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The reliance on symbolically significant behavioral attributes when judging energy consumption behaviors

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ABSTRACT

This research provides evidence for people's susceptibility to the *symbolic significance fallacy* when judging energy-related behaviors. The fallacy describes people's tendency to rely on symbolically significant behavioral attributes while neglecting other information. Participants were presented with two energy consumer descriptions. One entailed a positive symbolically significant attribute (e.g., driving a Prius) and a negative symbolically neutral attribute (e.g., covering 28,700 km); for the other one, the reverse was true (e.g., driving an SUV and covering 11,400 km). Thereby, the former actually consumed more energy. As expected, the energy consumer with the positive symbolically significant attribute was considered more energy conscious than the one with the negative symbolically significant attribute. The effect even persisted when providing detailed information on energy consumption, enabling an exact calculation, and asking to directly rate energy consumption. This research points to misperceptions in the estimation of energy consumption that could impede adoption of adequate energy-friendly behavior.

1. Introduction

Ms. Muller and Mr. Huber are colleagues at work. Ms. Muller lives distant from work and commutes to work each day by express train. The train ride to work takes about 1 h. Mr. Huber, on the contrary, resides close to the workplace and covers his daily commuting distance of 3 km (one way) by car. So, in regards to energy consumption, who is the good guy, and who is the bad guy? At first sight, the answer seems quite clear; traveling by train is the epitome of energy-friendly mobility behavior; that is, it symbolizes energy friendliness, and thus gives rise to the conclusion that Ms. Muller shows a more energy-friendly commuting behavior. However, taking a second, more critical look at the two commuting situations, it becomes clear that a crucial characteristic was not taken into consideration, the covered distance. Consequently, the previous judgment has to be relativized or even reversed.

The aim of the present paper is to provide evidence for people's susceptibility to rely on symbolically significant behavioral attributes (hereafter called the *symbolic significance fallacy*) in judgments related to energy consumption behavior and to illustrate its resulting effect on judgment accuracy. In the second step, it aims to demonstrate the stability of this effect and to rule out possible alternative explanations.

1.1. The symbolic meaning of energy-consumption behaviors

People perceive a person's behavior not simply as “ordinary” behavior, but also as an indirect statement about a person's values and convictions. Thus, a certain symbolic meaning is attributed to a specific behavior based on which individuals draw conclusions about a person's personality characteristics. Following the approach of “symbolic interactionism” (Blumer, 1969; Mead, 1934), those general symbolic meanings are negotiated and constructed through the social context of interaction (i.e., conversation), and are constantly redefined and renegotiated (for an overview, see Charon, 2007; Jackson, 2005). Applied to the subject of energy consumption, this means in particular that the social context defines which behavior is symbolic for energy friendliness and which one is symbolic for energy unfriendliness. This process goes along with the collective definition of normative expectations on how an energy-friendly consumer is supposed to behave (see, for example, Nye & Hargreaves, 2010). As such, the symbolic meanings people assign to behaviors or objects are constantly renegotiated and redefined in the course of social interactions in order to fit with current social norms, and are generally agreed upon and shared

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amongst people (for an overview, see Charon, 2007). Summing up, by engaging in a specific behavior, a person is automatically associated with the symbolic meaning of that behavior. This meaning consequently serves as the basis for drawing inferences about the person's image and personality. Thereby, people's evaluations of a person, such as whether he or she cares for the environment or not, is facilitated (Petkus, 1992).

The media plays a decisive role in the formation of symbolic meaning. Advertising, for example, represents a valuable means of communicating symbolic meaning (McCracken, 1986; Ottman, Stafford, & Hartman, 2006) since it is deemed to display versions of social life that are perceived as normative and ideal (Goffman, 1979). In the case of information or marketing campaigns that capture the issue of energy conservation, this means that desirable energy-saving behaviors are communicated. These desirable behaviors are consequently attributed the symbolic meaning of energy friendliness. The same holds true for the identification and definition of behaviors that contradict normative expectations, and thus are attributed the symbolic meaning of energy unfriendliness. With regard to environmentally responsible consumption, Petkus (1992) also highlighted the role of news media coverage, advertising, and product labeling in identifying the potential positive or negative environmental impact of products. According to Petkus (1992), these products and use behaviors consequently function as symbols of environmental responsibility or irresponsibility.

Several studies have provided evidence that the symbolic meanings of behaviors and products represent signals of a consumer's personality traits (i.e., identity) to a social audience. In investigating the symbolic meaning attributed to driving a battery-powered electric vehicle, for example, Skippon and Garwood (2011) found that a driver of a battery-powered electric vehicle was considered to be a person of high openness, high conscientiousness, and high agreeableness. Further support for the hypothesis that a symbolic meaning regarding environmental friendliness is attributed to products and related behaviors stems from a study by Heffner, Kurani, and Turrentine (2007). They found that people perceive the purchase of hybrid electric vehicles to symbolize environmental friendliness while the acquisition of SUVs symbolizes wastefulness. In terms of the symbolic significance of conservation and consumption behaviors, in general, there is high consensus among people (Sadalla & Krull, 1995). Consequently, given that the communication of identity (i.e., the self-presentational goal) represents a strong motivator for human behavior (e.g., Baumeister, 1982), in addition to functional and affective motives, symbolic motives (e.g., the expression of personal identity and values) may constitute an important behavioral driver (Morton, Schuitema, & Anable, 2011). In this vein, Heffner et al. (2007) provided evidence that people consider the purchase of a hybrid electric vehicle as a means to construct and communicate their personality through this widely recognized environmental symbol.

People consider conservation actions appropriate to a different degree for the communication of an interest in conservation (Sadalla & Krull, 1995). As a consequence, conservation behaviors differ in their symbolic significance. This could be due to differences in discussion frequency and intensity of the various energy-related behaviors, for example, due to differing media and information program coverage. Thus, conservation behaviors are discussed in social interactions to various degrees; therefore, they establish symbolic significances of differing degrees. Behaviors that are often discussed in social interactions (e.g., owning an energy-efficient car) are attributed to a strong symbolic meaning, whereas less prominent behaviors are perceived as less symbolic.

Summing up, we postulate that in the course of social interaction, a symbolic meaning is attributed to energy conservation and consumption behaviors. This symbolic meaning constitutes the basis of information interpretation and drawing inferences about a person's personality, such as about his or her energy consciousness.

1.2. The symbolic significance fallacy

When it comes to estimating energy consumption associated with certain behaviors or estimating the energy saved by certain conservation measures, people are generally subject to various misperceptions and misjudgments (e.g., Attari, DeKay, Davidson, & Bruine de Bruin, 2010; Baird & Brier, 1981; Kempton, Harris, Keith, & Weihl, 1984; Kempton & Montgomery, 1982; Schuitema & Steg, 2005). These misperceptions may partially be due to people's reliance on heuristics when evaluating energy consumption. It was shown, for example, that due to the visibility of energy consumption in the form of light, energy consumed by lighting is generally overestimated. The reliance on heuristics was also demonstrated for judgments related to other environmental issues, such as climate change (Joireman, Barnes Truelove, & Duell, 2010).

As suggested by Kahneman and Frederick (2002), a general feature of heuristic judgments is attribute substitution. They argued that a judgment is mediated by a heuristic whenever the attribute of the object a person wants to judge (target attribute) is not readily accessible. In this case, a person assesses the target attribute by substituting a semantically and associatively related property that comes to mind easier (heuristic attribute). Since the substituted heuristic attribute differs from the target attribute, systematic biases, such as weighting biases, are inevitably introduced. Weighting bias describes people's tendency to attribute either too much or too little weight to cues that are available for judgment. Consequently, this results in the neglect or underweighting of information that would otherwise be capable of supplementing or correcting the heuristic.

When it comes to judging the probability that a person belongs to a certain category (e.g., the category comprising energy-friendly consumers), the representativeness heuristic (Tversky & Kahneman, 1974) postulates that this judgment is based on the degree to which the person matches the stereotype of the category (cf. Kahneman, 2003; Kahneman & Frederick, 2002). The rationale of the representativeness heuristic is that a property of the prototype represents the heuristic attribute (Kahneman, 2003). However, in some judgment situations, there are two potential heuristic attributes that reflect prototype properties that are contradictory in nature—in the sense that they conform to conflicting prototypes. A car driver could, for example, drive a Toyota Prius but cover a very long distance each year with the car. The behavioral attributes may be equally representative for an energy-conscious or -unconscious person, but they may differ in their symbolic significance. Given such value-laden decision situations about topics that are particularly subject to social norms, such as environmentally friendly behaviors, attributes of strong symbolic significance are highly accessible and prevalent. We therefore contend that people base their judgments on the attributes with the higher symbolic significance in such situations. For the car-driver example, this means that people base their judgments on information about the energy-friendliness of the car (i.e., the car type), which is perceived as symbolic of energy consciousness as a result of existing social norms and communication through advertising and marketing campaigns. In line with the weighting bias, the symbolically significant attributes, which are the primary focus, are given substantial weight, whereas the less symbolically significant attributes, such as the distance covered, are largely neglected and thus underweighted. This neglect of potentially correcting information may result in an inadequate judgment. This is especially true when, as in this case, the symbolically significant attribute and the less