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Running head: SOCIAL LABELING AS A SOCIAL MARKETING TOOL

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Abstract

In this paper, we present a procedure to apply the social labeling technique as a social marketing tool. With four studies, we tested its potential for the promotion of pro-environmental consumer behavior. The procedure first provokes an environmentally friendly act and, subsequently, invites the target to attribute that behavior to his personal values, by communicating a social label. If successful, consumers will act upon the resulting self-perception as an environmentally friendly person. Results indicated that social labeling is more successful when cognitive resources are distracted, either at the moment of processing the label, or at the moment of making decisions related to the content of the label. Second, we found that the social label not merely guides subsequent decisions, but motivates people to re-interpret their previous behavior.

Keywords: Social Marketing, Social Labeling, Persuasion, Ecological Consumer Behavior, Distraction Effects, Mindlessness in Consumer Decision Making

Assuring a sustainable future requires us to use earth's resources cautiously. Consumer's choices and post-consumption behaviors have a considerable impact on, for example, energy use, toxic emissions, and waste production (Daly, 1996). A continued study of behavioral management techniques to promote pro-environmental consumer behavior is warranted.

Several researchers have identified the decision whether or not to behave pro-environmental as a social dilemma (e.g., Cialdini, Reno, & Kallgren, 1990; Van Vugt, Van Lange, & Meertens, 1996; Wiener & Doescher, 1991). Choosing to conserve the environment is considered to be a pro-social behavior because it serves the interest of society in the long term. On the other hand, behavioral costs associated with this type of actions, like money, time, effort, and inconvenience (Follows & Jobber, 2000; Pieters, 1989; Pieters, Bijmolt, van Raaij, & de Kruijk, 1998; Thøgersen, 1994a) tempt individuals to make selfish choices. It is the responsibility and the challenge of social marketers to persuade individuals to act in the benefit of society. In the social marketing tradition, the strategies chosen for this aim typically rely on the assumption that it is necessary to provoke some active contemplation of behavioral alternatives (Andreasen, 1995). Wiener and Doescher (1991) propose, for example, that consumers need to be convinced that the collective goal is worth pursuing and that it is likely to materialize. Further, they claim that social marketers should emphasize the importance of each individual's contribution. However, the traditional social marketing approach has not always met with unequivocal success. We propose another, complementary strategy, which consists of subtly activating the right (environmental) values and goals at the appropriate time. We will present the social labeling technique, which builds on this principle, as a promising method for promoting pro-environmental conduct. In four studies, we tested the possibilities and scope of this procedure.

The Traditional Social Marketing Approach

Social marketers generally use two types of persuasion strategies: the provision of incentives, and of information that should motivate the target audience to contemplate the consequences of their behavioral options. Both strategies have their merits, but are associated with possible backlash effects.

The provision of incentives has proven its effect in the short term. However, it has been argued that it is associated with two types of drawbacks. First, incentives are costly and their effect tends to disappear as soon as the incentive system is withdrawn. Second, providing incentives to individuals who were already intrinsically motivated to display the requested behavior may undermine this intrinsic motivation (Cameron & Pierce, 1994; Frey & Oberholzer-Gee, 1997; Ryan & Deci, 2000; Thøgersen, 1994b). In that case, withdrawing the incentive system may even result in a drop of the occurrence of the desired behavior below the initial baseline (Kahan, 1997).

Informative, argument-based pro-environmental messages are an essential tool to educate and sensitize a target audience on important issues. Caution is required, however, as research literature documents several mechanisms through which these messages might backfire. First, targets may show psychological reactance (Brehm & Brehm, 1981; Reich & Robertson, 1979); people are motivated to counter a perceived threat to their freedom of personal choice by doing the opposite of what the persuasion message suggests. Second, messages using a fear appeal aim at motivating people to think about possible disastrous consequences of non-ecological behavior. Provoking extreme fear, however, might lead to a process called fear control. Extreme fear is an aversive state, which individuals may try to evade by minimizing the perceived risks through source derogation, defensive denial, or wishful thinking. Successful fear reduction strategies will lead to a decreased likelihood of

engaging in corrective action to avoid the undesirable consequences (Witte & Allen, 2000). Third, social marketing messages discouraging non-desirable behavior may hold a “descriptive norm meta-message” (Cialdini, 2003). Saying that “a problematic behavior needs urgent attention because it is very prevalent” implies that it *is* a common behavior. Research on descriptive norms (Cialdini et al., 1990) suggests that simply *doing what everyone else is doing* is often preferred over *doing the right thing*. Therefore such a message, ironically, might be interpreted as a justification to keep on engaging in the undesirable behavior. Fourth, these messages may elicit a state of cognitive dissonance (Festinger, 1957), as people experience a contradiction between what they think they should be doing and their actual behavior. People might reduce dissonance by acting upon the (pro-environmental) value. However, cognitive dissonance may be resolved via other routes that do not result in the desired behavioral change. The least effortful way to reduce dissonance is not to change behavior, but to assimilate one’s behavioral and moral values regarding environmentalism to the (less pro-environmental) behavior (Albarracín & McNatt, 2005). Alternatively, avoiding dissonance may even be achieved by simply ignoring the request. Fifth, making people think about why they *should* act ecological, makes them think about why they *should not* as well (Warlop, Smeesters, & Vanden Abeele, 2003, p. 205). Making people think about public benefits will be likely to make them consider the private costs of the same behavior as well (Albarracin & Wyer, 2001). Additionally, this will also lead to thinking about the private benefits of alternatives. As private costs and benefits are more salient than public costs and benefits (Rothschild, 1979), such a deliberation process is likely to end with an individual choosing the selfish option (i.e., the non-environmentally friendly behavior).

Values versus Behavior

Because of the aforementioned reasons, promoting pro-environmental (consumer) behavior has proven to be a tough task with limited success. Notwithstanding, social marketers have been successful at creating awareness of environmental problems and many people have adopted ecological preservation values (EC, 2005). Thus has developed a value-behavior gap (Kollmuss & Agyeman, 2002; Mainieri, Barnett, Valdero, Unipan, & Oskamp, 1997; Oskamp, Harrington, Edwards, Sherwood, & Okuda, 1991). It seems that the traditional social marketing actions can not have more ambition than to cultivate these preservation values. Another approach, then, is necessary to translate these values into preservation behavior.

Many consumer choices are executed as part of a continuous stream of behaviors which are executed fairly automatically, based on minimal informational input (Alba, Hutchinson, & Lynch, 1991; Warlop et al., 2003). We consider low-involvement choices with an environmental impact to be no exception. In a decision situation, it will be the value that is temporarily most salient and perceived to be relevant that determines the behavioral choice. Construal level theory (Lieberman & Trope, 1998; Trope & Liberman, 2000) predicts that positive beliefs about a goal or value are more readily accessible in long-term decisions, whereas negative beliefs related to that goal (e.g., the difficulty to obtain it) predominate in short-term decisions. When challenged to contemplate the environmental impact of behavior alternatives by social marketing messages, one thinks abstractly about future behavior. In this case, positive beliefs related to conservation behavior are likely to be salient. This may lead to making personal resolutions to act upon this value in the future. In the here and now of making a decision, however, the benefits of the concrete, lower-order goal of serving the self-interest is likely to be more salient than the higher-order preservation goal. In a heuristic decision process, based on minimal information input, these proximal and salient personal consequences are more likely to be spontaneously on the top of one's mind. An alternative

social marketing approach, then, could consist of making the relevant (pro-environmental) thoughts more likely to be accessible *at the moment of decision making*.

We will test the potential of the social labeling technique for this aim. People prefer their actions to be consistent with their self-perceptions (Wells & Iyengar, 2005), and therefore we suggest that activating consumers' self-perceptions as environmentally friendly people should result in more ecological decisions.

Social Labeling

Social labeling is a persuasion technique that consists of providing a person with a statement about his or her personality or values (i.e., the social label) in an attempt to provoke behavior that is consistent with the label. The technique is believed to rely on a self-perception process and the fact that people's (interpretation of) past behavior guides future action (Albarracín & McNatt, 2005; Burger & Caldwell, 2003; Ouellette & Wood, 1998; Tybout & Yalch, 1980). According to Bem's (1972) self-perception theory, people get to know themselves much like they develop a perception of values and traits of others: by observing behavior and attributing it internal or to external influences. When they "see" themselves engaging in a certain act, for no apparent external reasons like incentives or social pressure, that behavior is internally attributed. It informs the individual about his or her personality traits and values. We propose that social labels, provided by others, can be an important source of information about an individual's traits and values as well, and can guide future decisions (Strenta & DeJong, 1981). According to this reasoning, environmental decisions are based on the implicit question "Am I the type of person who usually chooses the pro-environmental option?" (Burger & Caldwell, 2003; Vaidyanathan & Praveen, 2005). Providing a label offers an appealing answer to that question, as it involves minimal cognitive effort.

An early example of the effect of social labels is offered by Miller, Brickman and Bolen (1975). Describing a group of fifth-graders as tidy was more efficient in making them keep their classroom free of litter than an explicit plea for tidiness. Similarly, Allen (1982) showed that labeling a certain social group (“American consumers are willing participants in solving the energy problem”) in television ads lead to increased intentions to engage in energy-efficient consumption compared to a persuasive appeal. Labeling has shown to be especially effective when (1) it follows recent behavioral evidence, as people seek confirmation for their attributions before changing their attitudes (Scott & Yalch, 1980), and (2) it is consistent with the initial self-schema of the target (Tybout & Yalch, 1980). Kraut (1973) showed, for example, that individuals who were labeled as generous after making a donation were more likely to donate to a second charity two weeks later, than those who were not labeled. Tybout and Yalch (1980) provided false feedback on a survey, which supposedly measured interest in politics and elections. Participants, who heard they scored above average, were more likely to actually vote in an election a week later, than those said to be scoring average, but this effect only showed for participants who already had an initial voter self-schema. This led them to conclude that “strategies to influence behavior, like labeling, are likely to be particularly effective in situations where individuals have an initial interest in the focal behavior” (Tybout & Yalch, 1980, p. 412). We indicated before that research has observed a growing interest in environmental consumption over the past years (EC, 2005). Most people, therefore, have a self-schema, which includes the value of conserving the environment. This suggests that labeling should be an effective technique to promote environmental consumer behavior.

An Alternative Labeling Procedure

The foot-in-the-door procedure, which also relies on a self-perception process, requires that individuals are targeted personally (Scott, 1977). This limits the size of the audience that can be reached. In this paper, we will examine whether labeling is applicable in a mass-media approach. The increase in the size of the audience that can be addressed is at the expense of a loss of control and flexibility in addressing the individual. Unlike the foot-in-the-door procedure, which permits individuals to draw their own conclusions from manipulated behavior, a label actively proposes a certain (re-)attribution of previous behavior.

Allen (1982) included labeling messages in video ads, which targeted an entire target community at once. The ads referred to certain energy conservation behaviors most Americans engaged in, like switching off lights and turning down thermostats. This allowed him to link the label (“American consumers are willing participants in solving the energy problem”) to previous behavioral evidence, at least for those who actually engage in these behaviors. We propose a modified procedure, with a stronger link between the label and recent behavioral evidence, which should add to the strength of its effect, as discussed above (Scott & Yalch, 1980). Additionally, the consumer might feel more personally addressed, which should increase the feeling that the label applies to him or her.

In a first step of the alternative procedure, the consumer is provoked to perform a certain pro-environmental act. This could be, for example, the purchase of an environmentally friendly variety of a product, like bio-products or propellant-free deodorant. In some cases this will require some type of external motivation, like a price promotion. In other cases, the consumer might simply prefer the environmentally friendly product, because of other product features than its environmental friendliness. For example, consumers might prefer the smell of a certain deodorant which happens to be propellant-free. In a second step, a social label is provided which attributes the purchase to the consumers’ environmental values. For example, one could print a message on the packaging (e.g., “[brand X] – For

those who care about their environment”). This procedure allows for repeated exposure of the label to the consumer, each time he or she uses the product. As explained before, the social label informs the individual about his or her (pro-environmental) personality traits and values, in this case about environmentally friendliness. It invites the consumer to attribute the ecological purchase to their value of caring for the environment. In this paper, we want to examine whether it is possible to provoke an internal re-attribution of an externally motivated behavior. Internally attributed behavior is expected to lead to persistence of this type of behavior (Deci & Ryan, 1991).

Distraction Effects

Previous demonstrations of the labeling technique, in which the label followed a manipulated behavior, were mostly extensions of the foot-in-the-door procedure. After a first, modest request for help, targets who were labeled as helpful showed more compliance with a second, larger request for help than those who did not receive such a label (Crano & Sivacek, 1982; Gorassini & Olson, 1995; Hornik, 1988; Stimpson & Waranusuntikule, 1987). In the mentioned studies, attributing the helping behavior in the first request to the self is very plausible. Even without receiving the label, participants would have attributed their compliance to their helpfulness. The label merely confirmed this interpretation and made it more explicit. In our case, however, the social label proposes a *re-attribution* of a first behavior (Snyder & Uranowitz, 1978). Referring to our example, rather than attributing the provoked purchase to the lower price or the superiority of a product, the consumer is invited to attribute the choice to his or her pro-environmental values. We will test the labeling procedure’s potential at convincing consumers to re-attribute their initial behavior.

Consumers, who are aware of the actual determinants of their purchase, might realize the label is some sort of manipulation attempt, and reject its content (Burger, 1999). In order

to maximize the probability that the target accepts and acts upon the label, it should be communicated in such a way that it minimizes activation of persuasion knowledge (Friestad & Wright, 1994). In the case that information processing is constrained because people are under cognitive load, under time pressure, or distracted, it is harder to engage in such reflection (Baron, Baron, & Miller, 1973; Gilbert, Krull, & Malone, 1990). This implies that social labeling messages may have more impact when they are accompanied by some form of distraction (Bither, 1972; Festinger & Maccoby, 1964; Kumkale & Albarracín, 2004; Rosenblatt, 1966). Campbell and Kirmani (2000) observed that when their participants were cognitively “busy” (i.e., when they had to perform other simultaneous and cognitive demanding tasks), they were more prone to judge a salesperson giving a promotional talk as sincere, and thus be sensitive to his arguments. This effect even holds when the ulterior (persuasive) motive of the salesperson is highly salient (Bosmans & Warlop, 2005). This suggests that if, at the moment that the target receives the social label, cognitive resources are limited or directed elsewhere, the probability of accepting the label as a truthful self-description would increase, and hence would the impact of this information on subsequent decisions.

These effects might be accounted for by the literature on mindlessness in consumer decision making (e.g., Cialdini, 2001; Dijksterhuis, Smith, Van Baaren, & Wigboldus, 2005; Dolinski, Ciszek, Godlewski, & Zawadzki, 2002; Langer, 1992). Research in this area proposes that complying with a request as a result of social influence techniques is often a rather automatic response, which is especially prone to occur under conditions of relative mindlessness. For example, based on dual process theories (Chaiken & Trope, 1999), Fennis, Das, and Pruyn (2004) showed that the Disrupt-Then-Reframe technique (Davis & Knowles, 1999) works because the disruption acts as a distractor. It induces mindlessness and reduces counter-argumentation. When cognitive resources are scarce, people are not

capable of processing message characteristics carefully, and tend to rely on peripheral cues, like a social label (Chaiken, 1987; Petty & Cacioppo, 1986).

It seems reasonable to assume that these distraction conditions apply in the daily consumer context. Both the moments of purchasing and of using products, which carry the labeling message, are embedded in a continuous stream of mental activities. Either when coming across the social label while paying at the cash register and trying to remember where the car is parked, or when going over that day's appointments while applying deodorant in the morning, our limited cognitive resources are directed elsewhere. We expect the labeling procedure to work in common, cognitively demanding circumstances.

Overview of the Studies

In a first study we tested our alternative labeling procedure, and verified whether cognitive distractions facilitate the labeling effect. In Study 2 we tested our explanation for the distraction effect more directly: distraction prevents the activation of persuasion knowledge. It reduces contemplation on the veracity of the self-description the label provides. In this study, we also tested whether the social label merely acts as a guide for future decisions or whether it also provokes a re-attribution of the initial pro-environmental behavior. We went on to test whether the labeling effect generalizes to situations in which the cognitive impairment occurs *during* choice making choices rather than during the exposure to the label (Study 3) and to other types of cognitive impairments (Study 4).

Study 1

Allen (1982) tested the potential of social labeling for mass communication application. Like in that study, we compared the effect of providing a social label with that

of a content-based persuasion message, which communicates arguments in favor of pro-environmental behavior. We predicted a superior effect of the social label compared to content-based persuasion messages. Rather than using a general label, addressing a community as a whole (Allen, 1982), we applied a more individualized approach which links the label to recent behavioral evidence. To do so, we used a task that provokes a pro-environmental choice that is, however, not driven by pro-environmental values but by a subtle external motivation. The subsequently provided label suggested an internal re-attribution of that choice to personally held pro-environmental values. We hypothesized that the social label would be effective if the participants' cognitive resources are impaired or directed elsewhere at the moment of processing it. If they are not distracted, however, we predict that elaborate processing of the content of the social label will lead to its dismissal. Therefore we expect no effect of the social label in the condition where participants are not distracted.

Method

Participants and Design

One hundred and one undergraduate students (40 male, 61 female) were paid 6 € for participation in this study, which took about 50 minutes. Upon arrival in our lab, in groups from five to eight, they were seated in front of a computer screen in a semi-closed cubicle. The experimental design included two between-subject factors. These were communication type (label, explicit plea, and control) and cognitive load (load and no load).

Procedure and materials

TV-choice task. First, participants completed a TV-choice task on paper (adapted from Verplanken & Holland, 2002). This task was meant to provoke an environmentally friendly choice. We constructed a list of seven TV's, which were rated on seven attributes (Image quality, image quality in sunlight, sound quality, remote control quality, ecological

aspects, ease of programming and speed of changing channels). This information was represented in a 7 by 7 brand-by-attribute matrix, see Figure 1. In the rows of the matrix the seven TV's were listed, represented with letters from A to G. The seven attributes were listed in the columns of the matrix. One of five possible symbols (--, -, 0, +, ++) evaluated every TV on every attribute. Above the choice matrix a short legend explained what the attributes referred to. The 'ecological aspects' attribute was explained to refer to electricity consumption and the degree to which the TV-set contains polluting components and (non)recyclable materials. TV-set 'C' was superior on both image and sound quality. These dimensions were pre-tested ($N = 54$) as the most important features in the choice for a TV-set. Consistently, all participants chose this TV. Importantly, TV C was also rated best on 'ecological aspects' (++). This way, participants were provoked to make an externally motivated environmentally friendly choice.

Insert Figure 1 about here

Manipulations of communication type and cognitive load. Subsequently, participants were randomly assigned to one of three conditions. Those in the labeling condition received feedback on their choice. This feedback communicated the social label. Instructions that appeared on the screen explained that the TV-choice task was used by an important consumer organization to identify different segments of consumers. For every possible TV-choice, a description was given of the typical consumer choosing that TV-set. The description for the specific TV a participant chose was highlighted. For TV C, the description said that the typical consumer choosing this option was 'very concerned with the environment, and ecologically conscious'. A second group, assigned to the explicit plea condition, read an explicit plea for ecologically conscious consumer behavior. Additionally,

it provided some tips for reducing waste production and efficient recycling. A third, control group did not get any information in this phase.

Within each of the three groups, half of the participants were assigned to the cognitive load condition. The cognitive load task consisted of remembering a six-digit number (Gilbert, Pelham, & Krull, 1988; Shiv & Fedorikhin, 1999). Participants were instructed to do so after entering the TV-set of their choice and before getting feedback. After reading either the social label, the explicit plea, or nothing at all, they were asked to recall the number they were supposed to remember. Five participants (5 %) failed to reproduce the correct number, and they were discarded from further analysis.

Dependent measure: the product choice task. After 15 minutes of unrelated filler tasks, participants completed a product choice task. This task consisted of making 10 product choices. Participants were presented with 10 product pairs: five filler pairs and five critical ones. In each critical pair, one product was a more environmentally friendly but more expensive alternative of the other. We asked participants to indicate which product they would pick if they were to purchase them now. The critical product categories were cookies (differing in the amount of plastic used for wrapping), kitchen paper, deodorants, (energy-efficient) lamps, and detergents. For eight product categories, the price of the more environmental product was 1.05 € whereas the less environmental product cost 0.95 €. For the lamps, the prices were 1.50 € and 1.30 €, respectively, and for detergents, they were 1.40 € and 1.30 €, respectively. These prices were pre-tested in a different sample of the same student population ($N = 34$), by informing participants about the shop value of a certain object and asking them which (higher) price they would be willing to pay for a more ecological variant of that product. We used the median price mentioned for the ecological products in the choice task. The 10 product choices appeared in random order on the screen. We counted the number of environmentally friendly choices participants made on the five critical items, which constituted our dependent variable.

Results

We conducted a three (communication type: label, explicit plea, and control) by two (cognitive load) ANOVA. This revealed a significant interaction between communication type and cognitive load ($F(2, 90) = 5.77; p < .01$), and a marginally significant main effect of communication type ($F(2, 90) = 2.86; p = .06$), see Figure 2. As expected, planned contrasts revealed that within the no load condition, communication type had no effect ($F < 1$), whereas in the load condition, it had ($F(2, 42) = 6.61, p < .01$). Tukey pairwise comparisons showed that, under cognitive load, participants in the social label condition ($M = 3.67$) made more environmental choices than those in the explicit plea ($M = 2.56, p < .02$) and the control condition ($M = 2.29, p < .01$). We found no differences between the explicit plea and control group within the load condition ($F < 1$).

Within the social label condition, cognitive load ($M = 3.67$) led to more environmental choices than the absence of load ($M = 2.53, F(1, 90) = 9.44, p < .01$). Neither in the explicit plea condition ($F(1, 90) = 1.44, p = .23$) nor in the control condition ($F < 1$), we observed a cognitive load effect.

Insert Figure 2 about here

Discussion

We found evidence for cognitive distractions moderating the impact of a labeling procedure. Processing the label while cognitive resources are directed elsewhere resulted in using it as a guide in subsequent decisions. When cognitive resources were not limited, the social label did not have any effect. We assume that cognitive distractions, such as load, prevent the activation of persuasion knowledge, because it impairs reflection on the actual reason of the TV-choice. If that is true, then motivating participants to reflect on the actual

reasons for the purchase, after receiving the social label when mentally distracted, should suppress the labeling effect. We will test this hypothesis in the next Study. The content-based persuasive message did not influence later decisions in any case.

Study 2

The aim of this study was to replicate the labeling effect of Study 1, and to provide additional insight in the process. We tested the hypothesis that cognitive distractions prevent the activation of persuasion knowledge because they impair reflection on the actual reason of the TV-choice. We used the same procedure as in Study 1, and added a factor. We asked half of the participants to reflect on the actual reasons for choosing the TV-set that they did. We asked them to indicate, after completing the TV-choice task and the subsequent manipulation, for each of the seven attributes on which the TV's were rated, how important it had been in making the TV-choice. Each attribute was given an importance-score on a 25-point scale. Additionally, we asked the other half of participants to do the same, but only *after* the dependent measure was completed. This allowed us to verify the extent of the impact of the social label: Is it merely a guide for subsequent decisions, or does it provoke an internal (re-)attribution of the TV-choice? We dropped the explicit plea condition from the design, because it did not add extra information in the first study.

Method

Participants and design

One hundred fifty-eight undergraduate students received 6 € for participation in the experimental session, which lasted about 50 minutes. The experimental design included 3 between subject variables. These were communication type (social label versus control),

cognitive load (load versus no load), and reflection (reflection on TV-choice versus no reflection).

Materials and procedure

Upon arrival in the lab, in groups of five to eight, participants were requested to take a seat in front of a computer screen in a semi-closed cubicle. First, they completed the TV-choice task. Four participants (2.5 %) did not pick the TV-set which scored superior on image and sound quality and were discarded from further analysis. Then we manipulated communication type and cognitive load in an identical way as we did in Study 1. Directly after these manipulations, half of the participants were asked to indicate to which degree each of the seven attributes, on which the TV-sets were rated, had determined their TV-choice, on a 25-point scale (ranging from *not important at all* to *very important*). We reasoned that this task elicits reflection on the initial TV-choice and would allow participants, who received the label under load, to realize what the actual reason was to choose the TV-set they chose. After 15 minutes of unrelated filler tasks, participants completed the product choice task. Finally, those participants, who did not indicate the importance of the seven attributes before, did so at the very end of the procedure.

Results

Product-Choice Task

We conducted a two (communication type: label versus control) by two (cognitive load: load versus no load) by two (reflection on TV-choice versus no reflection) ANOVA. This resulted in a significant three-way interaction ($F(1, 146) = 5.16, p < .03$), see Figure 3. We replicated the results of Study 1 in the no reflection condition ($F(1, 146) = 8.84, p < .01$), see left panel of Figure 3. Here, the social label produced more environmentally friendly choices when communicated under load ($M = 2.94$) than in the no load condition ($M = 1.86, F(1, 146) = 9.07, p < .01$). In the control condition, we did not observe an effect

of cognitive load ($F(1, 146) = 1.28, p = .26$). Within the load condition, those participants who were labeled made more ecological choices than those who were not ($F(1, 146) = 13.49, p < .01$). Within the no load condition, there was no effect of communication type, $F < 1$.

As expected, allowing participants to reflect on their TV-choice suppressed the labeling effect. Within the reflection on TV-choice condition, the main effects and the interaction between communication type and load did not reach significant (all F s < 1), see right panel of Figure 3.

Insert Figure 3 about here

Ratings of Attribute-importance in the TV-choice

We calculated the relative importance attached to the ecology attribute, for those participants who indicated the importance of each of seven attributes at the end of the experiment. We divided the rating given to this attribute by the sum of the ratings given to the seven attributes. An increase in the importance attached to the ecology attribute, would mean that the manipulation was successful at suggesting a re-attribution of the TV-choice. We found an interaction effect ($F(1, 76) = 4.59, p < .04$), see Figure 4. Within the labeling group, those who received the distracting load task rated the ecology attribute as more important for their TV-choice ($M = .15$) than those who did not ($M = .10, F(1, 76) = 4.41, p < .04$). Within the control group, there was no effect of cognitive load ($F < 1$). Under cognitive load, those who received the label rated the ecology dimension as more important than those who were not labeled ($M = .10, F(1, 76) = 6.39, p < .02$). Without load, there was no effect of communication type ($F < 1$).

Insert Figure 4 about here

Discussion

This study added more insight in the process of social labeling in two ways. First, we obtained support for our hypothesis that cognitive load facilitates the labeling effect because it reduces the activation of persuasion knowledge. Processing the label under load prevented the participants initially to question the truthfulness of the label. By making them reflect on their TV-choice immediately after receiving the label, however, we allowed the participants to correct for the re-attribution the label proposed. Second, the impact of the label appeared to extend beyond a mere self-perception process, to an active re-attribution of the initial TV-choice. The label influences the interpretation of previous behavior, and makes environmental values more salient (Alba et al., 1991; Snyder & Uranowitz, 1978). Several theories predict that the salience of certain values increases the probability of acting upon them (Albarracin & Wyer, 2001; Bem, 1972; Schwarz et al., 1991). We have shown that it is possible to increase the salience of a certain value, in this case environmental friendliness, by suggesting to (re)attribute an externally provoked act to that motive.

Study 3

For practical purposes, it is important to know whether a social label can influence targets' behavior, even if it has been processed with full attention. We explore this possibility in this and the following study. Work on assimilation and contrast effects (Martin, Seta, & Crelia, 1990; Meyers-Levy & Tybout, 1997) showed that whether possible counter-arguments regarding an issue will be retrieved later on, is determined by the availability of cognitive resources at the moment of retrieval. Findings of Schwarz and Bless (1992) and Meyers-Levy and Tybout (1997) claim that the same factors determine the effect of a contextual cue (e.g., the label), regardless of whether this influence occurs at encoding

or at judgment (when retrieving the cue). Therefore we predict that the label will be effective if participants are cognitively distracted at the moment of decision making, even if they processed the label with full attention. The persuasion knowledge that was activated at the moment of processing the label will not be recalled at the moment of using the label as a guide to make decisions. We verify this hypothesis in the present study. We replicate Study 1, changing one aspect in the design. In this study the cognitive load task is situated at the moment of making ecology-related decisions, and not at the moment of processing the social label.

Method

Participants and design

Eighty-six undergraduates participated in this study, and were paid 6 € for participation in an experimental session, which lasted about 50 minutes. We manipulated two between-subjects factors: communication-type (label versus control) and cognitive load (load versus no load).

Procedure and materials

First, participants completed the TV-choice task and were randomly assigned to one of two conditions. One group received the social label as feedback on their choice and the other group did not get any information. Six participants (7 %) did not choose the superior TV-set and were discarded from further analysis. After 15 minutes of unrelated filler tasks, participants completed the product choice task we used in Study 1 and 2. Orthogonally with the communication manipulation, we asked half of the participants to remember a six-digit number while making their product choices.

Results

An ANOVA revealed a significant interaction between communication and cognitive load ($F(1, 76) = 6.87, p < .01$), see figure 5. As predicted, participants in the labeling condition who made their choices under load ($M = 3.15$), chose more environmental products than those who were not cognitively distracted ($M = 1.91, F(1, 76) = 8.93, p < .01$). In the control condition we found no effect of cognitive load ($F < 1$). In the load condition, labeling ($M = 3.15$) led to making more ecological choices than in the control condition ($M = 1.77, F(1, 76) = 9.91, p < .01$). In the condition without cognitive load, we did not observe a labeling-effect ($F < 1$), see figure 5.

Insert Figure 5 about here

Discussion

As we predicted, distracting cognitive resources at the moment of making purchase decisions, allowed the labeling effect to emerge. This suggests that when cognitive resources are available, consumers recall the persuasion knowledge associated with the information provided by the label. Under load this recall seems to be suppressed. This finding implies that a labeling message should work, unless the consumer is fully focused on the task at hand, both while processing the label and while purchasing a product. If at any of both moments attention is distracted, persuasion knowledge is either not activated, or not recalled, and the social label will influence purchase decisions. We indicated before that most situations in our daily lives feature a large number of stimuli competing for our limited cognitive resources. Therefore we argue that cases, in which consumers are fully focused on both critical occasions in the labeling procedure, are rather exceptional.

Study 4

In this study, we tested whether the previous results would generalize to other types of cognitive distractions. Research on the relative impact of product attributes, differing in salience, on consumer decision making, has shown that both cognitive load (Shiv, Fedorikhin, & Nowlis, 2005) and repeated decision making (Bruyneel, Dewitte, Vohs, & Warlop, 2006) have similar effects. These situational aspects decrease the relative impact of cognitive product features (e.g., healthiness) on subsequent choices, through a process called ego-depletion (Vohs & Baumeister, 2004). This suggests that repeated choice making is an alternative procedure that reduces the availability of cognitive resources. In this study, we verified whether repeated choice making has a similar effect as cognitive load on the impact of the social label. We hypothesized that making repeated decisions would result in an effect of the labeling procedure.

Method

Participants and design

One hundred fifty-seven undergraduate students (65 men and 91 women) participated in the experimental session, which lasted about 50 minutes, in return for 6 € We included one between subjects factor (communication type: label versus explicit plea) and one within subjects factor (three decision rounds) in the design.

Procedure and materials

Manipulation. Like in previous studies, participants started with the TV-choice task. Eight participants (5.7 %) were discarded from analysis for not choosing the superior set. After choosing their preferred TV-set, respondents were randomly assigned to one of two communication type conditions. As explained, we expected that repeated choice making would constitute a strain on participants' cognitive resources. Therefore, like in circumstances with cognitive load, we expected the impact of the social label to emerge after repeated choices. We wondered whether a similar effect would show in case of an

explicit plea. After all, the flaws associated with such an approach, which we discussed in the introduction, like reactance (Brehm & Brehm, 1981), cognitive dissonance (Festinger, 1957) and thinking about costs of the promoted behavior (Warlop et al., 2003), are all the result of cognitive elaboration on the information the plea provided. Perhaps the repeated decision would decrease the salience of these ponderings. To constitute a conservative test of our hypothesis, we therefore selected the explicit plea condition as a control condition in this study.

Repeated choices public good dilemma. After fifteen minutes of unrelated filler tasks, participants completed the dependent measure. We constructed a repeated choices public good dilemma, which was framed as an ecological task. We asked participants to imagine that they were to buy 10 bags of potato chips for a party. The potato chips alternatives were either packed in conventional or in bio-degradable bags. Participants had to indicate how many items of each type they would purchase (summing to 10). Instructions on the computer screen explained that the bio-degradable bags were more expensive (1.35 € versus 1.10 €), because they had a lower market-share. An increased demand would lead to lowering of the prices for this type of packaging. A group of eight participants played the public good game. They were told that if the group as a whole would buy a sufficient number of bio-degradable bags, the price would drop in the next round of the game, in which they had to buy 10 more bags. In total, participants played three such rounds. We did not specify the number of bio-degradable bags they collectively needed to buy to produce the price drop. Had we done so, most participants would choose the “equal cost share” strategy, stating that everyone contributes his or her fair share to obtain the public good (in this case, the price drop) (Bagnoli & McKee, 1991). After each round, all participants received bogus feedback, which indicated that the public good was not obtained.

Results

We conducted a repeated measures ANOVA with one between subjects variable (communication type: social label versus explicit plea) and the three rounds of the public good game as a within subjects variable. These rounds constitute the repeated decisions. We found significant differences between rounds ($F(2, 294) = 48.94, p < .01$), see Figure 6. In round 2 ($M = 6.82$) participants chose more bio-degradable bag than in round 1 ($M = 5.23, F(1, 147) = 40.08, p < .01$), and in round 3 ($M = 7.86$) more than in round 2 ($F(1, 147) = 17.47, p < .01$). This is evidence for the fact that participants were motivated to achieve the public good (Rondeau, D. Schulze, & Poe, 1999). More importantly, we found a significant interaction between communication type and decision round, $F(2, 294) = 5.89, p < .01$. In round 1 and 2, we did not find differences between communication conditions (F 's < 1). In round 3 however, participants who had received the social label, chose more bio-degradable bags ($M = 8.65$) than those in the explicit plea condition ($M = 7.06, F(1, 147) = 9.30, p < .01$). In the labeling condition, participants increased their share of bio-degradable bags ($M = 8.65$) compared to round 2 ($M = 6.90, F(1, 147) = 23.75$), but this was not the case for participants in the explicit plea condition ($F < 1$).

Insert Figure 6 about here

Discussion

The depleting nature of repeated choice making (Bruyneel et al., 2006) increased the impact of the social label as a guide for environmental decision making. Initially, participants chose, on average, a fifty-fifty distribution between traditional and bio-degradable bags. As this proved not to be sufficient for achieving the public good (i.e. the price drop), in round 2 the share of bio-degradable bags increased, indicating participants were motivated to achieve the public good, at a personal expense. In round three, the distribution remained constant in the explicit plea, whereas in the label condition the share

of bio-degradable bags further increased. The results in this third round are comparable with those of the cognitive load conditions of the previous studies. This suggests that the suppression of the persuasion knowledge effect generalizes to other circumstances which distract cognitive resources. As conditions of cognitive load or repeated choosing are prevalent in our daily lives, this finding suggests the social labeling procedure is widely applicable.

Findings in the explicit plea group in the first and the fourth study, add to the observation made in the introduction, that providing people with ‘food for thought’ is not an efficient strategy, certainly in domains where the attitude towards the behavior (e.g. paying a higher price for the same functionality) is more negative than the attitude towards the overarching value (i.e. being an environmentally conscious consumer). We did not observe a ‘sleeper’ effect as a result of repeated decision making (Kumkale & Albarracín, 2004).

General Discussion

Our findings indicate that social labeling is a promising tool, applicable in mass-media contexts. We proposed a new procedure, in which the label directly follows recent behavioral evidence. First, targets are provoked to engage in a pro-environmental behavior. Subsequently, the label proposes the target to attribute that behavior to his or her personality and values. We tested the effect of this procedure on ecological behavior, although it should be equally applicable to other areas of social desirable behavior, like health behavior, voting and helping behavior.

Social labeling proved effective when cognitive resources were constrained, either at the time of the communication or at the time of the decision. We argued that this requirement is the rule, rather than the exception in real life, since the majority of our daily activity is part of a stream of continuous and overlapping mental activities. We further

argued that the effect of cognitive distractions is due to the suppression of persuasion knowledge activation. Our findings contribute to the literature on mindlessness in consumer decision making (e.g., Cialdini, 2001; Dijksterhuis et al., 2005). For example, Fennis, Das, and Pruyn (2004) showed that the Disrupt-Then-Reframe technique (Davis & Knowles, 1999) works because the disruption acts as a distractor. It induces mindlessness and reduces counter-argumentation. Albarracín and Kumkale (2003) showed that extraneous affect does not influence decisions when level of processing is high, because people then recognize that the affect is not relevant for the decision at hand. In line with these findings, our data showed that favoring mindless, automatic processing of a social label rendered targets more vulnerable to the persuasion attempt. The implication seems to be that unconscious processing is less critical and unable to reject information as untrue or invalid, compared to conscious processing (e.g., Gilbert et al., 1990). The unconscious seems to accept just everything. Future research on this topic is warranted.

Previous research has suggested that such subtle techniques, requiring minimal conscious thought, may be more effective on the longer term effect than campaigns provoking people to explicitly contemplate consequences of behavioral alternatives by providing arguments (Albarracin & Wyer, 2001). Albarracin & McNatt (2005) studied the effects of past behavior on attitudes towards university policies. Participants were led to believe that they had unconsciously supported or opposed a social policy. This feedback had direct effects on attitudes about the policy and expected outcomes of the policy. Self-perception effects lasted longer than more specific elaborations about the outcomes of the policy.

We included an explicit plea condition in Study 1 and 4, to compare the effect of our labeling procedure with the practice of providing argument-based messages. In neither case these explicit messages resulted in an increase of pro-environmental decision-making. In the introduction we discussed several mechanisms, which might be responsible for the lack of a

direct influence of such messages on behavior, like psychological reactance (Brehm & Brehm, 1981; Reich & Robertson, 1979), fear control (Witte & Allen, 2000), communicating a descriptive norm meta-message (Cialdini, 2003), solving cognitive dissonance by altering values rather than behavior (Albarracín & McNatt, 2005), and the fact that making people think about public benefits will be likely to make them consider the private costs of the same behavior as well (Warlop et al., 2003, p. 205). We obviously do not dispute the value of educational campaigning. Lack of knowledge is an important predictor of non-compliance to social desirable behavior in many domains. We do suggest, however, that this approach needs to be complemented with an additional effort to render the promoted pro-social (e.g., pro-environmental) values salient at the moment of decision making. Construal level theory (Trope & Liberman, 2000) states that at the moment of decision making, salient motives like self-perception tend to have a strong impact on behavior. Persuasion tools like social labeling seem to be the appropriate complement to education based campaigns. They render pro-social values salient in the context of decision making. Additionally, they approach the consumer in a positive way, describing him or her in a social desirable fashion. People are more likely to comply with a request when addressed positively. Negatively framed messages which emphasize problematic behavior tend to elicit feelings of guilt, reactance, or resentment (Reich and Robertson, 1979), which reduce the likelihood of compliance.

Social labeling is related to techniques using descriptive social norms as a persuasion technique (Cialdini, 2003; Cialdini et al., 1990). However, rather than invoking social norms, social labeling suggests the existence of *personal norms or values* to engage in a certain pro-social behavior. Our data showed that describing a target as having certain values increases the chance of them acting upon those values later on. Study 2 suggested that social labeling even results in consumers changing their interpretation of previous behavior in line with the value suggested by the label. Especially in situations where the

social descriptive norm is *not to engage* in a certain social desirable behavior, a persuasion tool suggesting such personal norms could be a useful alternative.

Future work should look into the effect of the relative desirability of the personality trait or values that the label communicates. People are motivated to elevate their self-conceptions and to protect their self-concepts from negative information (Sedikides & Strube, 1997). Therefore they may be more willing to act upon the communication of a desirable social label, compared to an undesirable one. Therefore, people for whom “being environmentally friendly” sounds positive should be persuaded more than those for whom it sounds negative. Other values a social marketing campaign may wish to activate through a labeling procedure (e.g., eating healthy, engaging in physical activity, buying products from the fair trade circuit) may be perceived as positive or negative by different segments of consumers. Perhaps people do accept labels which elevate their self-concept, also in the case that cognitive resources are abundant. On the other hand, it is possible that labels which are evaluated negatively are rejected, even under cognitive load conditions. It is important to extend our understanding of social labeling effects as it is an easily applicable tool to market social desirable or pro-social behavior.

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Figure Captions

Figure 1. The TV-choice task

Figure 2. Number of environmental choices as a result of communication type and mental load conditions, Study 1

Figure 3. Number of environmental choices made. The no reflection condition replicated Study 1, left panel. Reflection suppressed the labeling effect, right panel (Study 2)

Figure 4. Importance attached to ecology-dimension, Study 2

Figure 5. Product choices in Study 3

Figure 6. Number of biodegradable bags chosen in the environmental social dilemma task, Study 4

Figure 1.

TV-set	Image Quality	Image Quality in sunlight	Sound Quality	Remote Control Quality	Ecological Aspects	Ease of Programming	Speed of Changing Channels
A	++	-	0	0	--	0	-
B	--	0	++	+	-	0	+
C	++	0	+	+	++	+	+
D	+	-	--	0	-	+	++
E	-	-	0	++	+	+	-
F	++	0	+	+	0	+	+
G	0	++	--	+	-	0	+

Figure 2.

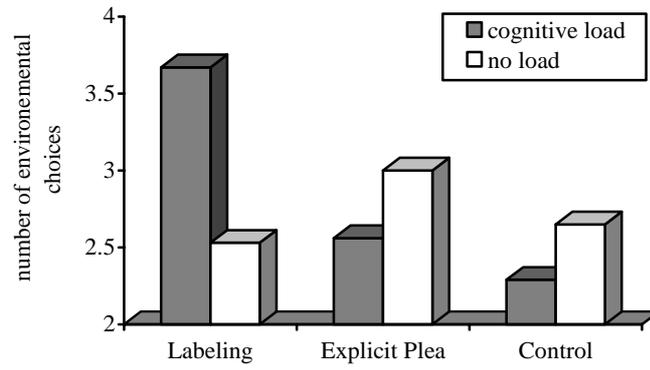


Figure 3.

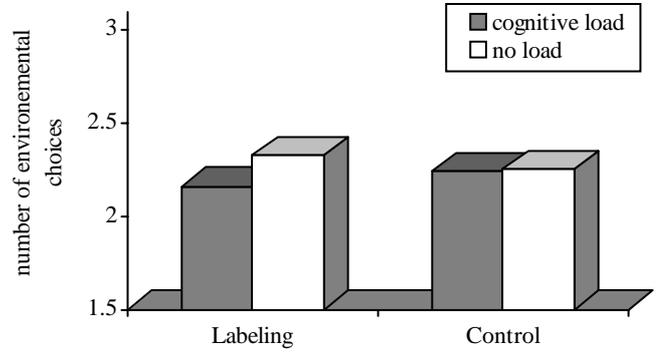
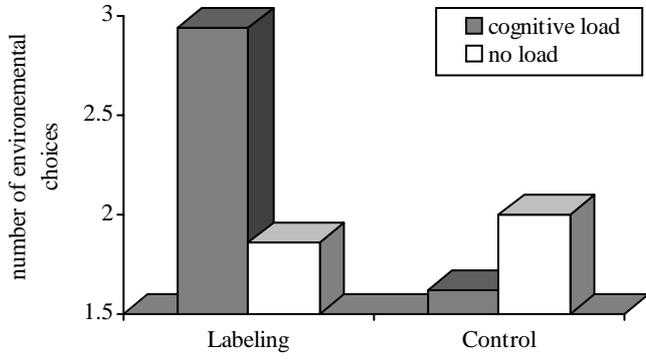


Figure 4.

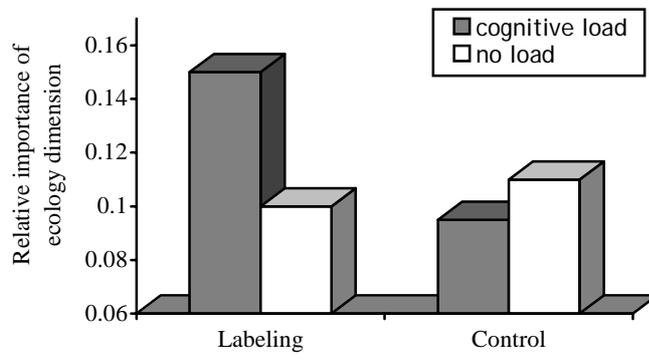


Figure 5.

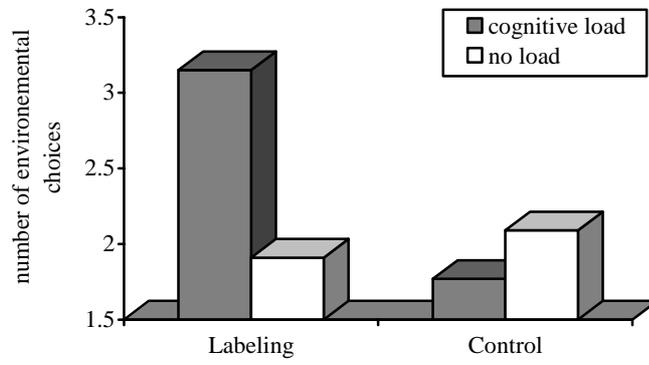


Figure 6.

