

I am green: The Role of Effort and Image on green Identity Signaling

Abstract

Identity signaling is a strong motivator for human behavior. We investigate whether we can nudge people to higher goals with regard to showering time reduction if they perceive a possibility to signal their green identity. In a fictional saving campaign by a utility company people saw a postcard displaying either a trendy or a non-mainstream greenie and the amount of effort (shower time reduction) that is associated with a certain reference saving goal. They chose their individual goal on the back side. We suggest that people who aim at signaling their identity choose higher goals when energy saving is associated with a non-mainstream greenie and medium effort in order to send clear identity signals to others. Our results confirm our hypotheses. Identity signaling therefore nudges people towards higher saving goals.

Keywords: *Identity Signaling, Energy Conservation, Goal Setting, Image, Effort*

Track: *Consumer Behavior*

1. Introduction

It is widely accepted that we need to diminish our energy consumption for a sustainable future. Recent research has shown that behavioral interventions are very effective to reduce energy consumption while being at the same time relatively inexpensive (Allcott & Mullainathan, 2009). Energy conservation is commonly associated with a loss of comfort and is therefore negative from a hedonistic point of view (Midden & Ritsema, 1983). However, pro-environmental attitudes are more likely to be translated into behavior if loss of comfort is compensated by benefits. Benefits may originate from positive associations with pro-environmental behavior like altruistic attitudes or a high status (Griskevicius, van den Berg, & Tybur, 2010; Sadalla & Krull, 1995). In their work, Griskevicius et al. (2010) show that people choose a costly green product instead of the cheaper ordinary alternative if status motives are primed. Product choice is therefore used to communicate or signal identity (Berger & Heath, 2007). We investigate whether we can nudge people to higher goals with regard to showering time reduction if they perceive a possibility to signal their green identity. We present a fictional saving campaign of a utility company by showing a postcard that displays either a trendy or a non-mainstream greenie and the amount of effort that is associated with a certain reference saving goal. To make showering appropriate for identity signaling, participants were able to signal their identity by choosing a goal on a postcard.

We start with an overview on identity signaling and then present our hypotheses. Thereafter, we describe the experimentation setting, the results and close with a discussion of this study's implications for both theory and practice.

2. Identity signaling

Already in 1959, Levy has denoted that the consumer is not solely functionally oriented. Rather, the purchase, display, and use of goods communicate symbolic meaning to the individual or others (Grubb & Gratwohl, 1967). For reasons of self-esteem and self-consistency needs, people are more likely to buy products that evoke positive self-images rather than negative self-images (Sirgy, 1982). Recently, studies have revealed that there are certain product domains people use more to signal their identity (e.g., music) than others (e.g., dish-soap) (Berger & Heath, 2007). The authors suggest that people engage in identity signaling in product domains which are seen as appropriate for self-expression and personality inferences both by the signaler and by the perceiver to assure that their identity signal will be identified and correctly understood. Thus, the meaning is created in a social communication process (Berger, Heath, & Ho, 2007). Since identity signaling is a strong motivator for human behavior, the concept has already been used to inducing behavior change. Berger and Heath (2008) used identity signaling to improve consumer health with regard to alcohol and fast food consumption. According to them, "the decision to engage in detrimental health behaviors depends not only on perceived risk but also the identity such behavior signals to others (p. 510)." The possibility to convey the image of belonging to the cool crowd might outweigh the risks of smoking in the eyes of some smokers. Berger and Heath (2008) related unhealthy behavior to dissociative reference groups and found that undergraduates made healthier food choices and reported lower alcohol consumption when it was associated with a dissociative group.

As research has shown that high goals are related to high performance (for a review see Abrahamse et al., 2005), the goal of our study is to get people to set high saving goals. In the next section, findings concerning the main influencing factors on identity signaling are presented and hypotheses are defined.

2.1 The influence of reference groups and domain relevance

Whether people diverge from others depends mainly on the characteristics of the social group which is associated with a certain taste or behavior. Berger and Heath (2008) showed that

people diverge from disliked others, low-status others and dissimilar others. The authors suggest that people diverge to ensure that others understand who they are and try to avoid sending undesired identity signals to others. White and Dahl (2002) showed that males were significantly less likely to select and had more negative evaluations of the ladies' cut than the house cut steak indicating that dissociative effects can be stronger than associative effects. Berger et al. (2005) showed that people diverge when too many people are holding a certain taste. Students who learned that their preferences were shared by the majority of students were more likely to abandon their former preferences. For symbolic concerns, people also tend to avoid products which have become too soon too popular, as these products might turn out as fads later on (Berger & Le Mens, 2009).

The meaning of a signal is created in a social communication process. Therefore, people only engage in identity signaling in domains that are commonly perceived as providing relevant information for making identity inferences (Berger et al., 2007). The intention to conserve energy highly depends on the attitude a person has towards saving energy. The identity that is associated with saving energy can either be perceived as beneficial (if saving energy goes along with the image of being trendy and cool) or as costly (if saving energy is associated with someone who is outdated and non-mainstream), and should thus influence the height of the self-set goal. If saving energy is presented as a trendy and well-adopted topic by the mainstream, people aiming at signaling their green attitudes might recognize that high saving goals are not suitable to send clear identity signals because perceiver could have the impression that the "greenie" just shows pro-environmental behavior because everybody does it. To increase the diagnosticity of their signals as a means to be correctly recognized as "greenie", identity signaler will not go with the crowd and set high goals if saving energy is presented as a trend. Instead, they will stand out from the crowd and set higher goals if saving energy is presented as being non-mainstream. Therefore we predict that people who rate energy saving as highly relevant will diverge and set high goals if the greenie is presented as non-mainstream. Contrary to them, people who do not aim at signaling their identity will more focus on external cues (e.g., regarding attractiveness or lifestyle) and will set higher goals when saving energy is associated with a trendy person. Research on sympathy has revealed that we like people who are similar to us (Byrne, 1997), regardless if this similarity concerns character, opinions, origin or lifestyle. We predict an effect of sympathy and attractiveness for people who do not aim at identity signaling meaning that these people will set higher goals if a likable person stands for sustainability.

H1: There will be a crossover-interaction between image of greenie and domain relevance on energy saving goal setting. People who aim at signaling their identity will set higher goals when being confronted with a non-mainstream greenie and people who do not aim at identity signaling will set higher goals when being confronted with a trendy greenie.

2.2 The influence of effort

Identity signaling only works if signals are clear and specific. As soon as dissimilar or disliked people start to adopt a certain taste, the taste no longer communicates the desired identity. For reasons of preventing imitation, people should acquire skills or products that are related to high effort or high costs. The rationale behind this is that cheap signals are the most likely ones to be poached whereas costly signals should be more likely to persist over time because they impose barriers that make adoption relatively difficult (Berger & Heath, 2005). For example, a person who aims at expressing himself as a music expert tries to find a signal which is hard to acquire and maybe also to identify for possible poachers. For instance, this person would rather go to bars where newcomers perform instead of going to mass-events. "Effort costs" play a significant role in identity signaling (Berger & Heath, 2005). The authors assume that signaling domains that require a high initial cost of effort are especially effective.

People who want to signal their green identity should set high goals because this is associated with high effort. Thus “Identity Signaling Theory” would predict a positive linear relationship between effort costs and goal height: The higher the effort for saving is, the higher should the self-set goals be for those rating the domain relevance of saving energy high. Contrary to this, other studies have shown that pro-environmental behavior is most likely to occur when the effort is low (Diekmann & Preisendörfer, 2003). The so called “Low-Cost-Hypothesis” assumes a negative linear relationship between effort costs and behavior. Effort has also an indirect effect on behavior as it moderates the relationship between attitudes and behavior. While the negative direct effect has been replicated several times, the indirect effect has been modified within the last years. Schahn and Möllers (2005) have shown that the attitude-behavior-correlation shows an inverse u-shaped pattern instead of a linear relationship meaning that attitudes will be more likely translated into behavior when the effort is medium. Based on these findings we assume that people will set the highest goals when effort is medium.

H2: The relationship between effort and goal height will show an inverse u-shaped pattern meaning that people will set the highest saving goals when the effort is medium.

2.3 Empirical study

2.3.1 Stimulus material

A designer developed two different pictures of a greenie: One showing an aspirational modern and trendy greenie and the other showing a dissociative outdated and non-mainstream greenie. Both images represent sketched figures as this allows manipulating characteristics of the person as well as the surroundings in a better way. The cool one sits in a Starbucks coffee shop and works at his Apple laptop wearing a T-Shirt with an environmental emblem. The non-mainstream on the contrary looks like a hippie wearing a colored pullover and sits in his scruffy kitchen while playing the guitar and drinking tea. We chose these two extreme characters to be able to get distinct effects. To control for sympathy and similarity effects we conducted a pretest with a sample of 31 students. We showed them both pictures and asked them to rate the perceived similarity (“I am very similar to this person.”), motivation for saving energy (“This person just saves energy because it is hip.”), and sympathy (“I think this person is very likeable.”) on a 7- point Likert scale. Participants indicated that they feel more similar to the trendy greenie ($M_{\text{trendy}} = 3.67$ vs. $M_{\text{non-mainstream}} = 2.04$; $t(26) = 3.812$, $p < .01$) and like him more than the non-mainstream one ($M_{\text{trendy}} = 4.00$ vs. $M_{\text{non-mainstream}} = 2.81$; $t(26) = 5.472$, $p < .01$). As predicted, the participants feel that it is more likely that the cool and modern greenie solely behaves in a pro-environmental manner in order to be hip than the non-mainstream one ($M_{\text{trendy}} = 4.48$ vs. $M_{\text{non-mainstream}} = 2.19$; $t(26) = 3.171$, $p < .01$).

Effort is represented via a slogan-like statement on the picture of each greenie. To communicate high / medium / low effort we claim “Save 12% of your weekly energy consumption by reducing your shower time by 50% / 30% / 10%”. We referred to taking a shower for three reasons: First, the amount of energy for boiling water is one of the main cost drivers within the home (Jackson et al., 2007). Second, everyone takes a shower at least once but more likely several times a week. Third, shower time is a continuous variable and thus is suitable for manipulating the effort. By communicating the effort for reducing weekly consumption by 12%, we provided a reference point for judging the effort that is associated with a certain goal.

2.3.2 Participants and procedure

One-hundred-seventy-three people ($M_{\text{age}} = 30.17$; $SD_{\text{age}} = 12.31$; 49.7% male) participated in the study. The sample was recruited by a market research company to ensure to get a

representative sample regarding age. On the first page of the online survey, participants learned that they were taking part in a study on attitudes towards saving energy and energy efficient behavior. They were asked to imagine that they had received a postcard of their local utility informing about their latest energy saving campaign. Within this campaign they are asked to set an energy saving goal with respect to showering for the next three months. To make showering appropriate for identity signaling, we used a postcard as means for people to communicate their goal. The postcard shows either a trendy or non-mainstream greenie. A slogan communicates low, medium or high effort. On the following page which is the back of the postcard participants are asked to set their individual saving goal between a range of 0% to 50% with the help of a visual slider. We restricted choice to 50% because commercial sources estimate potential savings by 50%.¹ The goal choice is the central dependent variable in this study. We thereafter asked participants to rate the domain relevance of saving energy on a 7-point Likert scale (“how well do you think can you express yourself by showing pro-environmental behavior (e.g., saving energy)?”, “how well can others make inferences on your personality by showing pro-environmental behavior?”; $\alpha = .77$).

3. Results

The dependent variable of the study is participants’ goal choice (between 0% and 50%). To test the hypotheses, we conduct a two factor between-subjects ANOVA with “effort” (50% vs. 30% vs. 10% reduction of shower time) and “image of greenie” (trendy vs. non-mainstream) and accomplish a median-split with domain relevance. The analyses were performed with a sample of $N = 146$. We excluded those participants who chose a goal of either 0% or 50% because people with extreme attitudes are not prone to experimental manipulation as strong attitudes are likely to be automatically activated (Fazio, 1986).

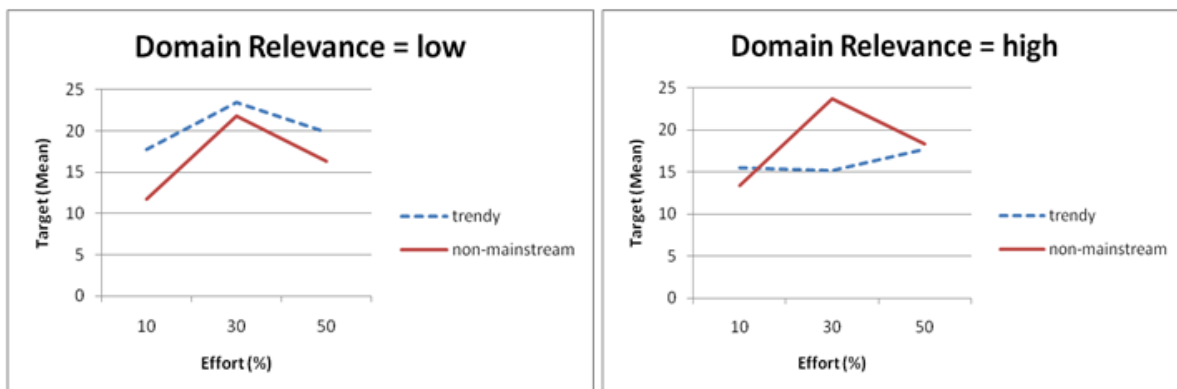


Figure 1: Effect of image of greenie and effort for those who rate the domain relevance of saving energy below median (left) and above median (right).

People who rate domain relevance high and see a non-mainstream greenie choose higher saving goals than people who see a mainstream greenie ($M_{\text{high/non-mainstream}} = 18.50$, $SD = 1.19$; $M_{\text{high/mainstream}} = 16.08$, $SD = 1.35$; Figure 1 right). Contrary to them, people who rate domain relevance low and see a non-mainstream greenie choose lower saving goals than those who saw a mainstream one ($M_{\text{low/mainstream}} = 20.33$, $SD = 1.56$; $M_{\text{low/non-mainstream}} = 16.60$, $SD = 1.58$; Figure 1 left). The analysis reveals a significant interaction between image of greenie and domain relevance ($F_{1,146} = 6.12$; $p = .033^*$). Effort has a significant effect on goal setting ($F_{2,146} = 7.28$; $p = .001^{**}$). People who are told that effort to save 12 % of their weekly electricity consumption is medium, choose the highest goals ($M_{\text{medium}} = 21.01$, $SD = 1.30$; $M_{\text{low}} = 14.58$, $SD = 1.10$; $M_{\text{high}} = 18.04$, $SD = 1.31$).

¹ <http://www.derenergiesparcheck.de/lew/>

4. Discussion and conclusion

In our study we aimed at nudging people to higher saving goals with regard to showering time by applying Identity signaling. Our results show that people who aimed at signaling their identity chose higher goals when being confronted with a greenie that doesn't represent conserving energy as being trendy. People who did not aim at identity signaling chose higher goals when the greenie was presented as trendy. This finding is in accordance with previous studies which have demonstrated the importance of the reference group that is associated with a certain taste (White & Dahl, 2002). Contrary to this, people who want to express themselves in this area refuse setting high goals when saving energy is presented as being trendy and adopted by the mainstream, as saving energy would not provide a clear signal to others. Even worse, people perceiving the signal could infer that the signaler does so for signaling and not for authentic purposes. Research has shown that people abandon their original tastes when the signal is poached by dissociative groups (Berger & Heath, 2005; Berger & Le Mens, 2009).

Regarding effort, people set higher saving goals when the effort is medium. This result represents a synthesis between the assumption made by Berger and Heath (2005) and the "Low-Cost-Hypothesis" (Diekmann & Preisendörfer, 2003). According to the "effort costs"-assumption, people should set higher goals the higher the effort for saving energy is to reduce the possibility that the signal will be poached by people who want to save energy for signaling purposes whereas according to the "Low-Cost-Hypothesis" people should set the highest goals when effort is low. Instead, we find an inverse u-shaped pattern which is supported by findings concerning the modification of the "Low-Cost-Hypothesis" (Schahn & Möllers, 2005). Thus, people set the highest goals when effort is medium because by doing so they can signal their identity at a moderate level of effort. Choosing the highest goals when effort is low does not allow signaling green attitudes to others.

In our study, we were able to show that identity signaling is indeed a strong motivator to nudge people towards higher saving goals. Sadalla and Krull have provided first evidence for the appropriateness of saving energy as a signal in 1995 by showing on the one hand that behaviors associated with resource conservation lead to systematic attributions regarding the performer's identity and on the other hand that conservation behavior is appropriate for conveying a specific image of the self to a social audience. Building on this, our results further indicate that people regard identity signaling as a benefit or a compensation for the effort and loss of comfort that is associated with reducing showering time.

Although we were able to show that identity signaling has a strong influence on goal setting, there are several limitations. First, our dependent variable was goal choice meaning that people could say "I want to reduce my showering time by 50%" without having any consequences afterwards. Future studies should conduct a longitudinal study to measure both showering time and energy consumption to test whether higher goals are actually related to higher energy savings. Second, we applied two only different images or stereotypes of a greenie although there are more than just two kinds of people who would save energy for other reasons than being trendy or being ecological motivated (e.g. save money). Future studies should therefore test which image works best for which customer segment.

To conclude, our study results indicate that if energy saving campaigns imply the possibility to signal identity people may be more motivated to save energy.

References

Abrahamse, W., Steg, L., Vlek, C., & Rothengatter, T. (2005). A review of intervention studies aimed at household energy conservation. *Journal of Environmental Psychology*, 25, 273-91.

Allcott, H. & Mullainathan, S. (2009). *Behavioral Science and Energy Conservation*. Working Paper, Massachusetts Institute of Technology.

- Berger, J. & Heath, C. (2007). Where Consumers Diverge from Others: Identity Signaling and Product Domains. *Journal of Consumer Research*, 34, 121-34.
- Berger, J. & Rand, L. (2008). Shifting Signals to Help Health: Using Identity Signaling to Reduce Risky Health Behaviors. *Journal of Consumer Behavior*, 35, 509-18.
- Berger, J., Heath, C., & Ho, B. (2007). Divergence in Cultural Practices: Tastes as Signals of Identity. Working paper, Marketing Department, Stanford University.
- Berger, J. & Le Mens, G. (2010). Why Do Products Become Unpopular? Adoption Velocity and the Death of Cultural Tastes. In *Advances in Consumer Research Volume 37*, eds. Margaret C. Campbell and Jeff Inman and Rik Pieters, Duluth, MN : Association for Consumer Research.
- Byrne, D. (1997). An Overview (and Underview) of Research and Theory within the Attraction Paradigm. *Journal of Social and Personal Relationships*, 14(3), 417-31.
- Diekmann, A. & Preisendörfer, P. (2003). Green and greenback. The behavioural effects of environmental attitudes in low-cost and high-cost situations. *Rationality and Society*, 15(4), 441-72.
- Fazio, R. H., Sanbonmatsu, D. M., Powell, M. C., & Kardes, F. R. (1986). On the automatic activation of attitudes. *Journal of Personality and Social Psychology*, 50(2), 229-38.
- Griskevicius, V., van den Berg, B., & Tybur, J. M. (2010). Going green to be seen: Status, reputation, and conspicuous conservation. *Journal of Personality and Social Psychology*, 98(3), 392-404.
- Grubb, E. L. & Grathwohl, H. L. (1967). Consumer Self-Concept, Symbolism, and Market Behavior: A Theoretical Approach. *Journal of Marketing*, 31, 22-7.
- Jackson, T., Papathanasopoulou, E., Bradley, P., & Druckman, A. (2007). *Attributing UK Carbon Emissions to functional consumer needs: Methodology and Pilot*. RESOLVE Working Paper.
- Levy, S.J. (1959). Symbols for Sales. *Harvard Business Review*, 37(4), 117-24.
- Midden, C. J. H. & Ritsema, B. S. M. (1983). The meaning of normative processes for energy conservation. *Journal of Economic Psychology*, 4, 37-55.
- Sadalla, E. K. & Krull, J. L. (1995). Self-presentational barriers to resource conservation. *Environment and Behavior*, 27, 328-53.
- Schahn, J. & Möllers, D. (2005). Neue Befunde zur Low-Cost-Hypothese: Verhaltensaufwand, Umwelteinstellung und Umweltverhalten. *Umweltpsychologie*, 9(1), 82-104.
- Sirgy, M. J. (1982). Self-Concept in Consumer Behavior: A Critical Review. *Journal of Consumer Research*, 9(3), 287-300.
- White, K. & Dahl, D. (2006). To be or not to be? The influence of dissociative reference groups on consumer preferences. *Journal of Consumer Psychology*, 16, 404-14.