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In the present work we test whether the effectiveness of ecological messages may be canceled out when they conflict with the descriptive norm that is salient in the situation. In two studies, participants were unobtrusively observed while performing an ecologically relevant behavior: leaving lights on or off when exiting a public space. The results of Study 1 showed in two different settings (i.e., public washrooms of a university and of a restaurant) the powerful influence of focusing a descriptive norm that refers to such behavior, even when this descriptive norm is not sustained by the injunctive norm. The results of Study 2 showed the overall ineffectiveness of ecological messages when the information in the message was in conflict with the descriptive norm made salient by the context. Additionally, the results of a Follow-up Study suggested that vividness-congruency may increase the effectiveness of the message. Both the theoretical and practical implications of these results are discussed.

Keywords: focus theory, descriptive norm, injunctive norm, ecological behavior, vividness-congruency.

En este trabajo se comprueba si los mensajes de tipo ecológico pierden efectividad cuando entran en conflicto con la norma descriptiva; es decir, la percepción sobre cómo se comportan las personas en una situación concreta. En dos estudios se observó la conducta de dejar las luces apagadas o encendidas al salir de un espacio público. En dos contextos diferentes (i.e., los servicios de una universidad y de un restaurante) los resultados del Estudio 1 mostraron como el comportamiento se ajusta a la norma descriptiva saliente. Los resultados del Estudio 2 mostraron que los mensajes ecológicos no son efectivos cuando la información contenida en dichos mensajes entra en conflicto con la norma descriptiva saliente. Además, los resultados de dos estudios complementarios mostraron que la influencia de la norma descriptiva era independiente de la norma prescriptiva, y que la efectividad del mensaje ecológico puede incrementarse si despierta una imagen clara y coherente con el comportamiento que se pretende provocar (i.e., vividness-congruency).

Palabras clave: teoría focal, norma descriptiva, norma prescriptiva, conducta ecológica.

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According to Cialdini, Kallgren and Reno (1991) there is no current consensus within social psychology about the explanatory and predictive value of social norms (for a review, see Cialdini & Trost, 1998). They thus propose the Focus Theory of Normative Conduct, in which it is argued that the impact of social norms on behavior could be clarified by applying two theoretical refinements. First, this model establishes the distinction between two kinds of norm: descriptive and injunctive. Following the definition proposed by Cialdini et al., “the first of these, descriptive norms, specify what most people do in a particular situation, and they motivate action by informing people of what is generally seen as effective or adaptive behavior there. Injunctive norms, on the other hand, specify what people approve and disapprove of within the culture, and motivate action by promising social sanctions for normative and counter-normative conduct” (Reno, Cialdini, & Kallgren, 1993, p. 104). Thus, descriptive norms refer to what most people do in a given situation, with no necessary implication of whether it is right or wrong. For example, the majority of Spaniards may prefer to eat fish than vegetables, whereas the majority of North Americans may prefer to eat meat than vegetables, but there would be nothing immoral about either a Spaniard or a North American who decided to become a vegetarian. On the other hand, an injunctive norm is a social expectation about what people should do in a particular situation. For instance, not stealing food is usually considered right and proper, regardless of how many other people do or do not behave in that way.

As to the second theoretical refinement, Cialdini et al. posit that “a particular social norm –of either the descriptive or injunctive variety– is unlikely to influence behavior unless it is focal (i.e., salient) for an individual at the time of behavior” (Kallgren, Reno, & Cialdini, 2000, p. 1002). This is based on the substantial evidence that people try to adapt their behavior to be congruent with the stimulus that is drawing their attention. To test the central hypotheses derived from their Focus Theory of Normative Conduct, Cialdini et al. chose a typical example of ecological behavior (i.e., littering), and actually managed to influence this behavior in an effective way (Cialdini, Kallgren, & Reno, 1991; Cialdini, Reno, & Kallgren, 1990; Kallgren, Reno, & Cialdini, 2000; Reno, Cialdini, & Kallgren, 1993).

An important implication of this model is that descriptive and injunctive norms related to a specific behavior may occasionally conflict; that is, although what is usually done and what is usually approved are frequently the same, this is not always so. For example, the vast majority of pedestrians in a big city may agree with the need to keep the streets clean, but at the same time those pedestrians may see many places strewn with litter. Indeed, to illustrate this conflict, Cialdini et al. (1991) began one of their first articles about Focus Theory by describing a famous advertisement against littering shown on public TV in the United States. This commercial showed a Native American who, after paddling his canoe up a river contaminated with various forms of individual and industrial pollution, watches as a bag of garbage is thrown from the window of a passing car. At that moment, the camera pans to the Indian’s face, a tear dripping down his cheek, and the following slogan appears: “People Start Pollution, People Can Stop It”. Without denying the strong impression caused by this commercial, Cialdini et al. express their doubts about its effectiveness for reducing littering. The authors suggest that the makers of the commercial may have unintentionally designed a situation in which two norms conflict: the ecological injunctive norm, made salient by both the Indian’s tear and the slogan, and the antiecological descriptive norm (i.e., “most people litter”), made salient by the heavily contaminated environment.

The actual power of the descriptive norm

In this work we test how powerful the influence of a specific descriptive norm is when (a) it is separated from the possible influence of the injunctive norm (Study 1), and (b) it conflicts with other normative influences (Study 2). Cialdini and collaborators have shown through several experiments that focusing people on descriptive or injunctive norms produces behavior consistent with those norms. However, when the ecological descriptive norm is made salient (e.g., a specific place is empty of litter), it is usually difficult to distinguish whether the decrease in the littering behavior is due only to the influence of the descriptive norm (i.e., those who walk through the place think that most people do not litter) or if it is also due to the influence of the injunctive norm (i.e., those who walk through the place think that most people disapprove of littering). The importance of this question is highlighted by reviewing the research related to this model. For instance, Schultz (1999) delivered door hangers to households in order to encourage residents to recycle the garbage in its proper place, and the results showed that giving feedback about the group’s behavior (i.e., descriptive norm) increased the frequency of participation and total amount of recycled material. Vaz and Kanekar (1992) presented male and female participants with vignettes about four different ethical contexts (extramarital relationship, spouse abuse, ticketless traveling, and shoplifting), finding gender differences in the perception of prescriptive and descriptive norms related to these contexts. Norman, Clark and Walker (2005) presented male participants with vignettes describing an aggressive act, and assessed the predictive utility of expanding the normative component of the theory of planned behavior (TPB) by including a measure of descriptive norms; they found that the addition of this measure increased the amount of variance explained. Sheeran and Orbell (1999) found in three correlational studies that descriptive norms contributed substantial variance in intentions to play the lottery after the TPB’s predictors had been controlled.
In sum, with the exception of the correlational studies carried out by Sheeran and Orbell (1999), most authors have worked with descriptive norms which appear to be sustained by the injunctive norm (e.g., recycling, extramarital relationships, spouse abuse, shoplifting, aggression), leaving largely unanswered the question of the genuine influence of the descriptive norm. The main goal of this work is to address this influence from both an experimental and applied perspective.

**Present Research**

The present work is based on both the theoretical grounding of Focus Theory – mainly the descriptive and injunctive norm distinction and possible conflict between them – and its applied value in fields such as ecological behavior. Specifically, we test whether the effectiveness of ecological messages may be canceled out when they conflict with the descriptive norm made salient by the situation in which the message is placed. In particular, we conducted two main studies (Study 1 and Study 2) and two additional ones (Preliminary and Follow-up) to assess both the actual influence of a descriptive norm and the effectiveness of a common ecological strategy such as the use of slogans.

We began our work by carrying out a straightforward test of the power of the descriptive norm proposed by Cialdini et al.’s (1990, 1991) Focus Theory. To this end we chose the behavior of “leaving the lights on or off when exiting a public place”. We selected this behavior because the Preliminary Study indicated that, at least in Spain, it does not appear to be sustained by an injunctive norm. In line with the Focus Theory, in Study 1 we tested in two different contexts the hypothesis that making the descriptive norm salient will lead people to behave consistently with the norm. In Study 2 we paid particular attention to a common problem, raised by Cialdini et al. (1990, 1991), related to the use of slogans in ecological campaigns: the possible conflict between the normative message of the slogan and the descriptive norm made salient by the situation in which the slogan is placed. Specifically, we tested the hypothesis that the conflict with the salient descriptive norm will cancel out the effectiveness of the ecological message.

We employed an experimental field methodology to conduct the two main studies of this work (Studies 1 and 2). This methodology offers high ecological validity, since participants did not actually know they were participating in a study, and both the manipulation of the independent variables and the measure of the dependent variable were clearly of an unobtrusive nature.

**Preliminary Study**

We decided to carry out a Preliminary Study in order to test whether or not the chosen behavior is sustained by the injunctive norm, and whether the manipulation of the descriptive norm intended for use in Study 1 changes perceptions of the descriptive norm but without affecting perceptions of the injunctive norm.

**Participants and Procedure.** The procedure for this study was based on that designed by Reno, Cialdini and Kallgren (1993) to test norm-focus inductions. A group of users of the public washrooms in the Psychology building at our university were provided with one of two versions of a questionnaire that asks them to read about and picture the following setting: “You enter a washroom. There is nobody in the washroom. The lights of the room are [on] [off]. The switches are manual.” The two versions of the questionnaire were identical except for the preposition in the square brackets: 24 (11 men and 13 women) and 21 (9 men and 12 women) participants read about and pictured the “Lights-on” and “Lights-off” settings, respectively.

Below the description of the setting, the questionnaire included two questions: “to what extent do you think that people disapprove of leaving the lights on when exiting a public washroom?” and “to what extent do you think that most people leave the lights on when exiting a public washroom?” These questions were formulated to measure the activation of injunctive and descriptive normative information provoked by the settings presented.

**Results and Discussion.** The injunctive-norm measure for the perceived social disapproval elicited by the behavior was on a 7-point scale (1 = “not at all”, 4 = “somewhat”, 7 = “extremely”). As expected, the results showed that this behavior is not sustained by an injunctive norm: both averages were below the mid-point (4 = “somewhat”); Ms = 3.25 and 3.81 for “Lights-on” and “Lights-off”, respectively. Furthermore, these results showed that the settings did not affect the perception of the injunctive-norm: the two averages did not significantly differ, t(43) = 1.16, p > .25.

With regard to the descriptive-norm measure (i.e., “to what extent do you think that most people leave the lights on when exiting a public washroom?”), it was formulated in the “lights-on” direction and on a 7-point scale (1 = “never”, 4 = “often”, 7 = “always”). As expected, those who pictured the “Lights-on” setting obtained a significantly higher mean (M = 5.58, above the “often” value) than those who pictured the “Lights-off” setting (M = 3.76, below the “often” value), t(43) = 5.09, p < .001. In addition, the 2 (presented setting: Lights on vs. Lights off) x 2 (gender: male vs. female) ANOVAs showed that gender did not have a significant main effect on either the injunctive-norm or descriptive-norm measures, Fs (1,41) < .30, ps > .57; nor were there interaction effects, Fs (1,41) < 1.55, ps > .22.

In sum, the results of this Preliminary study suggested that the chosen behavior is not sustained by an injunctive norm and, moreover, that the manipulation to be used in Study 1 influences the saliency of the descriptive norm in the expected direction without influencing the saliency of the injunctive norm.
Study 1

After having found that “leaving the lights on when exiting a public place” is a behavior that allows us to manipulate the descriptive norm independently, without interference from the injunctive norm, we conducted Study 1.

Method

Participants and Procedure

Participants were 125 male students that used the public washrooms in the Psychology building at the Universidad Autónoma de Madrid (age range: 18 to 25), and 41 male customers that used the public washroom of a fast-food restaurant (age range: 20 to 73). We had to work with male participants principally for a practical reason: the experimenters available for conducting this study were male, and could only go into the men’s washroom. Since the results of the Preliminary Study showed that gender did not have any main or interaction effects, we felt this was not a major problem.

Setting. In both experimental contexts the setting was a windowless washroom with one manual switch for the lights to the side of the washroom’s only door. In order to avoid other influences apart from our manipulation, we only registered the behavior of those who entered the washroom alone, when it was empty, left within two minutes, and were alone throughout their visit (i.e., nobody else came in before the participant left). No participant knew he was involved in an experiment, and we registered the behavior in an unobtrusive manner.

Direction of descriptive norm. The experimenters randomly manipulated the state of the lights, so that there were two experimental conditions differing in just one aspect: when the participant entered the washroom he could find the lights either (a) on, or (b) off.

Hypothesis. No participant used the washroom in darkness, so in either condition they could leave the lights switched on or off when exiting. Our hypothesis was that participants’ behavior would be consistent with the direction of the descriptive norm; therefore, a higher percentage of participants would leave the lights turned on when they previously found them turned on than when they previously found them switched off. We tested this hypothesis in two different contexts: the Psychology building and the fast-food restaurant. It should be noted that the hypothesis refers to the effect of the descriptive norm within each context, without trying to compare the effects between two contexts that are not comparable due to the different populations and physical characteristics of the settings.

Results and Discussion

As expected, in both contexts people behaved according to the descriptive norm. That is, in the public washrooms of the Psychology building, when exiting the washroom 32 out of 62 participants (52%) left the lights on when they previously found them on, whereas only 15 out of 63 (24%) did so when they previously found the lights off; this difference was significant: $\chi^2 (N = 125, 1) = 10.29, p < .002$. In the fast-food restaurant, the results showed a similar pattern: when exiting the washroom, 21 out of 24 (87%) and 11 out of 17 (65%) left the lights turned on when they previously found them on and off, respectively; $\chi^2 (N = 41, 1) = 13.27, p < .05$. Both patterns are shown in Figure 1.

In sum, the descriptive norm showed a powerful effect, leading most people to behave in opposite ways (i.e., switching the lights off or leaving them turned on) depending on the direction of the descriptive norm. Therefore, in line with the Focus Theory, we confirmed the influence of descriptive norms, but in this case we worked with a new ecologically-relevant behavior (i.e., leaving the lights on or off when exiting a public place), in two different contexts, and reducing the possible influence of the injunctive norm.

Taken together, the results of the Preliminary Study and Study 1 showed that the descriptive norm has a powerful effect. It should be noted that the percentage of “leaving the lights on” behavior was higher in the fast food restaurant than in the Psychology building; nevertheless, the goal of Study 1 was not to compare these two contexts because they differed in several other characteristics apart from those of our manipulation. The main goal of Study 1 was to test the influence of the same descriptive norm within two very different and non-comparable contexts.

Figure 1. Percentage of participants who left the lights on as a function of salient descriptive norm (Study 1).
and consistent effect even after separating its influence from the influence of the injunctive norm. The next step was to test whether this influence might cancel out the effect of a common strategy for encouraging ecological behavior: the use of slogans.

Study 2

The slogan-descriptive norm conflict

Since the oil crisis of the 1970s, governments and private companies have been trying to curb the excessive consumption of energy and other resources. With this goal in mind, most campaigns have been designed as typical attitude-change interventions, and one of the most frequent techniques for increasing ecological behavior has consisted in placing different kinds of printed slogans in situations where relevant behaviors occur (Kurz, Donaghue, & Walker, 2005). Situations in which slogans are used may be real or represented in mass media advertisements (remember, for example, the slogan “People Start Pollution, People Can Stop it” used in the ad mentioned at the beginning of this work). Though these persuasive slogans do not generally appear to be particularly effective (Geller, Winett, & Everett, 1982), they are widely used, and people who design them usually seem more concerned about aesthetic aspects than about the psychological processes that may increase their effectiveness.

Bearing in mind the effect of the descriptive norm found in Study 1, we carried out a second study that replicates a recurrent situation created by the use of persuasive slogans as ecological intervention, a situation we refer to as the “slogan-descriptive norm conflict”. These slogans are normally used when the occurrence of anti-ecological behavior is clear, and under such circumstances people’s attention may be focused not only on the slogan, but also on the anti-ecological descriptive norm activated by the context. In short, the hypothesis tested by our second study is that the frequently-found ineffectiveness of the use of persuasive slogans normally results from the conflict between (a) the ecological content of the slogan and (b) the descriptive norm made salient by the context in which the slogan is placed.

Method

Participants and Procedure

Participants were 200 users of the public washrooms in the Psychology building at the Universidad Autónoma de Madrid, most of them (85%) students (50% female and 50% male), with a mean age of 22.3 years.

Setting. All participants entered the public washroom described in Study 1, which was a windowless space with one manual switch for the lights to the side of the washroom’s only door. We observed, unobtrusively, how they left the lights when coming out. Participants were unaware that they were participating in an experiment and, as in Study 1, the following criteria were to be fulfilled: the washroom was empty; the participants were alone when entering, using and leaving the washroom; and they did not remain in the washroom for more than two minutes.

Variables. Within the context described, we created different slogan-descriptive norm conflicts. With regard to the descriptive norm, we reproduced the two conditions included in Study 1. Thus, when entering the washroom participants could find the lights on or off. With regard to the slogans, we designed four different messages related to saving electricity. According to Dennis, Sonderston, Kocinski and Cavanaugh (1990), the content of such written slogans usually refers to behavior that reduces the ecological impact (e.g., “Recycle at home”), the social or personal costs of performing an anti-ecological behavior (e.g., “We all need to save energy” or “You pay for wasted energy”), or the opinion of some reference groups with regard to ecologically-relevant behaviors (e.g., “Save energy, your children will thank you”). As can be seen in Figure 2, we took Dennis et al.’s analysis as a reference for designing the content of our four slogans. Each slogan was written on stickers, which we stuck in three visible places in the washroom: next to the urinal, next to the mirror and near the light switch. We followed a between-subjects design: only one slogan per washroom and the stickers always in the same places. Just after the participant had left the washroom, the experimenter recorded whether the lights were left on or off and approached the participants to ask them their age and to check whether they had read and recalled the content of the sticker (all of them had).

Each slogan was placed in a different washroom; this raises the possibility that any difference in behavior can be due to differences in either the physical features of the washrooms or the characteristics of the people who used them. Two remarks should be made regarding the potential location effect. First, we deliberately chose in Study 2 five

<table>
<thead>
<tr>
<th>Cost-benefit message:</th>
<th>“You pay for the electricity that you waste” (“La electricidad que derrochas la pagas tú”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common good message:</td>
<td>“Save electricity for the benefit of all”. (“Es un bien de todos, ahorra electricidad”)</td>
</tr>
<tr>
<td>Social disapproval message:</td>
<td>“Don’t let the side down! Save electricity”. (“No quedes en mal lugar, ahorra electricidad”)</td>
</tr>
<tr>
<td>Correct behavior message:</td>
<td>“Before leaving, turn the light off”. (“Al salir, apaga la luz”)</td>
</tr>
</tbody>
</table>

Figure 2. Persuasive messages of the sticker slogan (English and Spanish version) used in Study 2.
washrooms exactly alike in their design, fittings and distribution. Second, all five washrooms were on the same floor of the same building, so they could potentially be used by any person who was on that floor of the building (the experimenter also checked if they had previously used one of the other washrooms, and only those who had not were included in the Study); indeed, the age of the participants was equivalent across the different settings ($20.3 < M_5 < 23.6$).

In sum, we carried out an experiment in which five identical and comparable washrooms were used. In four we stuck one of the four slogans (i.e., “Cost-Benefit”, “Common Good”, “Social Disapproval” and “Correct Behavior”), and in the fifth washroom we did not stick any slogans. Furthermore, we designed two different situations: in the first of these there was a conflict between the slogan and the descriptive norm (i.e., the “Lights-on” descriptive norm was salient); in the second situation, there was no conflict between the slogan and the descriptive norm (i.e., the “Lights-off” descriptive norm was salient). Our principal hypothesis was that participants’ behavior would be consistent with the direction of the descriptive norm made salient by the situation: a higher percentage of participants would leave the lights turned on in the “Lights-on” than in the “Lights-off” conditions. We did not expect any effect of the slogans for two reasons. First, in the “Lights-on” conditions, the conflict between the ecological content of the slogan and the descriptive norm would cancel out the effectiveness of the slogan. Second, in the “Lights-off” conditions, the effect of the salient descriptive norm would mask any effect provoked by the slogan.

### Results and Discussion

The principal objective of this study was to compare the combined influence of descriptive norm and slogans, paying special attention to a situation we called “slogan-descriptive norm conflict”. Two relevant results were found. First, the descriptive norm made salient by the context played a crucial role. There was an overall effect of this variable: an average of 69% of participants left the lights on when the “Lights-on” descriptive norm was made salient, while this percentage decreased to 46% when the “Lights-off” descriptive norm was salient; $\chi^2(N = 200,1) = 10.92, p < .001$. As can be seen in Figure 3, this pattern appeared in three of the four slogans conditions and in the situation (see “Lights-on” condition). In comparison with the control condition, the presence of this slogan decreased the “lights left on” percentage from 79% to 40%; $\chi^2(N = 39,1) = 6.10, p < .05$. Finally, a Log-linear analysis showed that gender did not significantly influence the behavior (53% of women and 61% of men left the lights turned on; $z = 1.20, n.s.$), and that neither did it significantly interact with the descriptive norm made salient by the context: in the “Lights-on” condition 67% of women and 70% of men left the lights turned on, whereas in the “Lights-off” condition 38% of women and 51% of men did so; $z = .65, n.s.$

In sum, as expected, most slogans proved ineffective, and the crucial factor was the descriptive norm made salient by the situation. As we have already stated, this result has an important practical implication: considering that the strategy of placing slogans is frequently used when the anti-ecological behavior has been firmly established, we can only expect that such a strategy will be ineffective. Furthermore, in line with the Focus Theory, the results of this study once again supported the powerful influence of the salient descriptive norm. We were indeed able to reduce significantly the percentage of those leaving the lights on simply by making salient the “Lights-off” descriptive norm. Moreover, we found one slogan whose content was effective even when there was a conflict with the salient descriptive norm: that of “Correct-Behavior”. Considering that the sticker bearing this slogan was as visible and comprehensible as the others, what was the characteristic that differentiated it from the other slogans? Though this was not the main purpose of our work, we conducted a follow-up study in order to obtaining preliminary data that may help us to answer this question.

![Figure 3](image_url) Percentage of subjects who left lights on across the Descriptive-Norm and Slogan conditions (Study 2).
Follow-up of Study 2

It can be argued that the effectiveness of the “Correct-Behavior” slogan relies on its relatively more direct, concrete, simple and specific language when giving behavioral instructions\(^2\). This characteristic is strongly related to an effect that has been considered in the study of the focusing process: the vividness effect (e.g., Taylor & Thompson, 1982). Namely, a message will be more persuasive to the extent that it elicits an image that is clear, interesting and attractive (Nisbett and Ross, 1980). Indeed, a series of studies has shown that the vividness of a message can enhance persuasion in areas such as health (Broemer, 2004; Cherubini, Rumiati, Rossi, Nigro, & Calabrò, 2005) and environmental conservation (Rhoads & Cialdini, 2001). However, Smith and Shafer (2000) have argued that this vividness effect can be moderated by the congruence between the content of the message and the imagery provoked by its presentation (i.e., vividness-congruency).

Based on this theoretical proposal, we tested whether the “Correct-Behavior” slogan may be more vivid (i.e., it elicits a clearer, more interesting and more attractive image) than the other three slogans, or whether it elicits an image that is more congruent with the content of the message.

**Participants and Procedure.**

One-hundred-forty-five (74 men and 71 women, average age = 21) participants responded to the questionnaires described below. Each questionnaire was related to just one of the four slogans: 38 participants answered the questionnaire related to the “Cost-Benefit” slogan, 36 the “Common-Good” slogan, 34 the “Social-Disapproval” slogan, and 37 the “Correct-Behavior” slogan.

Participants were asked to respond to a questionnaire including an introductory paragraph explaining that the slogan had been placed in a public washroom. The participant was asked to read the slogan and think of any image, thought or feeling it may suggest. After reading the slogan, the participant was asked to rate the image, thought or feeling on a 7-point scale (1 = “It did not suggest any image at all, only ideas and thoughts”, 7 = “It suggested a perfectly clear image as vivid as a real experience”) (vividness). Subsequently, the participant was asked to write a description of the image or thought, and to answer the following questions: “to what extent do you agree with the content of the slogan?” (agreement), “to what extent do you think the image suggested is interesting?” (interest), “to what extent do you think the image suggested is congruent with the content of the slogan?” (vividness-congruency). All of these questions were answered on a 7-point scale (1 = “not at all, 7 = “extremely”).

**Results and Discussion**

As the purpose of this follow-up study was to test whether the “Correct-Behavior” differed from the other three slogans in any of the five considered indices, we used planned comparisons to test the 1 (“Correct-Behavior”) vs. 3 (“Cost-Benefit”, “Common-Good” and “Social-Disapproval”) pattern for each of the indices. The results showed no significant differences of this pattern for the vividness, agreement, attractive and interesting indices. Nevertheless a significant 1 vs. 3 pattern was found for the vividness-congruency index: participants who read the “Correct-Behavior” slogan obtained a significantly higher average (\(M = 4.95\)) than participants who read the “Cost-Benefit” (\(M = 4.21\)), “Common-Good” (\(M = 4.00\)) and “Social-Disapproval” (\(M = 4.03\)) slogans; \(t(141) = 2.38, p < .02\). Table 1 shows the means of the indices across the four message-conditions.

In sum, the results of this follow-up study showed that, in comparison with the other three slogans, the “Correct-Behavior” slogan was not perceived as more vivid (i.e., imagery-provoking), and nor was the provoked image more interesting, attractive or consonant with perceivers’ opinion.

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*Table 1*

<table>
<thead>
<tr>
<th>Mean of indices by slogan condition.</th>
<th>Correct-Behavior</th>
<th>Cost-Benefit</th>
<th>Common-Good</th>
<th>Social-Disapproval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vividness</td>
<td>3.72&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.26&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.44&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.55&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>Agreement</td>
<td>5.47&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>4.82&lt;sub&gt;b&lt;/sub&gt;</td>
<td>5.72&lt;sub&gt;a&lt;/sub&gt;</td>
<td>4.82&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
<tr>
<td>Attractive</td>
<td>2.59&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.24&lt;sub&gt;a&lt;/sub&gt;</td>
<td>2.97&lt;sub&gt;a&lt;/sub&gt;</td>
<td>2.59&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>Interesting</td>
<td>2.89&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.45&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.06&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.26&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>Vividness-Congruency</td>
<td>4.95&lt;sub&gt;a&lt;/sub&gt;</td>
<td>4.21&lt;sub&gt;ab&lt;/sub&gt;</td>
<td>4.00&lt;sub&gt;b&lt;/sub&gt;</td>
<td>4.03&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

Within the same row, means without shared subscripts differ at the \(p < .05\) significance level, according to DMS tests.

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\(^2\) We wish to thank one of the previous reviewers of this work for this suggestion.
General Discussion

A set of predictions based on the Focus Theory of Normative Behavior (Cialdini et al., 1990, 1991) was tested in two studies. In Study 1 we confirmed the powerful influence of focusing a descriptive norm in the context of an ecologically-relevant behavior (i.e., leaving lights on or off when exiting a public space). Furthermore, this influence was found over people’s actual behavior, and not just their reported intention to perform it, in an experimental setting with high ecological validity and, overall, while reducing the possible influence of the injunctive norm. In Study 2 we showed that the conflict between the descriptive information presented in a slogan and the descriptive norm made salient by the context can drastically reduce the slogan’s effectiveness. Additional data obtained in the follow-up study suggest the relevance of considering an aspect recently proposed by research on the general process of attention: the vividness-congruency. A general overview of the data patterns allows us to draw a set of conclusions that may complement the ideas derived from Cialdini et al.’s (1990, 1991) model, whose two principal theoretical components are norms and focusing.

Interplay and conflict between different norms

According to our data, a descriptive norm is capable of influencing people’s behavior independently of other influences, such as those due to the injunctive norm. This independent influence led us to stress the need to pay more attention to two aspects yet to be comprehensively explored. First, the need to develop an extended taxonomy of the different kinds of norm that may influence behavior; in this vein, Oceja and Jiménez (2001) and Thøgersen (2006) have independently obtained empirical evidence that supports two revised taxonomies that distinguish seven and four different kinds of norm, respectively. Though further research is needed in order to test the congruencies between these taxonomies, both approaches emphasize the need to go beyond the classic distinction between social and personal norms (Schwartz & Howard, 1982). The pioneering distinction between descriptive and injunctive norms and the subsequent taxonomies can constitute a first step towards satisfying such a need.

Second, assuming that there are different kinds of norm and that each kind can be focused in diverse and separate ways, it is important to know which norms are operating in a given situation, and it is even more important to know how these norms interact: sometimes they may combine additively, whereas on other occasions they may be in conflict, inhibiting or undermining one another. These possible combinations lead us to ask general questions, such as what happens when it is observed that most people do what is generally considered as wrong (e.g., generalized racial discrimination behavior in an egalitarian society). Or, in contrast, when few people do what is generally approved (e.g., donating money to underprivileged groups).

Furthermore, in the specific field of ecological behavior, Cialdini et al. (Cialdini, 2003; Cialdini et al., 2006) have recently shown that those appeals which focus simultaneously on conflictive descriptive and injunctive normative information can backfire to produce the opposite of what a communicator intends. For example, a message trying to prevent cigarette smoking among children by informing them that “more than 3 million young people in the US smoke and 3,000 become regular smokers every day” may be ineffective due to the contradictory information in terms of descriptive and injunctive norms. Likewise, Schultz, Nolan, Cialdini, Goldstein, and Griskevicius (2007) found in a field experiment that a descriptive normative message detailing average neighborhood energy usage produced an undesirable increase in energy consumption in those households that were initially consuming at a low rate, but adding an injunctive message (conveying social approval or disapproval) eliminated this boomerang effect.

The case examined in our Study 2 differs from those considered by Cialdini, Schultz and collaborators in one crucial aspect: on this occasion the conflict is between the normative information contained in the slogan and that made salient by the situation in which the slogan is placed, but the results of both their work and our own support the view that it is worthwhile to consider the different combinations that may exist between different kinds of norms. Although the present findings suggest that normative information made salient by the situation may prevail over that contained in the slogan, our research does not address the issue of the conditions under which an environment raises the relevance of a specific kind of norm (e.g., descriptive, injunctive). Further research in more controlled settings should be carried out to explore this important issue (see, for example, Aarts & Dijksterhuis, 2003; and Joly, Staple, & Lindenberg, 2008).

Different processes of focusing

The data from Studies 1 and 2 supported the claim that a salient norm is likely to influence behavior when it is made salient by the context. Indeed, in Study 1 we found that participants left the lights on or off depending on the direction of this salient norm. In Study 2, with only one exception, people once again behaved in the direction of the salient descriptive norm, regardless of the ecological message stated in the slogans used. In sum, the degree to which a norm is made salient, either by the text of the message or the context in which it is placed, is a crucial aspect when we test the
explanatory and predictive value of social norms. We should therefore pay more attention to the processes that appear to increase such salience (Fiske & Taylor, 1991).

Furthermore, in Study 2 we observed that only one slogan was effective when there was a conflict between its normative message and the salient descriptive norm. The results of the follow-up study suggested that one of the characteristics distinguishing this slogan from the others was its vividness congruency (i.e., the capacity to evoke imagery coherent with the content of the message). Indeed, previous research (Broemer, 2004; Petrova & Cialdini, 2005; Smith & Shafer, 2000) has shown that both vividness and vividness-congruency are two aspects that may direct the process of focusing beyond the influence of salience. It should be noted that we did not demonstrate the causal link between vividness congruency and behavior; this was not actually the goal of this work, though our findings suggest that the analysis of the specific processes that focus a specific norm may be an important avenue for future research.

Practical implications

We agree with Cialdini and collaborators that those responsible for designing ecological campaigns should give more thought to the process of focusing norms when they aim to influence people’s behavior. Briefly, we think these people should try to ask themselves at least the following questions: Which behavior do we want to change? Is there a norm connected with that behavior (e.g., injunctive or descriptive)? How might these norms interact (i.e., conflict or coincidence)? and How can we make them focal (i.e., salience or vividness-congruency procedures)? Though the formulation of these questions does not ensure the success of the ecological strategy finally designed, we believe it will help to optimize the impact of the text of a normative appeal placed in a context that may also convey relevant normative information. For instance, it will help to avoid common mistakes such as using very vivid (but not congruent) slogans in situations where the anti-ecological descriptive norm (e.g., littering, energy wasting or pollution) is clearly focal.

References


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3 There are probably other factors that may explain the greater effectiveness of the “Correct-Behavior” slogan, but their consideration would go far beyond the brief of this work.


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