

PROMPTING SAFETY BELT USE: COMPARATIVE IMPACT ON THE TARGET BEHAVIOR AND RELEVANT BODY LANGUAGE

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Researchers used two behavioral prompts to compare increases in safety belt use: a Click It or Ticket prompt or a Flash-for-Life prompt. Participants were 1,822 unbuckled drivers exiting two student parking lots of a large university. Research assistants identified unbuckled drivers, flashed one of the two prompts, and recorded whether drivers buckled after the prompt and the drivers' facial expressions and hand gestures. Findings and implications are discussed.

Key words: body language, prompts, rewards, safety belt, threats

The National Highway Transportation Safety Administration (NHTSA) estimates that in 2006, 15,383 lives were saved by the use of safety belts, and an additional 5,441 lives could have been saved had belt use been at 100% (NHTSA, 2006). Currently, estimated safety belt use in the U.S. remains stagnant at 82% (NHTSA, 2007).

An alternative approach is the Flash-for-Life (FfL) technique pioneered by Geller, Bruff, and Nimmer (1985) in the early 1980s when safety belt use ranged from 10% to 20% (Dinh-Zarr et al., 2001). The intervention involved a passenger in the front seat of a vehicle showing unbuckled drivers in adjacent vehicles stopped at intersections a flash card (27.9 cm by 35.6 cm) that read, "Please buckle up—I care" on the front. When an unbuckled driver buckled up on the spot, the passenger flipped the prompt over to reveal, "Thank you for buckling up." Of the 1,087 unbuckled drivers "flashed," 82% turned their heads and looked at the prompt, and 22% of these buckled up.

Similarly, Thyer, Geller, Williams, and Purcell (1987) used this approach to increase

safety belt use at campus parking lots from 19.6% ($n = 629$) to 54.5% ($n = 635$). Following withdrawal of prompting, safety belt use fell to 28.5% ($n = 634$), but rose to 51.5% ($n = 625$) after reinstating the intervention. More recently, Farrell, Cox, and Geller (2007) used the same method at a large student commuter parking lot. Although baseline belt use was already high (i.e., 79.5%), 30% of the unbuckled drivers ($n = 427$) fastened their safety belts immediately after looking at the prompt.

In 1994, North Carolina started a belt-use enforcement program known as Click It or Ticket (CioT) and reportedly increased belt use from 60% to 84% (Williams, Reinfurt, & Wells, 1996). However, this campaign failed to achieve higher levels of belt use in the 5 years following initial implementation (Williams & Wells, 2004). Currently, CioT is the only federally funded U.S. program designed to increase safety belt use.

Skinner posited that the framing of words can influence whether language is reinforcing or punishing (Skinner, 1957), and that positive mands (e.g., "please") may be more effective at prompting a behavior than threats. To date, there is only one study on safety belt use that has examined the efficacy of different prompting techniques (Clayton & Helms, 2009). During the baseline phase, researchers held a sign that said "Have a nice day" and observed

We thank Chris Ninness for his editorial suggestions and assistance with the data analysis portion of this article.

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doi: 10.1901/jaba.2010.43-321

how many people exiting a university parking lot buckled their safety belts in response to the sign. During the intervention, research assistants showed unbuckled drivers either a CioT sign or the FfL sign. Results showed that people buckled in response to the CioT sign significantly more than the FfL sign, and both signs increased belt use above the neutral sign in the baseline condition. The authors suggested that the difference in efficacy between the two signs was due to the fact that CioT has a punitive monetary component and FfL does not. The purpose of the current investigation was to replicate and extend the study by Clayton and Helms by comparing the FfL and CioT prompts and examining whether responses from drivers are indicative of preference for one prompt over the other.

METHOD

Participants and setting. The participants were 1,822 unbuckled drivers (574 women and 1,248 men) exiting a student parking lot at a large university in southwest Virginia. Observations occurred at two locations of a large commuter parking lot, during three nonconsecutive 1-hr shifts, 4 days per week for 2 months. Trained undergraduate research assistants observed only students with a commuter parking permit (which was clearly visible hanging from the rearview mirror) indicating that they were undergraduate students rather than graduate students or faculty or staff members.

Materials and apparatus. The intervention involved the display of either an FfL or CioT prompt. Both prompts were approximately 28 cm by 36 cm. The CioT prompt read, "Click It or Ticket" and contained an image of a person wearing a shoulder harness behind bold blue and red lettering. The FfL prompt read, "Please Buckle Up, I Care" on the front and "Thank You For Buckling Up" on the back in bold black and yellow letters.

Procedure. During each of the 1-hr shifts, one or two research assistants implemented the procedures and collected data for 4 hr per day, 4 days per week for 2 months. The research assistant stood at the exit or entrance of the parking lot near the stop prompt to ensure that drivers could easily see both the prompt and the observer when stopped. When one research assistant was available, he or she held the prompt and collected data. When two research assistants were available, one held the prompt and collected data and the other collected data for the purpose of assessing interobserver agreement. Whenever the research assistant saw an unbuckled driver, he or she held up the intervention prompt, alternating between the two types of intervention prompts daily and by week (e.g., the FfL prompt was used on Wednesday and Friday of the 1st week and on Tuesday and Thursday of the 2nd week). The research assistant held the relevant prompt in both hands, with his or her arms extended and showing a neutral facial expression. In the FfL condition, the research assistant flipped the prompt over to show the thank-you message on the back if the driver buckled after viewing the prompt. After the vehicle left, the research assistant independently recorded the driver's gender, pre- and postflash belt use, facial expression (positive, negative, or neutral), and hand gestures (positive, negative, or neutral), by circling with a pencil one of the list responses on a premade data-collection sheet.

Positive facial expressions included smiles, negative facial expressions included grimaces or frowns, and neutral facial expressions were any expression that did not meet the positive or negative criterion. Positive hand gestures included thumbs up, "shoulder belt salute" (extending one's fastened safety belt), or a wave. Negative hand gestures included a thumbs down or the middle finger. Neutral hand gestures were those that did not meet either the positive or negative criterion. Two research assistants recorded data independently on 50%

Table 1

Percentage of Drivers Buckling up and Giving Positive or Negative Hand Gestures and Facial Expressions as a Function of Each Prompt

Intervention prompt	Buckled up after prompt	Positive hand gestures	Negative hand gestures	Positive facial expressions	Negative facial expressions
Flash for Life $n = 895$	33.6	13.2	0.9	25.0	3.9
Click It or Ticket $n = 927$	25.6	7.8	2.6	18.9	9.2

of observations. Interobserver agreement was calculated for each dependent variable by dividing the number of agreements (both observers recorded the same gender, the same status of the driver's seat belt, the same response to the prompt, the same type of hand gesture, and the same facial expression) by the total number of observations. Interobserver agreement was 93% for driver gender, 93% for identifying unbuckled drivers, 91% for buckling in response to the prompt, 94% for hand gestures, and 85% for facial expressions.

RESULTS

Of the 895 unbuckled drivers prompted with the FfL prompt, 34% buckled up following the prompt; and of the 927 drivers prompted with the CioT prompt, 26% buckled up following the prompt. Given that our study entailed three separate chi-square tests that addressed three different dependent measures (compliance, hand gestures, and facial expressions), Bonferroni corrections were conducted to adjust for potential inflation of the familywise Type 1 error rate. Following the Bonferroni correction, the first chi-square test revealed that the FfL condition differed significantly from the CioT condition in terms the frequency of compliance, $\chi^2(1, N = 1,822) = 14.2, p = .000486$; hand gestures, $\chi^2(2, N = 1,822) = 53.45, p < .0000001$; and facial expressions, $\chi^2(2, N = 1,822) = 27.03, p = .000003$. A summary of the percentage of positive versus negative hand gestures and facial expressions as a function of the intervention approach is presented in Table 1.

The prompts evidenced temporal differences as well (see Figure 1). Compliance with the FfL intervention gradually increased from 33% at the beginning of the study to 41% after 2 months. Compliance with CioT was roughly constant throughout the intervention (27% to 23% from beginning to end).

DISCUSSION

Both prompting strategies were effective at increasing safety belt use, supporting the conclusions of Farrell et al. (2007) that belt use can be increased with a simple reminder, despite already high usage rates. Moreover, based on the chi-square analyses and the differential percentages of compliance, the FfL prompt was more effective than the CioT prompt in the current study in promoting belt use among unbuckled drivers 18 to 24 years old.

In addition, it can be inferred from variations in hand gestures and facial expressions that some drivers preferred the FfL method over the CioT prompt. One explanation for these differences, as mentioned previously, is that the "thank you" aspect of the FfL prompt may act as positive reinforcement, whereas positive reinforcement is absent in the CioT prompt (although there is the threat of punishment). Geller (1991) posited that a portion of the population will actively resist punishment-based approaches to increase their safety belt use, especially because the probability of getting caught unbuckled is low. The greater number of negative facial expressions and hand gestures following the CioT prompt may provide support for this hypothesis.

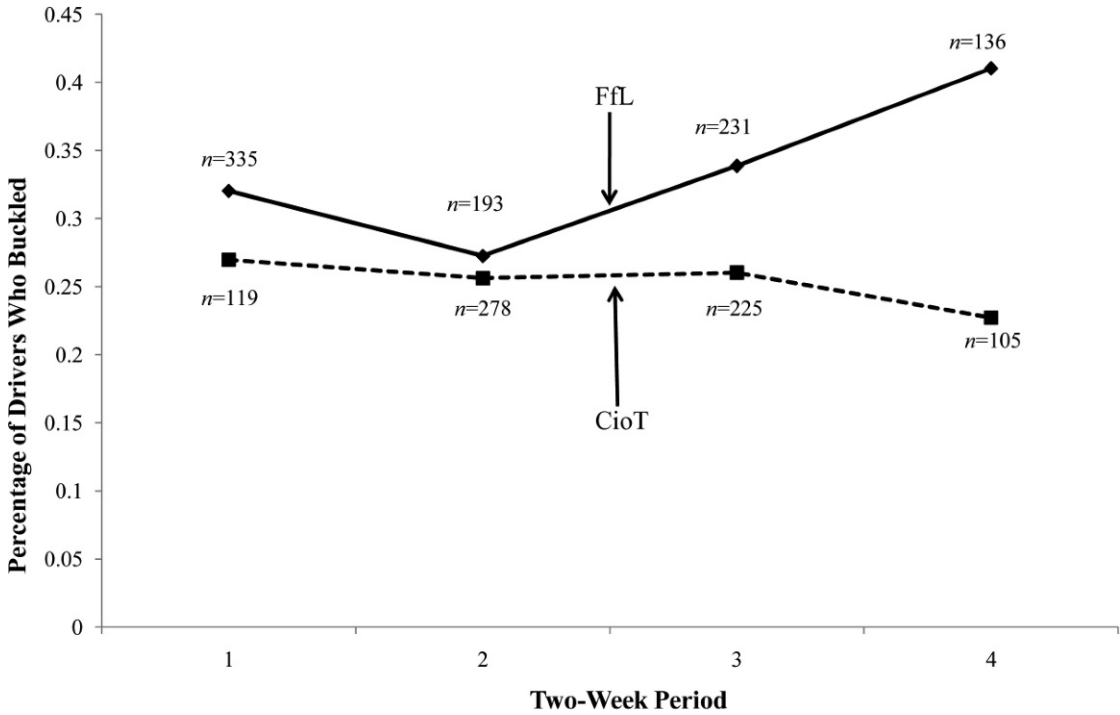


Figure 1. Percentage of drivers who buckled up after viewing either the Flash-for-Life (FfL) or Click It or Ticket (CioT) prompt.

Interestingly, the results of the current study differ from those of Clayton and Helms (2009), who found that CioT was more effective than FfL. The authors noted there was an active CioT campaign in their state while data collection occurred, which may have increased awareness of the possible consequence and the subsequent compliance with the prompt. This was not the case of the current study.

Although the results of the current study are encouraging, there are some fundamental limitations. First, the intervention targeted only university students who were most likely between 18 and 24 years old, which detracts from the study's external validity. Second, the observers were obtrusive, making it impossible to distinguish the impact of the prompts from drivers' awareness of being observed. In addition, the two prompting procedures were not equivalent, in that the FfL involved administering a "thank you" after drivers complied with

the prompt. Moreover, the study did not examine the within-subject effects of the intervention on drivers, such as repeated exposure to the intervention for "repeat offenders" or whether the facial expression and hand gestures came from a select few individuals. Future studies could record license-plate numbers to examine the impact of multiple intervention exposures on individual drivers (cf. Geller, 1983).

We did not record whether an unbuckled driver looked at the FfL or CioT prompt. However, given the positioning of the research assistants at stop signs (along the driver's side), the likelihood that any driver did not see the prompts was low. Also, some drivers might have buckled up after driving away. Future studies might benefit from conducting behavioral observations downstream from the intervention site to ascertain any delayed effects of the prompting intervention.

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Received September 26, 2008

Final acceptance March 17, 2009

Action Editor, Chris Ninness