is better, may be leading those who design conservation messages in counterproductive directions. Specifically, we invoke dual-process theory as a general mechanism by which these counterproductive outcomes occur: whereas managers of communications campaigns assume that certain information will be treated rationally by System 2, evidence of the biases and heuristics presented here demonstrate that information is often treated instead by System 1, leading to underperforming – sometimes even counterproductive – messaging strategies. Being able to anticipate under what circumstances information is likely to be processed using System 1 will enable communications specialists to more effectively craft persuasive public messages regarding the value of adopting energy efficiency measures and reducing overall consumption.

Thus, the good news is that these mistakes can be easily addressed if campaign proponents and managers of public information programs are well-informed and willing to take the necessary, if sometimes counter-intuitive, measures outlined above. Such steps could increase the efficacy of persuasive messages in the realm of energy conservation and more generally, contribute to an increased awareness of psychological biases and their potential role in the pursuit of energy conservation in the policymaking sphere.

We contend that some of the most pernicious and stubborn obstacles to progress are often those that civil society may be least aware of. In this work, we seek to reveal one such obstacle: a shortcoming in the logic employed by energy conservation and efficiency campaigns that may be undermining, rather than advancing, their efforts to change consumption habits. In this respect, this work also constitutes an appeal for systematic preliminary assessments of conservation messages through a behaviorally-informed lens.

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