AN EXPERIMENTAL APPROACH TOWARDS THE EVALUATION OF A SEAT BELT CAMPAIGN WITH AN INSIDE VIEW ON THE PSYCHOLOGY BEHIND SEAT BELT USE

Kris Brijs*, Stijn Daniels, Tom Brijs, Geert Wets

Transportation Research Institute
Hasselt University
Wetenschapspark 5, bus 6
BE-3590 Diepenbeek
Belgium

Fax +32(0)11 26 91 99
Tel +32(0)11 26 91 11
E-mail {kris.brijs, stijn.daniels, tom.brijs, geert.wets}@uhasselt.be

*Corresponding author

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ABSTRACT

A Belgian national safety belt campaign was evaluated by means of a questionnaire survey in a student sample. The evaluation was done through a three group after-only design with the use of one control group and two experimental groups. The first experimental group, the attentive group, was exposed to the campaign material in a very direct, attentive way, whereas the second experimental group, the pre-attentive group, was exposed rather inattentively. The framework of the Theory of Planned Behavior (TPB) was extended with a habit and a past behavior variable in order to verify whether seat belt usage is to be understood as habitual, repeated or planned behavior. In terms of campaign effect, the comparison of the pre-attentive group and the control group revealed no significant differences. However, the attentive group and the control group differed significantly regarding perceived behavioral control (confidence), perceived behavioral control (motivation), habit, past behavior, behavioral intention and behavior. In terms of explaining seat belt usage, linear regression models were fitted and gave most support for the repeated behavior hypothesis. According to the latter, using seat belts is recycling an originally reasoned behavior, yet without systematically going through the whole underlying reasoning every time a situation in which the decision to wear a seat belt (or not) presents itself. The practical implications of these findings are discussed more in detail.
1 INTRODUCTION

Compulsory seat belt wearing has become part of highway codes worldwide, probably because seat belts are among the most effective measures for the maintenance and enhancement of (personal) safety in traffic (1). Curtis et al. (2) for instance, see safety belts as the single most effective means to reduce fatal and non-fatal injuries.

Nonetheless, overwhelming proof for the seat belt’s effectiveness as a safety promoting device is in shear contrast with the amount of motorized vehicle occupants who still refrain to make (continuous) use of safety restraints while driving. The World Report on Road Traffic Injury Prevention (3) asserts that the extent of non-users remains significant, even in some well-developed and highly-motorized countries with low rates of front seat belt wearing and generally low rates of rear seat belt use.

Research by Vis & Eksler (4) on usage rates of protective systems in the EU-27 concludes it remains unsatisfactory low and improved only marginally between 2005 and 2007. Interestingly, Belgium is among the worst performers in terms of unconditioned seat belt usage even though wearing seat belts is mandatory in Belgium for car drivers and front passengers since June 1975. From 1991 onwards the seat belt has become compulsory also on the rear seats. In 2000 the compulsory seat belt wearing was extended to all motor vehicles (such as trucks and busses) on any seat that is equipped with seat belts (5).

A 2004-survey revealed why people refrain from always using their seat belt. The three most important reasons were forgetfulness (“I don’t think about it”), discomfort (“restricts freedom to move”) and negligence (5).

As an attempt to improve wearing rates, the Belgian government has invested in the development of large scale seat belt programs where use is made of different educational strategies such as multi-media spots and roadside billboards together with waves of publicity supported intensified enforcement. This study is meant to analyze and evaluate the effectiveness of such a previously implemented seat belt campaign.

1.1 TARGET CAMPAIGN BACKGROUND

To increase the use of seat belts the Belgian Road Safety Institute decided to launch a national campaign on seat belt use. The target campaign ran between June and August 2004 and was part of a longer term strategy to increase the use of seat belts and other protective devices. More specifically the aim of the campaign was to increase the seat belt wearing rate by 2005 to 67% in the front seats and 55% on the rear seats. By 2009 the target was to reach 87% on front and 75% on rear seats (5).

The central slogan of the campaign was: “The safety belt. One second changes everything” (Dutch: “De gordel, ’t is zo gebeurd”, French: “La ceinture, une seconde qui change tout”). The message was threefold: on the one hand it refers to the ease of wearing a seat belt. Fastening the seat belt is very convenient, is quickly done and should happen routinely: it takes only one second. On the other hand it refers, supported by the picture of the broken windshield, to the unexpected and sudden nature of an accident. In addition to that, the campaign’s reference picture can be qualified as a soft fear appeal with the image of a broken
windshield as a metaphor for the potential severity of the consequences of being involved in an accident while being unbuckled.

FIGURE 1 Central campaign slogan (Source: www.bivv.be)

The campaign was meant to address vehicle drivers as well as front- and rear seat occupants. However, the standard visual stimulus imaged a person’s face behind a broken windshield, thereby suggesting the focus was somewhat more on drivers and front seat passengers. The depicted person is a young male, highlighting the elevated risk level within this age and gender group. Although the campaign material contains those specific elements, the campaign was generally intended to reach the whole population of vehicle drivers and passengers as a non-specific target group (5).

The campaign used a set of different media, such as television spots, posters, a website, leaflets, brochures and car stickers. As previously shown by Silverans et al. (6) the public perception of the risk to get fined for not wearing seat belts was rather low. The local police services were therefore requested to raise their enforcement activities regarding the non-use of seat belts during the period of the campaign.

1.2 STUDY PURPOSE

In existing literature it is advised to couple the effectiveness assessment of behavioral change interventions (such as the one under study here) to a thorough understanding of the targeted problem behavior itself (7, 8). Therefore, the use of evidence-based theories for the explanation of behavior is encouraged. We decided to use the Theory of Planned Behavior (TPB) (9) as an organizing framework. Besides its extensively supported validity, we motivate this decision by the fact that Şimşekoğlu and Lajunen (10) recently found a TPB-based model to have the best fit for the explanation of seat belt use compared to competing models such as the Health Belief Model.

However, recent findings challenge the basic assumptions underlying TPB, especially when it comes to studying repetitive behavior. Indeed, there is growing evidence that decisions concerning frequently recurrent behavior (such as having to decide on wearing seat belt or not), cannot be explained exclusively in terms of consciously planned behavior.

Two alternative processes have been proposed. One approach is to see the (non-)use of seat belts as a matter of habit, implying it is some kind of automatically triggered response, with
absolutely no reasoning behind it and extremely difficult to change because it concerns no conscious involvement of the subject anymore (11). Typically, in situations alike, the variable habit neutralizes the effect emanating from the classical TPB-variables.

A highly similar, but alternative hypothesis has been advanced by Thøgersen (12) and Eriksson (13). Instead of seeing highly repetitive behavior as some kind of fully automated stimulus-response reaction, they consider it to be a form of repeated past behavior. The latter is to be understood as an originally ‘reasoned’ behavior being recycled over time without the whole underlying reasoning being unfolded whenever the behavior is to be implemented by the subject. Yet, without ever having transformed into a deeply ingrained habit, the original underlying reasoning can be re-activated and re-evaluated, for instance by changing the situational context in which the desired target behavior is to be performed. In cases such as these, the variable past/repeated behavior typically outperforms the effect generated by traditional TPB-variables when it comes to the prediction of behavior. Yet, to the difference with habit, past/repeated behaviour does not completely annihilate the effect emanating from traditional TPB-variables (14).

Even though the notions of a habit and past/repeated behavior are closely related to one another, Ajzen (15) agrees they are fundamentally different and therefore, should be explicitly distinguished from each other, especially when it comes to the development of strategies to change them if necessary.

Based on the foregoing, we formulate the two main purposes of this study as follows. On the one hand, the aim was to test whether being exposed to a seat belt campaign would affect (or not) those variables that are identified by the TPB as key determinants of behavior. On the other hand, the goal was to verify which of the three alternative hypotheses on the use of seat belts would receive most support, i.e. the planned behavior hypothesis, the habit hypothesis or the past/repeated behavior hypothesis. In order to be able to do so, we extended the classic TPB-questionnaire with a measure for habit and past/repeated behavior.

2 METHOD

2.1 DESIGN

Participants were university and high school students, recruited at Hasselt University and its association partners. The evaluation was carried out by means of a three group after-only design with the use of one control group and two experimental groups. The experimental groups consisted of students following courses at one location whereas students at three other locations were selected as control group. The first experimental group was exposed to a number of campaign billboards in the central hall of the main university building. This central hall is an obligatory passing point whenever students go to the lecture rooms. This group was expected to be largely unaware of the non-attended information. This situation approaches the real traffic situation in which road users are confronted with billboards alongside highways. This group is further called the pre-attentive group (see Yoo (16) for a detailed discussion of the ‘pre-attentive’ concept). The entire pre-attentive group filled out the questionnaire on the same day as their exposure to the stimulus (billboards).

The second experimental group was exposed to the campaign in a very direct and attentive way. While the questionnaires were completed, the campaign billboard (see Figure 1) was
projected on a screen in front of the lecture room. In the introductory briefing and in the questionnaire students were explicitly asked to look at the projected campaign material. This group is further called the attentive group.

The control group consisted of students that never need to enter the building where the campaign material was shown. They were therefore not exposed to the campaign stimulus and could not interfere with the two treatment groups.

2.2 PROCEDURE

All data were collected by means of self-report measures. Research participants completed classical self-administered paper-pencil survey questionnaires. For each response session, lecturers were asked to offer 30 minutes time within their course in order to enable students to complete a questionnaire. A total of 575 questionnaires were suitable for further analysis, of which 197 in the pre-attentive group, 168 in the attentive group and 210 in the control group. All participants were aged between 18 and 25 years (mean age=20, 311 male and 264 female). 86% had a driving license.

2.3 QUESTIONNAIRE

The final version of the questionnaire was pre-tested on a group of 26 research participants in order to find out whether instructions as well as questions were clear and whether wording had to be changed or not.

The questionnaire consisted of two sections. The first section asked for respondent-related background information. The second section focused on the campaign theme (i.e., seat belts) and measured the different variables appearing within the TPB together with two additional variables (i.e., habit and past behavior).

More in detail, the TPB-section was operationalized following the instructions provided by Francis et al. (17). Methodologically, for this kind of research, it is essential to respect the so-called ‘correspondence principle’, i.e., the fact that all constructs appearing in the TPB are measured at the same level in terms of target, action, context and time (18). Therefore, participants should receive a very precise situational context serving as a reference point for answering the questions throughout the entire survey.

The driving context selected for this study is represented by Figure 2, and was included as a visual stimulus at the beginning of the questionnaire. The color photo was accompanied by the following instruction: “While filling out the questionnaire, imagine yourself in the situation depicted below somewhere in the coming three months as a car driver or a car passenger.”

In general, seven constructs were measured, i.e., attitude (ATT), subjective norm (SN), perceived behavioral control (PBC), behavioral intentions (BI), habit (HAB), past behavior (PB) and behavior (B). We briefly discuss how these constructs were operationalized and what their reliability was in terms of Cronbach’s alpha.
Attitude ($\alpha = .85$) was assessed by means of four 7-point bi-polar (-3, +3) scales (i.e., wearing seat belt is disadvantageous/advantageous, bad/good, positive/negative, unacceptable/acceptable).

Subjective norm ($\alpha = .67$) was captured with four 7-point unipolar scales (1= disagree, 7 = agree). Items were worded in terms of how people being important to the subject think (or not), wish (or not), accept (or not) and approve (or not) the subject should be wearing the seat belt.

Perceived behavioral control was also measured with four 7-point unipolar scales (1= disagree, 7 = agree). Questions were aimed at uncovering whether wearing the seat belt would be easy (or not), would be dependent exclusively on the subject (or not), would be dependent upon the respondent’s own will (or not), and finally, whether the participant was confident (or not) in that s/he would be wearing a seat belt. Principal component factor analysis with varimax rotation for this construct suggested a two-factorial structure. The first factor was labeled PBC 1 (confidence) ($\alpha = .77$) and stands for the idea of the individual trusting s/he will perform the target behavior (i.e., wearing a seat belt). The second factor was named PBC 2 (motivation) ($\alpha = .58$) and was more related to the individual’s control over the target behavior being dependent upon being intrinsically motivated to do so. These findings are in line with Kraft et al. (19) and Manstead and Van Eekelen (20). More in detail, they show how perceived behavioral control is in fact multi- rather than single dimensional. More in detail, they propose a three-factorial (i.e., perceived control, perceived confidence and perceived difficulty) or a two-factorial (i.e., perceived difficulty and perceived confidence) structure.

Behavioral intentions ($\alpha = .79$) were operationalized by two 7-point unipolar scales (1 = disagree, 7 = agree). Items were formulated in terms of preparedness and probability of wearing seat belt in the future.

Habit ($\alpha = .82$) consisted of three items on a 7-point unipolar scale (1 = disagree, 7 = agree). The questions asked whether wearing a seat belt was something respondents did
spontaneously (or not), automatically (or not) and whether they sometimes forgot to wear the seat belt (or not). This operationalization was drawn from De Pelsmacker and Janssens (21). The last item was reversely coded.

Past behavior ($\alpha = .96$) contained six items on a 7-point unipolar scale (1= never, 7 = always) and asked respondents about wearing a seat belt when driving inside built-up areas, outside built-up areas, when having bad weather, when having good weather, when driving on a highway, and during daytime driving. Let us remind here also that past behavior, a variable standing for *frequency* of performing a certain type of behavior in the past, is not the same as habits (for a more detailed discussion on this, see for instance Ajzen (15)).

Behavior was measured by means of a single item on a 7-point unipolar scale (1= never, 7 = always). It was formulated in terms of whether the respondent wears a seat belt in a situation as the one evoked by the photo. As such, the behavior variable probes for what we will be referring to from now on as ‘scenario-specific behavior’ (= Bscenario).

2.4 DATA ANALYSIS

Data analysis was done with SPSS 16.0. First, data were screened and cleaned where necessary. We checked for potential outliers and missing values were replaced by item mean scores.

Subsequently, an exploratory principal component factor analysis with varimax rotation was performed on each of the measured constructs, together with an assessment of Cronbach’s alpha as a test for reliability. As already discussed, perceived behavioral control was the only construct that further split up into two different factors.

Next to that, for each of the identified constructs, scores on the different items were averaged and divided by the total number of items per construct. These index scores served as input then for subsequent analyses.

In order to test whether campaign stimulus exposure generated an effect on the study participants, a series of non-parametric independent sample t-tests with comparison of mean scores on each construct between the different groups, was executed. Comparisons were made not only between the control group and both the pre-attentive and the attentive group, but also between the pre-attentive and the attentive group in order to find out whether a difference in effect would occur in function of the type of exposure (i.e., attentively or pre-attentively).

Finally, a series of Ordinary Least Squares regression analyses were done in order to examine which of the three alternative hypotheses for the explanation of seat belt usage received most support from the data.

3 RESULTS

3.1 T-TESTS

No significant differences could be established between the pre-attentive and the control group. Table 1 shows the results of the t-tests for the comparison between the attentive group...
and the control group. Only results with significant differences are included. Although the sizes of the differences were small (as indicated by the Cohen’s d), significant differences were found for the variables subjective norm, perceived behavioral control (confidence), perceived behavioral control (motivation), behavioral intentions, habit, past behavior and scenario-related behavior.

**TABLE 1** Results for t-tests at the factor level (attentive group vs. control group)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Groups</th>
<th>M</th>
<th>SD</th>
<th>t(p)</th>
<th>Cohen’s d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjective norm (SN)</td>
<td>control</td>
<td>5.82</td>
<td>1.23</td>
<td>2.56 (.011)</td>
<td>0.26 (small)</td>
</tr>
<tr>
<td></td>
<td>attentive</td>
<td>6.10</td>
<td>0.88</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC1 (confidence)</td>
<td>control</td>
<td>6.32</td>
<td>1.24</td>
<td>3.10 (.002)</td>
<td>0.32 (small)</td>
</tr>
<tr>
<td></td>
<td>attentive</td>
<td>6.66</td>
<td>0.76</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC2 (motivation)</td>
<td>control</td>
<td>5.71</td>
<td>1.55</td>
<td>3.64 (.000)</td>
<td>0.38 (small)</td>
</tr>
<tr>
<td></td>
<td>attentive</td>
<td>6.24</td>
<td>1.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral intentions (BI)</td>
<td>control</td>
<td>6.50</td>
<td>1.18</td>
<td>2.55 (.011)</td>
<td>0.26 (small)</td>
</tr>
<tr>
<td></td>
<td>attentive</td>
<td>6.77</td>
<td>0.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Habit (HAB)</td>
<td>control</td>
<td>5.89</td>
<td>1.59</td>
<td>3.59 (.000)</td>
<td>0.37 (small)</td>
</tr>
<tr>
<td></td>
<td>attentive</td>
<td>6.40</td>
<td>1.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past behavior (PB)</td>
<td>control</td>
<td>6.42</td>
<td>1.18</td>
<td>3.33 (.001)</td>
<td>0.34 (small)</td>
</tr>
<tr>
<td></td>
<td>attentive</td>
<td>6.76</td>
<td>0.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior (Bscenario)</td>
<td>control</td>
<td>6.33</td>
<td>1.44</td>
<td>3.24 (.001)</td>
<td>0.33 (small)</td>
</tr>
<tr>
<td></td>
<td>attentive</td>
<td>6.73</td>
<td>0.80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE Cohen’s d was calculated and interpreted as proposed by Rosenthal & Rosnow (22)

Furthermore, the t-tests show that significant mean differences could be found between pre-attentive and attentive groups for control beliefs, PBC1 (confidence), PBC2 (motivation), habit, past behavior and behavior. Again, the differences were rather small according to the Cohen’s d.

Interestingly, mean values for the attentive group were systematically higher than those for the pre-attentive group. This seems to suggest that the conditions under which a campaign stimulus is being processed (i.e., the participant being fully aware or unaware of the fact that he/she is exposed to a stimulus), influences the size of the effect that stimulus might have on certain target variables.

### 3.2 REGRESSION ANALYSES

In accordance with traditional procedure, in a first step, we focused on behavioral intentions as the final outcome variable. Data for the three groups were merged and a dummy variable (Treatment) was included to indicate the difference between control group on the one hand and the experimental groups on the other hand. The results are provided in Table 2. Behavioral intentions are mainly explained by attitude, perceived behavioral control (confidence) and past behavior. Interestingly, habit is not statistically significant as a determinant of behavioral intentions.
TABLE 2 Regression of Behavioral Intentions on Attitude (ATT), Perceived Behavioral Control (PBC, 1 = confidence, 2 = motivation), Habit (HAB) and Past Behavior (PB)

<table>
<thead>
<tr>
<th>Model</th>
<th>Parameter estimate</th>
<th>Std. Error</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>1.578</td>
<td>.176</td>
<td>8.946</td>
<td>.000</td>
</tr>
<tr>
<td>Treatment</td>
<td>.003</td>
<td>.028</td>
<td>.105</td>
<td>.917</td>
</tr>
<tr>
<td>ATT</td>
<td>.234</td>
<td>.041</td>
<td>5.757</td>
<td>.000</td>
</tr>
<tr>
<td>PBC1 (confidence)</td>
<td>.166</td>
<td>.039</td>
<td>4.256</td>
<td>.000</td>
</tr>
<tr>
<td>PBC2 (motivation)</td>
<td>-.016</td>
<td>.015</td>
<td>-1.013</td>
<td>.312</td>
</tr>
<tr>
<td>HAB</td>
<td>.029</td>
<td>.032</td>
<td>.901</td>
<td>.368</td>
</tr>
<tr>
<td>PB</td>
<td>.500</td>
<td>.053</td>
<td>9.495</td>
<td>.000</td>
</tr>
</tbody>
</table>

N = 575, R² = 0.70

Subsequently, a model was fitted with ‘Bscenario’ (behavior) as the outcome variable. The results are provided in Table 3.

The regression analyses show that the main determinants of people’s self-reported scenario-specific behavior are past behavior (PB), behavioral intentions (BI), and PBC1 (confidence) with past behavior being the most powerful predictor.

TABLE 3 Regression of Behavior on Intentions, Perceived Behavioral Control, Habit and Past Behavior

<table>
<thead>
<tr>
<th>Model</th>
<th>Parameter estimate</th>
<th>Std. Error</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.232</td>
<td>.217</td>
<td>-1.070</td>
<td>.285</td>
</tr>
<tr>
<td>Treatment</td>
<td>.028</td>
<td>.033</td>
<td>.860</td>
<td>.390</td>
</tr>
<tr>
<td>PBC1 (confidence)</td>
<td>.161</td>
<td>.046</td>
<td>3.532</td>
<td>.000</td>
</tr>
<tr>
<td>PBC2 (motivation)</td>
<td>-.009</td>
<td>.018</td>
<td>-.512</td>
<td>.609</td>
</tr>
<tr>
<td>HAB</td>
<td>.083</td>
<td>.038</td>
<td>2.165</td>
<td>.031</td>
</tr>
<tr>
<td>PB</td>
<td>.582</td>
<td>.067</td>
<td>8.745</td>
<td>.000</td>
</tr>
<tr>
<td>BI</td>
<td>.210</td>
<td>.048</td>
<td>4.386</td>
<td>.000</td>
</tr>
</tbody>
</table>

N = 575, R² = 0.72

4 DISCUSSION AND RECOMMENDATIONS

The aims of this study were twofold. First, we wanted to find out whether a seat belt campaign would exert a (significant) effect on a series of variables known to be crucial determinants of behavior. Secondly, we wished to verify which of the three potential hypotheses for the explanation of seat belt usage (i.e., habit, planned, or past/repeated behavior) would receive most support from the data.
4.1 CAMPAIGN EFFECT

As for the first objective, results indicated that indeed, being exposed (or not) to the campaign, generated significant differences for some important determinants of behavior. However, this study clearly shows that the type of exposure (i.e., under full awareness or rather unaware) should be taken into account as well. Interestingly, participants being exposed to the campaign stimulus, while being unaware of this, do not differ significantly from participants under control conditions.

Thus, being exposed to a campaign stimulus as such does not necessarily guarantee that the stimulus will generate an effect in the participant. In addition, the participant’s awareness state should be considered as well. Consequently, in striving for a maximum of effectiveness, campaign planners and designers would do best in paying attention more explicitly to the fact that the stimulus per se doesn’t pass unnoticed. The fact that people are unaware of being exposed to a campaign stimulus can be related to both characteristics of the stimulus itself (the stimulus doesn’t trigger attention for instance because the colors or the images used do not stand out sufficiently, or, in case of roadside billboards, the stimulus can be badly located) as to characteristics of the environment that take people’s attention away from the stimulus (for instance, again in case of billboards or posters, the stimulus might not trigger attention because the driver is maneuvering and therefore focuses more narrowly on the road, not on the scene surrounding the road, or attention goes rather to a traffic sign or a exit lane located nearby a safety billboard than to the billboard itself, etcetera).

In order to raise this exposure-awareness several stimulus-related aspects could be taken into account. For instance, in the case of billboards alongside the road, special attention should go to their exact positioning (do they really fall within the visual scope of the driver, are they located at places where there is not too much interference with or hindering from other road and infrastructural elements, etc.) as well as to their style and design characteristics (do the colors attract attention, is the picture shown not too complicated, is the link between text and image easily to process, etc.). In case of TV- or radio-spots, broadcasting should be carefully planned in order to avoid that the message gets lost in the information clutter surrounding it. Another approach to maximize people’s awareness of a safety promoting stimulus is the strategy of repeated exposure with the target group being confronted several times with the same (or a related) message. As argued by Whittingham et al. (23), pre-testing campaign material as well as its implementation is of essential importance for the effectiveness of an intervention.

4.2 EXPLANATION OF SEAT BELT USAGE

When it comes to the explanation of seat belt usage, results of the regression analyses in general support the past/repeated behavior hypothesis. The past behavior variable, to be understood as an indication of past seat belt usage frequency under various situational conditions (i.e., inside/outside built-up areas, during day/night, with good/bad weather), was the most prominent determinant of both participants’ future behavioral intentions and behavior in terms of (being willing to) wear the seat belt in the reference situation that was visualized by the photograph at the beginning of the questionnaire.

Put differently, wearing seat belts (or not) is retaking behavior repetitively performed at other occasions before, without necessarily going through the whole original underlying reasoning of why (or why not) to make use of the seat belt every time the decision to use the seat belt
presents itself. The fact however that originally, some basic form of ‘conscious’ reasoning has taken place, can be deduced from the finding that there is a remaining significant effect emanating from classic TPB-variables. More in detail, besides being determined by past behavior, future intentions to wear seat belts were also influenced by attitude and perceived behavioral control (confidence), implying that some deliberation in terms of overall evaluation and self-confidence is at stake. For self-reported behavior also, the effect generated by past behavior did not eradicate a statistically significant influence exerted by behavioral intentions and perceived behavioral control (confidence).

Understood as such, this makes the assumption that seat belt usage is in fact a habit (i.e., a completely automated ‘stimulus-response’ type of reaction with no reflection behind it whatsoever) rather unlikely.

From an academic point of view, two specific implications can be drawn from the current study. Firstly, our findings plead in favor of extending the standard TPB-framework more specifically when highly repetitive behaviors are being studied, which is in line with previous recommendations advanced by fundamental (empirical) research on the TPB (24, 25, 26, 27). Secondly, the formal structure of the TPB-model seems to replicate well in our data. That is, left aside subjective norm, behavioral intentions are indeed determined by attitude and perceived behavioral control (confidence) while behavior is related to intentions and (again) perceived behavioral control (confidence). This can be seen as an additional validation of the TPB’s underlying structure.

From a practical perspective, we see three potentially fruitful approaches for the promotion of seat belt usage. Firstly, since attitude (i.e., an overall evaluative assessment of the pros and cons of wearing seat belts) appears to be a significant determinant of future intentions to wear a seat belt, further strengthening the perceived advantages of seat belt usage will indirectly reaffirm participants in their motivation to buckle up.

Secondly, the prominent role of perceived behavioral control (confidence) suggests participants should be encouraged in their opinion that using seat belts in itself is a very useful, but at the same time a very easy thing to do. Even more importantly, people should be offered strategies to resist non-use in cases where such a temptation might be more likely (such as under time pressure, while being busy in mind, if driving outside the city centre on a quite rural road, when having to make a lot of stops, or when traveling short distances, etc.).

Thirdly, for people who did not demonstrate the desired behavior in the past, it might not be sufficient to change their current lack of motivation for instance by having them start thinking about the pros and cons of using seat belts and persuade them of the necessity of wearing this safety device. It is rather typical for such persons to state they will wear seat belts more in the future without ever really adapting their behavior accordingly. A possible outcome here would be to encourage and train such people in planning future seat belt usage. Indeed, empirical research shows that people consciously planning when, how and where they will implement a newly formed intention, are significantly higher in actually performing the targeted behavior (28, 26).
5 CONCLUSIONS AND LIMITATIONS

Two general conclusions can be drawn from this paper. Firstly, in terms of campaign effectiveness, the seat belt campaign investigated here seems to exert only a small effect on some traditionally mentioned determinants of behavior. In addition to that, the way in which people are exposed to a campaign stimulus (i.e., attentively or pre-attentively) might influence the stimulus’ effectiveness.

Secondly, in terms of explaining the mechanism that drives seat belt usage, this study is supportive of the past/repeated behavior hypothesis, meaning participants use seat belts on the basis of an originally formed reasoning without retaking this whole underlying reasoning every time a situation where the use of a seat belt is implied, presents itself.

To end with, this study has its limitations, implying its results should be interpreted with care. A first issue is the use of a cross-sectional survey. Even though it provides first indications, strictly taken, such an approach prevents us from according real causal status to the effects found. A longitudinal approach is therefore required.

Secondly, scholars are rather skeptical about the use of student samples. Still, the merits of student samples should not be overlooked (29). In our case however, there is something to say in favor of selecting students as ‘model type’ respondents, because the campaign under study was tailored more precisely at young adolescents. Next to that, meta-analyses stemming from various disciplines and research areas have shown that effect sizes do not always differ significantly between student and non-student samples (30).

A third potential shortcoming is in the random assignment of respondents being performed at the group (i.e., school) instead of the individual level. As such, finding a difference on the output variables between the treatment and the control groups might still be caused by other factors than the intervention itself, such as a systematic difference between samples on a certain background variable.

Additionally, with a post-measurement only design, there is no ‘basic’ measure to which the scores on the output variables for the treatment and control groups can be compared. The lack of such a within-group point of comparison makes it difficult determine the exact size of the intervention’s effect.

Finally, from a theoretical point of view, it should be noted that the Theory of Planned Behavior has its limitations. In its original format, it excludes determinants (such as emotions like fear or anticipated regret) that have been found critical for the explanation and prediction of behavior and for the reception of messages such as the one under study here (25).

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7 REFERENCES


