

## **The persuasiveness of guilt appeals over time: Pathways to delayed compliance**

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## **Abstract**

Past research on guilt-elicitation in marketing does not examine how the communications' effects might persist over time, when there is a gap between advertising at time 1 and the time of choice consideration at time 2. This study explores the processes leading to delayed compliance through guilt-based communications. Guilt elicitation enhances transportation into the message, driving message compliance through the effect of transportation. Transportation explains the effects recorded several days after campaign exposure. The influence of transportation is mediated by two pathways: increases in anticipated guilt and perceived consumer effectiveness. The message type moderates the relevance of different pathways in explaining persuasiveness. Appeals delivered through a text and image message (rather than text only) are more effective in driving compliance and shape reactions via guilt anticipation. The study raises important implications for research on the use of guilt appeals and the design of more effective messages based on this emotion.

## **Keywords:**

Guilt appeals, persuasion, guilt elicitation, narrative transportation, emotions, anticipated guilt

## 1. Introduction

Messages that employ the elicitation of guilty feelings to persuade consumers and change their behaviors (i.e., guilt appeals) have been common in marketing for decades (Huhmann & Brotherton, 1997). These types of communications are frequently adopted in social marketing campaigns (e.g., promoting health-related behavior or pro-environmental behavior; Antonetti, Baines, & Walker, 2015), by firms wishing to communicate the guilt-relieving features of some of their offerings (e.g., fat-free food alternatives, environmentally friendly products; Mishra & Mishra, 2011) as well as charity fund-raising campaigns (Basil, Ridgway, & Basil, 2008).

Despite their popularity, the question of *how* guilt appeals influence consumers remains unanswered (Antonetti & Baines, 2015). Past research is characterized by extensive debates on the true effectiveness of guilt-eliciting messages, under different circumstances (Brennan & Binney, 2010; O’Keefe, 2002) but examination of the process remains understudied.

Evidence indicates that guilt-based messages drive behavioral compliance under laboratory conditions (e.g., Duhachek, Agrawal, & Han, 2012). In these investigations, guilt is manipulated through an emotional appeal and behavior is recorded immediately after exposure. The mechanism assumed to explain guilt’s influence is a coping process: since guilt is an unpleasant emotion, it creates a desire to act to deal with the problem that is causing the emotional state. In real marketing campaigns, however, there is often a temporal gap between the communication eliciting the emotion and the time when compliance materializes. For example, an advert might activate a direct desire to recycle, but the opportunity to act is unlikely to appear immediately after message exposure.

This study, examining guilt appeals under more realistic conditions, extends past research by examining two novel and distinctive pathways by which guilt-based messages generate delayed

compliance. We posit that guilt enhances transportation into the message, and that transportation, in turn, drives compliance through the mediation of anticipated guilt and Perceived Consumer Effectiveness (PCE). In three studies, spanning two different behavioral contexts, we illustrate that increased transportation caused by guilt impacts positively on relevant cognitive (i.e., PCE), affective (i.e., anticipated guilt), and behavioral (i.e., recycling or purchasing) persuasion measured after a three-day delay.

## **2. Research background**

The study suggests a model of delayed compliance based on enhanced transportation via experienced guilt (Figure 1). Increased transportation into the message at the time of exposure to the advert (time 1), influences a number of delayed outcomes (time 2) which include PCE, the anticipation of guilt, and changes in behavior. This perspective suggests that the effect of exposure to an advert on behavior is indirect and mediated by a series of cognitive and emotional processes. Different types of message used to deliver the appeal are also expected to influence the pathways underpinning persuasion. In our empirical study we focus on two different behaviors: recycling and the purchase of faire trade products. To support our research hypotheses, we provide a detailed rationale below.

INSERT FIGURE 1 ABOUT HERE

### *2.1. Persuasion through guilt*

Guilt is a negative emotion caused by the perception of negative consequences associated with the self (Tangney, Stuewig, & Mashek, 2007). Although guilt is often elicited by acts that are directly caused by the individual (Folkes, Koletsky, & Graham, 1987, Roseman, 1991), scholars recognize that behaviors more indirectly associated with the self are also sufficient to elicit guilty feelings (Tracy & Robins, 2004). When guilt is elicited through an appeal, however, marketers

tend to stress the personal responsibility of individual behavior in order to yield more effective messages (Basil, Ridgway, & Basil, 2006).

An important debate has focused on consumers' ability to manage their own guilty feelings, especially in situations where consumers realize that such feelings have been elicited by an external agent as part of a persuasion attempt (Hibbert, Smith, Davies, & Ireland, 2007). Individuals can rationalize the appeal content in order to suppress guilt (Brennan & Binney, 2010). At the same time, meta-analytic evidence and large scale reviews of research on guilt demonstrate that very strong appeals eliciting intense guilt are less persuasive (Antonetti & Baines, 2015; O'Keefe, 2000). Scholars describe an 'inverted-U' relationship between guilt and compliance, arguing that eliciting moderate guilt maximizes effective persuasion (Chang, 2011; Hibbert et al., 2007). This is because high levels of guilt would coincide with disruptive feelings of resentment and anger at the message source, which are ultimately counterproductive (see Coulter & Pinto, 1995).

O'Keefe (2000, p. 80) remarks that "a guilt-based persuasive appeal characteristically has two parts: one is material designed to evoke some degree of guilt [...] the other is the message viewpoint or action, which presumably might offer the prospect of guilt reduction." Although consumers may experience guilt when exposed to an appeal promoting recycling, the message becomes relevant again only at time 2 when the individual considers recycling (Antonetti & Baines, 2015; p. 343). Successful persuasion attempts need to be able to bridge this temporal gap. Since evidence suggests that the feelings elicited at time 1 will need to be moderate to avoid negative reactance (Hibbert et al., 2007), the question arises of which process explains delayed effects. Guilt as an emotional state dissipates quickly and therefore will have only indirect influences on future behavior (Baumeister, Vohs, DeWall, & Zhang, 2007). Consequently, scholars need to theorize an alternative persuasion process that does not rely on the coping mechanisms that explain persuasion

under laboratory condition, when individuals make decisions while experiencing the emotion (Duhachek et al., 2012). This research offers the first account of how message compliance at time 2 precipitates.

Our research posits transportation into the appeal (Green & Brock, 2000) as a key explanatory mechanism. Transportation refers to an experience of intense immersion or absorption into the message characterized by “an integrative melding of attention, imagery, and feelings [...] a convergent process, where all mental systems and capacities become focused” (Green & Brock, 2000; p. 79). The idea of transportation as a persuasive mechanism first emerged in the analysis of how stories and narratives can be used to influence people’s beliefs (Green & Brock, 2000). Recently, however, scholars have noticed that transportation as a form of persuasion does not require the use of clear narrative forms (i.e., characters and a succession of events) but that different types of advertisements can lead to transportation. For example, scholars show that the use of imagery and grotesque is sufficient to trigger transportation (Phillips & McQuarrie, 2010). More broadly, self-references in the advertisement’s text (Escalas, 2007) as well as autobiographical memories associated with the product advertised (Sujan, Bettman, & Baumgartner 1993) can trigger transportation into the ad.

Guilt experiences offer another avenue to generate transportation. When guilt is elicited, people construct alternative versions of reality where the negative outcomes appraised could have been avoided (Baumeister et al., 2007; p. 173). This mental simulation, consistent with self-referencing processes (Escalas, 2007), leads to message immersion. Consequently, we expect that:

H1: Feelings of guilt influence transportation into the appeal positively.

While testing H1, we also rule out the possibility that the appeal triggers a volitional process by influencing consumers’ attitudes towards the advertisement topic (Ajzen, 1991). From this

perspective, feelings of guilt would lead individuals to see a certain action or offering more positively because it represents an opportunity for guilt quelling. We examine the possibility of persuasion through an attitude-based model to rule out this potential alternative explanation.

## *2.2. Consequences of transportation*

Although some scholars question the utility of guilt appeals (Brennan & Binney, 2010; Cotte, Coulter, & Pinto, 2005; Coulter & Pinto, 1995; Graton et al., 2016), several investigations confirm their effectiveness (e.g., Duhachek et al., 2012), although they do not employ a longitudinal design. In this study, we examine guilt-triggered transportation as responsible for delayed compliance. The activation of transportation implies that consumers have accepted the appeal and not reacted negatively to the guilt elicitation. A recent meta-analysis demonstrates that transportation is associated with reduced critical thinking concerning the communication and increased affective reaction aligned with the message (van Laer, de Ruyter, Visconti, & Wetzels, 2014). Transportation also hinders counter-arguing and leads to acceptance of incorrect information (Jensen, Bernat, Wilson, & Goonewardene, 2011). Therefore, the persuasive role of transportation apparently leads to a more lasting trace of the campaign in an individual's memory, triggering stronger delayed compliance (Jensen et al., 2011). We expect that transportation is responsible for the learning process activated at time 1 and for delayed effects of the message on consumer behavior, therefore:

H2: Transportation into the appeal influences compliance positively.

A successful campaign promoting recycling can influence behavior through several pathways. Exposure to persuasion at time 1 can change behavior at time 2, and also influence delayed cognitive and emotional reactions relevant to the topic advertised. From this perspective, we can

conceive different potential mediating mechanisms that link transportation into the message (time 1) with compliance (time 2).

Guilt is effective at driving individual behavior when it is *anticipated*. Research on the promotion of environmentally responsible behavior has shown consistently that anticipated guilt leads to more sustainable choices (Peloza, White, & Shang, 2013). Anticipated guilt thus refers to consumers' predictions that they would feel guilty if they were to misbehave in relation to a hypothetical scenario. Transportation into the advert should stress the perceived negative consequences generated by the targeted behavior and, consequently, any message trace in memory could strengthen anticipated guilt at time 2 because it would reinforce the perceived threat or damage associated with the issue communicated. Individuals transported into the message are more likely to believe the message content, even when they know it is untrue (Marsh & Fazio 2006; van Laer et al., 2014). This is because they are less likely to generate critical thoughts about the persuasive communication (Green & Brock, 2000; Slater & Router, 2002). Perceiving the message as more truthful and desirable (Escalas, 2004; 2007), will make it easier for individuals to anticipate guilt in relation to a potential misbehavior since the emotion is strongly linked to an appraisal of negative outcomes perceived as relevant to the self (Antonetti & Baines, 2015; Roseman, 1991). Based on the preceding discussion, we expect that transportation will lead consumers to anticipate more strongly feelings of guilt if they imagine not recycling in the future. Hence:

H3: The influence of transportation on compliance is partly mediated by the anticipation of feelings of guilt.



Successful persuasion attempts could also change individuals' beliefs about the topic. PCE<sup>1</sup> received significant attention because individuals are more likely to act when they perceive their actions making significant differences (Antonetti & Maklan, 2014). Stable beliefs about one's own ability to contribute to the solution of an environmental problem drive responsible behavior (Roberts, 1996). Despite evidence that guilt is associated with beliefs about personal effectiveness (Antonetti & Maklan, 2014), past research has not examined whether such relationships persist when a temporal gap is considered. Although the link between transportation and PCE has not been assessed empirically in previous research, several arguments suggest a strong and positive association. As discussed above, transportation increases the perception that the facts presented are true (van Laer et al., 2014). This should lead to individuals perceiving their behavior as more impactful because the content used to activate guilt will describe negative outcomes that can be affected by personal behavior (Antonetti & Maklan, 2014). Furthermore, since transportation implies the formation of beliefs aligned with the message (Green & Brock, 2000; Slater & Router, 2002), consumers are expected to accept their personal responsibility in such outcomes as this is one of the dominant themes in guilt appeals. Hence:

H4: The influence of transportation on compliance is partly mediated by PCE.

### *2.3. Type of message and delayed effects*

We compare appeals delivered exclusively through text to messages using both text and images. Research suggests that the latter should be more effective and persists longer in memory (Childers & Houston, 1984). Furthermore, messages engaging participants at different levels (e.g., sound, vision, etc.) are more likely to lead to transportation (van Laer et al., 2014). Overall, we expect

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<sup>1</sup> Perceived consumer effectiveness is analogous to *response* efficacy and different from *self*-efficacy, which focuses on people's beliefs about whether they are able to carry out a certain behavior (Bandura, 1986).

that messages delivered through text and images will have a stronger delayed effect on compliance compared with messages delivered solely through text.

The nature of the message also influences the type of persuasion effects. Strong persuasion will influence individuals' abilities to anticipate guilt and PCE beliefs (Reinwein, 2012), and drive behavioral compliance (Baumeister et al., 2007). Changes in beliefs and in the affectivity associated with a certain action are often required to change behavior successfully and in the long-term (Prochaska, Wright, & Velicer, 2008). From this perspective, guilt appeals are successful when they demonstrate delayed effects on how people think and feel about a certain issue. Compared to text-only messages, those delivered through text and images are expected to drive behavioral change more through the mediation of PCE and anticipated guilt (Childers & Houston, 1984; Reinwein, 2012).

Imagery can generate a sense of self-reference conducive to enhanced persuasion (Escalas, 2007), especially when the images match the appeal content (Chang, 2013) and individuals generate these mental images of themselves engaging with the product or topic of the communication (Petrova & Cialdini, 2005). Therefore, a message delivered through text and images will create a greater sense of PCE. Increased fluency is also conducive to stronger and more constructive guilt experiences (Duhachek et al., 2012). A message that persists in memory longer (Childers & Houston, 1984) and is easier to process (Adaval & Wyer, 1998) could facilitate the anticipation of guilty feelings (Baumeister et al., 2007). Consequently, we surmise that messages containing images are not simply more effective than appeals containing only text, but that their effectiveness rests on strengthening the mediating role of PCE and anticipated guilt. Therefore:

H5: The type of message moderates the paths between transportation into the appeal at time 1 and compliance at time 2. Text and image appeals, when compared to only text appeals, strengthen compliance and reinforce the mediating role of anticipated guilt and PCE.

### **3. Overview of the empirical research**

The research hypotheses are tested through three longitudinal studies. Studies 1a and 1b focus on testing the main mediation mechanisms (H1 to H4), in two different behavioral contexts. Study 2 examines the main model and the moderation suggested by H5. At time 1, participants are exposed to one of two appeals promoting either recycling (Study 1a and 2) or the consumption of fair trade labelled products (Study 1b). We use two versions of the same appeal. The guilt condition contains some additional information aimed at manipulating the target emotion. At time 1, measures of experienced guilt, transportation into the message and attitude towards the behavior are collected. At time 2, we collect persuasion measures based on cognition (PCE), emotions (anticipated guilt), and self-reported behavior. In all studies, participants in the first survey are invited to complete the second survey after three days.

### **4. Study 1a**

#### *4.1. Method*

A leading international panel company recruited 579 US participants in an online experimental study. We used nationally representative quotas for gender, age groups, and geographical distribution (at the state level). Participants accessed the survey via a link and were allocated to one of two conditions randomly. The two groups saw a similar message that varied the type of information provided to manipulate guilt. A cover story informed participants that the study was part of a “potential new campaign aimed at promoting recycling” launched by a charity called

“Recycle Now”. After participants review the communication, scales measuring guilt, transportation and attitudes towards recycling were administered. The 502 participants who completed the first survey were invited to the second survey where measures of PCE, anticipated guilt, and recycling behavior were collected. The second survey was introduced to participants as a follow-up from the initial survey, and the name of the fictitious charity is repeated to rule out potential “sleeper” effects (see Kumkale & Albarracín, 2004). Towards the end, all participants were debriefed. The final sample comprised 401 participants (52% female) who answered at both times. In terms of age, 33% were 18-34 years old, 45% were 35-54, and 22% were 55 or above.

Two slideshow presentations aimed at promoting recycling were developed. Both messages described the importance of recycling and the impact of recycling on the environment, but only one of the messages contained information aimed at eliciting guilt. These additional sections stressed the negative outcomes associated with landfills (*“Millions of people live near a landfill. According to scientific research they will have a higher risk of contracting several types of cancer. Their children will have a higher risk of birth defects and lower average birth weight.”*) and the personal responsibility of individual consumers in directly causing the negative outcomes (*“You have a choice. If you don’t recycle you are choosing to ignore the problem, just because you think it doesn’t affect you. Every time you failed to recycle – because the right bin was too far, too difficult to find or you were simply too busy – you made landfill sites more numerous, larger and more dangerous for all of us. [...] During an average lifetime, a person will produce 600 times his/her weight in trash - enough to fill a good few trucks. How much of that waste will end up in a nearby landfill is your choice.”*). The control condition contained general information about the benefits of recycling not aimed at stressing personal responsibility. Both messages contained also some images to illustrate the textual information. A pre-test ( $N = 176$ ) conducted on Amazon

Mechanical Turk (Mason & Suri, 2012) suggests that participants felt stronger feelings of guilt (measured on a 7-point scale from 1 = not at all to 7 = extremely) when exposed to the relevant appeal ( $M_{guilt} = 3.36$  versus  $M_{control} = 2.02$ ,  $t(174) = 6.32$ ,  $p < .001$ ). Both messages were perceived as credible ( $M_{guilt} = 5.73$  versus  $M_{control} = 5.73$ ) and realistic ( $M_{guilt} = 5.60$  versus  $M_{control} = 5.84$ ), with no differences between conditions ( $p = .996$  and  $p = .171$  respectively).

The study employed measures relating to the following variables at time 1: experienced guilt, transportation, attitude towards recycling. At time 2 we measured anticipated guilt, PCE, and self-reported recycling behavior<sup>2</sup> over the previous 3 days. In both time 1 and time 2 the presentation of the scales and of the items within each scale was randomized. All measures are taken from existing research and details are presented in Appendix A. All measures perform satisfactorily in terms of reliability. Discriminant validity tests are also satisfactory with the Fornell-Larcker criterion met for all latent variables (Fornell & Larcker, 1981) and a highest HTMT ratio of .65; below the recommended threshold (Henseler, Ringle, & Sarstedt, 2015). We also include a social desirability measure (Reynolds, 1982) as a covariate. Finally, we used a recall measure asking participants to identify correctly nine elements of the advert. This measure allowed the ruling out of effects based purely on memory of the campaign's content.

#### 4.2. Results

The analytical strategy comprises three steps. First, differences between guilt and control appeals were examined. Second, a path model was estimated using a Partial Least Squares

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<sup>2</sup> Measures of self-reported behavior in an environmental context can be potentially biased by social desirability. On the other hand, extensive evidence on the validity of behavioral self-reports is also available (Corral-Verdugo, 1997). Our measure is validated in two steps. First, in this investigation we find that it is not correlated to social desirability ( $r = .049$ ,  $p = .332$ ). Second, in another study, conducted as part of our wider research program, we find that self-reported recycling is significantly associated with behavioral proxies such as the willingness to share the participant's email address to be involved in recycling initiatives ( $t(394) = 3.85$ ,  $p < .001$ ) and the number of seconds spent reading a petition aimed at new legislation to favor recycling ( $r = .12$ ,  $p = .016$ ). This evidence supports the validity of our dependent variable in this specific research context.

approach to Structural Equation Modeling (PLS-SEM). PLS-SEM is preferable here because of its resistance to violations of normality and its focus on prediction (Hair, Ringle, & Sarstedt, 2011). This approach also fits the exploratory nature of this study, since this is the first investigation modeling the delayed effects of guilt appeals (Hair et al., 2011). Finally, a mediation analysis was implemented (Hayes, 2013) to test the indirect effects. Since our theory postulates that exposure to appeals at time 1 has indirect effects on persuasion at time 2, testing the significance and directionality of indirect effects offers the best ultimate assessment of its predictive validity (Zhao, Lynch Jr., & Chen, 2010).

Table 1 shows the descriptive statistics across conditions. The only main effect concerns the level of guilt elicited across the two groups ( $t(399) = 5.81, p < .001$ ) while there is no total effect for any of the other variables.

INSERT TABLE 1 ABOUT HERE

To test the relationships postulated in Figure 1, a PLS-SEM analysis is conducted using the software SmartPLS 3.0 and 5,000 re-samples for the bootstrapping routine (Hair et al., 2011). All research hypotheses are supported by the data. Feelings of guilt lead to transportation ( $\beta = .41, p < .001, f^2 = .21$ ) and transportation impacts on PCE ( $\beta = .57, p < .001, f^2 = .48$ ) and anticipated guilt ( $\beta = .48, p < .001, f^2 = .30$ ) positively. Conversely, there is no direct impact of transportation on recycling behavior ( $\beta = .09, p = .623$ ). Both PCE ( $\beta = .41, p < .001, f^2 = .12$ ) and anticipated guilt ( $\beta = .14, p < .05, f^2 = .02$ ) influence recycling behavior positively. In general, the model predicts a small amount of variance in reported recycling ( $R^2 = .20$ ). Effect sizes show that guilt has a sizable effect on transportation and that the path through PCE is important in explaining recycling intentions. Although the link between transportation and recycling is statistically insignificant, if we re-run the model excluding the mediators PCE and anticipated guilt, we find a

positive significant effect ( $\beta = .20, p < .001$ ), suggesting a complete mediation of the impact of transportation by PCE and anticipated guilt. To rule out the potential alternative explanation of attitude as a mediator, we re-run the model with attitudes towards recycling replacing transportation. The path linking elicited guilt to attitudes towards recycling is not significant ( $\beta = -.07, p = .872$ ), ruling out the alternative explanation.

Lastly, indirect effects are estimated using PROCESS and 10,000 re-samples for bias-corrected and accelerated bootstrapping (Hayes, 2013). The average of all items is used for the constructs. The guilt condition was coded as 1 and the control condition as -1. All indirect effects (see Table 2) were positive and statistically significant, lending support for the mediations postulated by our theory (Zhao et al., 2010). To control for potential effects due to the specific recall of the advert content, we re-estimated the indirect effects, introducing the recall measure as a covariate. Results were robust to the introduction of this variable in the model. Finally, we also examined whether social desirability affects our results. The introduction of this scale in the model also does not affect the findings.

INSERT TABLE 2 ABOUT HERE

#### *4.3. Discussion*

The findings support our predictions and extend our understanding of how guilt appeals persuade consumers over time. Importantly, our findings suggest that guilt-eliciting messages have only small indirect effects on compliance. This finding seems consistent with accounts stressing how guilt appeals lead to message rejection (Graton et al., 2016). The overall delayed effect of the appeal on compliance is likely to be small because there might be alternative paths that, due to perceptions of manipulative intent (Campbell, 1995), may reduce message persuasiveness (Hibbert, Smith, Davies, & Ireland, 2007).

Our findings are consistent with a dual-pathway model postulating anticipated guilt and PCE as key mediators. These delayed effects on cognitive and emotional variables are important because repeated exposure over time might reinforce compliance through these pathways that previous research has shown to be reliable predictors of self-regulation (Antonetti & Maklan, 2014; Baumeister et al., 2007). This study rules out attitude-based models as potential alternative explanatory approaches to the effects of guilt messages. To replicate our findings in a different behavioral context, and test their reliability, Study 1b studies the influence of guilt appeals when promoting the consumption of fair trade labelled products.

## **5. Study 1b**

### *5.1. Method*

A sample of 299 participants, all US residents, was recruited using the online panel Prolific Academic ([www.prolific.ac](http://www.prolific.ac)). Recent evidence supports the suitability of this panel service for behavioral research and its relative superiority to other popular alternatives such as Amazon Mechanical Turk (see Peer, Brandimarte, Samat, & Acquisti, 2017). 288 participants who correctly answered an attention check question were invited for a second survey after three days. 244 participants answered at both time 1 and time 2 (45% female). In terms of age, 58% were 18-34 years old, 32% were 35-54, and 10% were 55 or above<sup>3</sup>.

All procedures were consistent with Study 1a<sup>4</sup> unless otherwise specified. We used two messages focused on promoting consumption of fair trade products. These were presented as alternatives *“that offer better prices to poor farmers and guarantee the respect of environmental standards.”* In the guilt condition, the message included both a personal story of someone in need

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<sup>3</sup> Since this study does not employ representative quotas, the sample tends to be younger than in Study 1a and Study 2. Robustness checks however show that neither age nor gender influence significantly the analyses conducted.

<sup>4</sup> We used a cover story similar to the one used in Study 1a but that would match the content of the appeal and therefore focused on the promotion of fair trade.



who might benefit from fair trade (*“Aisha is a tea farmer in Nyandara County, in central Kenya. Her family has farmed tea for generations. Her village has no school and her two sons walk two hours to school every day. Aisha’s cooperative has started building a new school in her village. Will you help Aisha and her family by buying fair trade tea?”*) and a general appeal to personal responsibility in support of fair trade (*“As consumers, every time we decide to put ourselves first and save money by buying products that are not fair trade, we collude with this broken trade system, leaving people powerless and stuck in poverty. How often have you bought fair trade in the past? Fair trade costs only 5% more than traditional alternatives and is available in more than 90% of all stores across the country. Yet, it accounts for only 10% of overall sales in the USA. Clearly, there is so much more we can do to help Aisha. If you don’t do it, who will?”*). The control condition illustrated the advantages of fair trade but without focusing on personal responsibility and avoiding guilt eliciting content. Both appeals contained images to illustrate the textual content.

All key constructs collected in Study 1a were retained in this investigation. To avoid that PCE and anticipated guilt might bias the behavioral measure, at time 2 we started by asking about participants’ behavior over the last three days. Then participants answered items about PCE and, finally, questions on anticipated guilt. Details of the items are available in Appendix A. In addition, a few controls were added to the questionnaire. Four items measuring altruistic values ( $CR = .92$ ,  $AVE = .73$  - Schwartz, 1992) were collected at time 1. Since past research shows that altruistic values are a strong driver of fair trade consumption (Doran, 2009), including this measure of a personal trait in our analysis allows monitoring whether the drop out of participants between time 1 and 2 could explain differences in compliance. Furthermore, at time 1, experienced guilt was measured together with other five items assessing negative feelings (angry, disgust, anxiety, apprehension, and sadness) using the same scale. We included these items to control for the impact

of other negative emotions that might be elicited by the guilt appeal and which could explain the effects hypothesized. At time 1, we also added five items on a 7-point scale measuring the perceived manipulative intent of the appeal ( $CR = .91$ ,  $AVE = .71$  - Campbell, 1995). Past research shows that guilt messages can be counterproductive when they generate such inferences of manipulation (Hibbert et al., 2007). It would be interesting to assess whether the pathways proposed in Figure 1 yields positive delayed effects once controlling for such negative reactions. At time 2, we measured recall using the same approach of Study 1a and used also a different measure of social desirability response (Crowne & Marlowe, 1960). As shown in Appendix A, there are no reliability concerns. Discriminant validity is also respected through the assessment of the Fornell-Larcker criterion and the HTMT ratio (highest value .63).

## 5.2. Results

The analysis of the differences between conditions, shows that the guilt appeal, as expected, elicits a higher level of the target emotion ( $t(242) = 5.94$ ,  $p < .01$ ). Importantly, the guilt appeal does not produce any effect on the other negative emotions measured ( $p > .05$ ). No other total effect for the other variables is detected. Of the other controls examined, as expected there is evidence of an effect of appeal condition on manipulative intent ( $M_{guilt} = 2.94$  versus  $M_{control} = 2.39$ ,  $t(242) = 3.66$ ,  $p < .001$ ).

INSERT TABLE 3 ABOUT HERE

A PLS-SEM analysis is conducted using the procedures described above. Consistent with H1, higher guilt triggers transportation ( $\beta = .53$ ,  $p < .001$ ,  $f^2 = .29$ ) and this variable, in turn, influences both PCE ( $\beta = .45$ ,  $p < .001$ ,  $f^2 = .18$ ) and anticipated guilt ( $\beta = .58$ ,  $p < .001$ ,  $f^2 = .36$ ). Transportation ( $\beta = .24$ ,  $p < .001$ ,  $f^2 = .05$ ), PCE ( $\beta = .46$ ,  $p < .001$ ,  $f^2 = .26$ ) and anticipated guilt ( $\beta = .18$ ,  $p < .05$ ,  $f^2 = .05$ ) contribute to explaining purchase of fair trade products ( $R^2 = .53$ ). As in

Study 1a, effect sizes suggest that guilt has a sizable impact on transportation and that PCE is the dominant mediator.

We also assess a potential alternative model with attitudes, rather than transportation, as mediator of the effects of guilt. Although the path linking guilt to attitudes towards fair trade is smaller than the path to transportation, the parameter is statistically significant ( $\beta = .22, p < .001, f^2 = .06$ ). Effects from attitudes to PCE ( $\beta = .29, p < .001, f^2 = .08$ ), anticipated guilt ( $\beta = .35, p < .001, f^2 = .08$ ), and purchase behavior ( $\beta = .12, p < .05, f^2 = .02$ ) are also significant, although they show smaller effect sizes.

Finally, we estimate indirect effects of the causal chain from appeal condition to purchase behavior. As documented in Table 4 all effects are significant and consistent with our hypotheses. The same analysis is conducted also replacing attitudes towards fair trade with transportation in our causal chain. Table 4 shows that, although statistically significant, the effects are smaller when this variable is being considered. We then estimated all the relevant models introducing the measures of advert recall, social desirability, altruistic values and manipulative intent. We find several significant effects. Altruistic values influence the level of guilt elicited by the appeal ( $\beta = .42, p < .001$ ) and the level of transportation in the message ( $\beta = .22, p < .001$ ). Furthermore, manipulative intent reduces transportation ( $\beta = -.18, p < .001$ ) and social desirability influences purchase behavior ( $\beta = .06, p < .001$ ). Despite these effects, all mediation analyses support our model yielding positive indirect effects that are significant and consistent with our hypotheses. Conversely, the indirect effects are not statistically significant when we run the same model using attitudes to replace transportation in the model. To rule out the potential role of other negative emotions we conduct the same mediation analysis; this time using the five items measuring different negative emotions as covariates. In the case of transportation, the only significant effect

is the impact of apprehension ( $\beta = -.19, p < .001$ ). In the case of attitude, disgust ( $\beta = -.17, p < .001$ ) and apprehension ( $\beta = -.22, p < .001$ ) have a negative influence while sadness has a positive effect ( $\beta = .15, p < .001$ ). Furthermore, disgust has a positive impact on PCE ( $\beta = .16, p < .05$ ). Despite these effects, guilt's unique indirect effects through transportation remain statistically significant and consistent with our hypotheses. Both pathways are supported by the data. The indirect effects for attitudes, however, are not robust to the inclusion of these controls<sup>5</sup>.

INSERT TABLE 4 ABOUT HERE

### 5.3. Discussion

Taken together the results suggest support for our research hypotheses in another behavioral context. Scholars have stressed the importance of replications when adopting SEM procedures (Bollen and Pearl, 2012). Furthermore, our analysis rules out the impact of several additional covariates to the unique indirect effect of experienced guilt in our causal chain. The only difference from Study 1a concerns the role of attitudes. Even though in this study the construct shares a significant amount of variation with transportation (see Table 3), ultimately our findings show that it fits the data less convincingly (Hair et al., 2011).

In both Study 1a and 1b we do not find a main effect of appeal condition on transportation. Evidence from Study 1b suggests that this might be due to the role of reactance to the appeal. Guilt-elicitation creates manipulative inferences that can hinder transportation. Supporting this contention, the correlation between transportation and manipulative intent is negative ( $r = -.34, p < .001$ ). This suggests that two paths from appeal condition to transportation might coexist: together with the positive path hypothesized in this research, there might a negative path driven by inferences of manipulative intent (Hibbert et al., 2007).

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<sup>5</sup> For ease of presentation we analyzed the different controls separately. Nonetheless, even when all controls are added to the model at the same time, the indirect effects hypothesized by our model remain statistically significant.

## 6. Study 2

### 6.1. Method

Study 2 featured a 2 (appeal: guilt vs control) X 2 (type of message: image and text vs only text) between-subjects experiment. In the image and text condition, individuals saw the same message used in Study 1a. In the text-only condition, participants were exposed to the same text but without the images. Through the same panel provider used in study 1a, we recruited an independent sample of 410 US participants with nationally representative quotas by gender, age and geographical area. A total of 311 (48% female) completed answers were collected, comprising both time 1 and time 2, and age groups were evenly represented: 29% of participants were between 18 to 34 years old, 37% between 35 and 54 years old, and 34% were 55 or above.

Appendix A show details of the scales used. We also added a measure of environmental concern (CR = .89, AVE = .69 - Polonsky, Kilbourne, & Vocino, 2014) which was examined to assess whether indirect effects remained significant once we controlled for the role that environmental concern played in participants' reactions to the advert and in motivating recycling behavior. All key reliability indicators are above recommended thresholds. Discriminant validity was also supported when tested through the Fornell-Larcker criterion and the HTMT ratio (highest value .58).

### 6.2. Results

Table 5 presents descriptive statistics and correlations. There is a main effect of appeal condition on elicited guilt ( $F(1, 307) = 29.03, p < .001, \mu^2 = .08$ ) and on transportation ( $F(1, 307) = 5.94, p < .05, \mu^2 = .02$ ). All other variables are not influenced by either appeal or type of message conditions, or their interaction. However, there is a significant interaction for PCE ( $F(1, 307)$

=4.09,  $p = .04$ ). Delivery through image and text is more effective in influencing PCE for the control conditions, while this differential impact disappears in the guilt appeals.

INSERT TABLE 5 ABOUT HERE

First, we run a PLS-SEM model to replicate the findings of study 1. Guilt has a significant influence on transportation ( $\beta = .42, p < .001, f^2 = .22$ ) and transportation affects both PCE ( $\beta = .53, p < .001, f^2 = .38$ ) and anticipated guilt ( $\beta = .45, p < .001, f^2 = .26$ ). The model, however, yields a negative direct path of transportation on recycling behavior ( $\beta = -.18, p < .01, f^2 = .03$ ). Finally, both PCE ( $\beta = .45, p < .001, f^2 = .16$ ) and anticipated guilt ( $\beta = .17, p < .01, f^2 = .03$ ) have a positive influence on recycling behavior. If we re-run the model, excluding the mediators PCE and anticipated guilt, we find a positive effect of transportation on recycling ( $\beta = .15, p < .01$ ). Overall, the analyses support H1 to H4. A potential alternative model with attitude replacing transportation is also tested. The path linking elicited guilt to attitudes towards recycling is not significant ( $\beta = -.07, p = .145$ ) and therefore the alternative explanation is not supported.

To test H5, we run a PLS-SEM multi-group analysis (PLS-MGA) allowing the comparison of pathways between the text-only and text and image conditions (Table 6) (Henseler, 2012). This analysis is complemented by calculating the indirect effects between the two groups (Table 7). Findings show that H5 is partially supported by the data. In general, the image and text condition appears much more effective in driving delayed persuasion. The paths from transportation to anticipated guilt and from anticipated guilt to recycling behavior are strong in the image and text condition, while not statistically significant in the text-only group. On the contrary, PCE operated similarly within the two conditions. The results of the PLS-MGA analysis also indicated that indirect effects calculated for the paths from guilt at time 1 through to recycling behavior at time 2 were significantly stronger (at  $p < .05$ ) in the text and image condition than in the text-only

condition (indirect effect text-only  $\text{Guilt} \rightarrow \text{Recycling}$ : .01,  $p = .87$ ; indirect effect text and image  $\text{Guilt} \rightarrow \text{Recycling}$ : .12,  $p < .01$ ). A similar pattern of results appeared for the indirect effects estimated for the paths from transportation to recycling (indirect effect text-only  $\text{Transportation} \rightarrow \text{Recycling}$ : .26,  $p < .01$ ; indirect effect text and image  $\text{Transportation} \rightarrow \text{Recycling}$ : .42,  $p < .01$ ). These differences are also reflected in the predictive relevance of the models which is much higher in the case of text and image ( $R^2 = .35$ ) than in the case of text-only ( $R^2 = .17$ ).

Analysis of indirect effects (Table 7) supports the mediations hypothesized (Hayes, 2013) showing that effects are stronger in the text and image compared with the text-only condition. The analysis was re-conducted including environmental concern as a covariate, and all effects were robust to the addition of this control to the model.

INSERT TABLE 6 ABOUT HERE

INSERT TABLE 7 ABOUT HERE

### 6.3. Discussion

Besides replicating Study 1a and Study 1b, Study 2 indicates that, while overall messages delivered using images and text are more effective than text-only appeals, this difference is explained via anticipated guilt. Messages using images are more likely to trigger anticipated guilt and, through this mechanism, exert a stronger impact on compliance than text-based campaigns. This evidence is consistent with research on the role of images in advertising (Childers & Houston, 1984; Petrova & Cialdini, 2005). Conversely, PCE is equally affected by both text and image and text-only appeals.

Interestingly, there is no evidence that differences in message type change the perception of the message at time 1. Using image and text does not interact with the impact of guilt on transportation

( $p = .325$ ) and the mean values are very similar across the different conditions. Thus, the effect of type of message is specifically associated with the ability to influence delayed effects rather than an immediate impact at the time of communication.

Furthermore, it is interesting to observe the negative path between guilt and recycling behavior obtained. Following on from Study 1b, this finding appears associated with the negative side of guilt already discussed. Once we model the positive effects of guilt through the mediators considered in this study, what remains is a negative relationship determined by negative reactions to what are perceived as manipulative messages (Hibbert et al., 2007).

## **7. General discussion**

### *7.1. Implications for research*

The study offers a novel account of how guilt appeals influence delayed compliance. This is the first investigation to model two pathways independently leading to delayed compliance. We make several contributions to research on the guilt appeal and open several avenues for future research.

This study provides evidence that guilt-eliciting messages shape how people think and feel about a certain advocacy. Although there has been much focus on guilt as a driver of behavioral compliance (O’Keefe, 2000), this research shows that the impact of guilt on cognitive and affective processes is crucial to how persuasion occurs longitudinally. Future investigations might examine how emotion elicitation shapes the way people feel and think about important issues for marketing practice and public policy. From this perspective, our work contributes to research on pro-environmental behavior (e.g., Bamberg & Moser, 2007). The evidence presented reinforces the importance of PCE and anticipated guilt as antecedents of responsible or sustainable behavior and offers practical insight into how these processes might be reinforced (Thøgersen, 1996).



To the best of our knowledge, this is the first study to examine the impact of different message types on the effectiveness of guilt appeals and their persuasion mechanisms. We build on research stressing the importance of imagery in persuasion (Adaval & Wyer, 1998; Childers & Houston, 1984; Petrova & Cialdini, 2005), to demonstrate that this message feature plays a key role when using guilt appeals.

Importantly, while showing that the indirect paths hypothesized are positive, our research is also consistent with studies that raise questions on the overall effectiveness of guilt-based messages (Coulter & Pinto, 1995; Graton et al., 2016). Overall our findings suggest that guilt has only small indirect delayed effects and raises the possibility of indirect negative paths that might link emotion elicitation to compliance. Further research might develop a more nuanced understanding of these positive and negative indirect effects to assist in evaluating the conditions that make guilt-based communication campaigns more effective. Future studies might also consider exactly how negative reactions towards the message affect persuasion over time. Two issues are relevant here. Firstly, there is the issue of how negative reactions following an advert at time 1 might be expected to disrupt persuasion at time 2. What are the reasons for this ‘delayed backfiring’ of guilt appeals? Secondly, it is interesting to test whether, in a process akin to the ‘sleeper effect’ (Kumkale & Albarracín, 2004), the negative reactions might decay over time. Our findings do not point in this direction but this study adopted a relatively small temporal gap (three days).

The relatively small effects detected in this study raise the important question of how repetition might influence the persuasion process. The literature suggests an ‘inverted-U’ relationship between number of repetitions and persuasiveness of a message because too few repetitions would limit the impact of a campaign while too many would generate resistance (Schmidt & Eisend,

2015). It would be interesting to examine how repetition affects the persuasiveness of guilt-eliciting messaging and whether the positive effects detected can be strengthened after several encounters with the campaign. A concern in this respect is that guilt appeal, as documented in previous studies (Coulter & Pinto, 1995; Hibbert et al., 2007) and demonstrated here, also have the potential to generate reactance. Would this potentially mean that the ‘inverted-U’ has a narrower distribution for guilt campaigns (i.e. the optimum level of repetitions is reached earlier)? This seems likely considering the implicit ability of even moderate guilt-based messages to be perceived as more manipulative. It is therefore possible to argue that the intensity of the guilty feelings elicited by the message might influence the relative impact of repetition. Correspondingly, for very strong messages the acceptable number of repetitions might decrease. It would be also interesting to assess whether the different pathways tested here would be differentially affected by repetition. Since in our study the mediation through anticipated guilt was relatively weaker, it is possible that this pathway would benefit more from repeated exposure.

Although the findings of Study 2 establish the importance of imagery in guilt-eliciting communications, when considering the way appeals are delivered and the elicitation context, many questions require further consideration. The important role of transportation demonstrated in this research suggests that using more engaging types of communication might bolster this process and achieve more effective guilt-eliciting messaging. Since this study shows that imagery is especially important in driving persuasion through anticipated guilt, considering how communication techniques might be more likely to support persuasion through reinforcing PCE is also of practical import, since this variable drives consumer behavior (Antonetti & Maklan, 2014).

Another avenue for further research concerns a deeper examination of how delay impacts the effectiveness of guilt appeals. Despite evidence in the marketing communication literature that

delay is a critical variable for advertising effectiveness (Krishnan & Smith, 1998; Aravindakshan & Naik, 2011), this is the first attempt to consider delayed effects in research on the guilt appeal. Future research should consider adopting longer temporal gaps and examining whether guilt-elicitation aids advert effectiveness after longer intervals (e.g. Aravindakshan & Naik, 2011). Furthermore, the impact of delay on each of the two pathways should be examined further. It would also be interesting to consider whether either of the two pathways is more resilient when considering longer time delays between guilt-eliciting messages.

### *7.2. Implications for practice*

Marketers wishing to employ guilt-eliciting communications should consider the implications of this research for when evaluating their campaigns' effectiveness and the design of the messaging in advance of campaign execution. The findings presented herein suggest the importance of monitoring how campaigns influence a breadth of cognitive, emotional, and behavioral reactions. Moreover, the study demonstrated that to boost the effectiveness of guilt-eliciting messages, it is necessary to optimize the conditions for transportation. These strategies can be combined with guilt elicitation to reinforce the overall ability of the advert to persuade through immersion into the message.

The study also offers clear evidence of the relative effectiveness of messages using images and text over text-only appeals. In contexts where videos cannot be used, marketers should rely on images or other visuals to boost the fluency of the communication and consequently improve consumers' abilities to anticipate feelings of guilt.

The delayed effects documented herein suggest that guilt appeals are powerful devices to persuade consumers, but they need modulating carefully to avoid maladaptive consumer reactions. Marketers using guilt-based messaging should test their communications on the basis of the

expected number of repetitions to make sure the potential for negative reactions implicit in guilt appeals does not become a critical issue in their campaigns.

### *7.3. Limitations and areas for further research*

This study allowed for a three-day minimum delay between initial exposure and measures of delayed compliance. This choice is somewhat arbitrary and should be considered when comparing the results of this study with others adopting different time frames. Additional research is required to expand our understanding of how different temporal gaps influence persuasion processes.

Furthermore, our study relied on a behavioral proxy measure. An ultimate appreciation of which path is more conducive to behavioral change requires the adoption of actual behavioral change measures in future research. This is of practical relevance in the context of guilt appeal research, since negative and positive effects coexist and require evaluation. It is also important to appreciate that in our analysis we were unable to control for how actual changes in behavior during the three days interval might have impacted answers to time 2 questions. We believe that this is an area deserving exploration in future research.

This study examined messages that elicited moderate guilty feelings. Although this is not surprising in research on the guilt appeal, it should be considered as an important factor in the interpretation of the results. Specifically, it remains an open question as to whether our model would perform consistently with higher levels of guilt elicitation. One possibility is that eliciting higher levels of guilt would mean stronger delayed effects consistent with our theory. It is also possible, however, that higher guilt will come with significantly higher reactance that might undermine compliance.

Another area that deserves further research concerns the analysis of message features that are more likely to induce transportation in messages that do not contain explicit narrative elements.

For example, it would be interesting to explore what is the minimum level of self-reference needed to cause transportation into the message. Moreover, scholars could explore whether other emotions beyond guilt are able to drive transportation and what are the contextual variables that reinforce persuasion through transportation.

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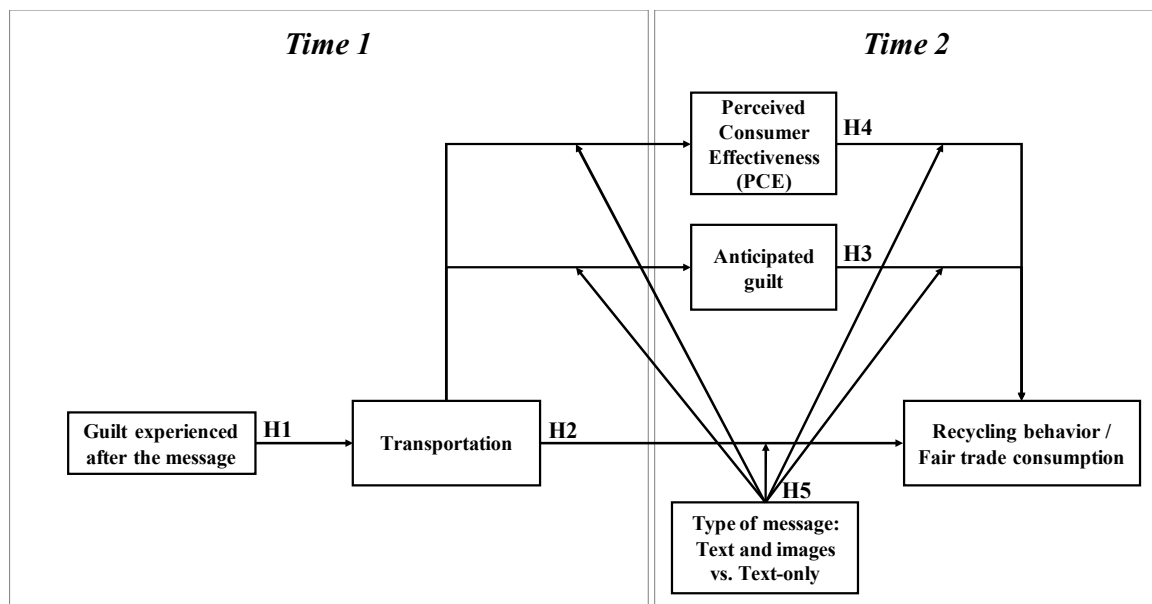
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## Appendix A: Measurement model and scales

<i>Constructs</i>	Standardized loadings		
	Study 1a	Study 1b	Study 2
<b>Experienced guilt</b> (1= not at all; 7= extremely) <b>Study 1a CR = .96, AVE = .87; Study 1b CR = .95, AVE = .84; Study 2 CR = .96, AVE = .85</b> <i>Source: adapted from Duhachek et al., 2010</i>			
To what extent do you feel remorse?	.91	.84	.87
To what extent do you feel bad about yourself?	.93	.86	.93
To what extent do you feel guilty?	.95	.85	.93
To what extent do you feel like you have done something wrong?	.94	.88	.93
<b>Transportation</b> (1= strongly disagree; 7= strongly agree) <b>Study 1a CR= .90, AVE= .59; Study 1b CR = .80, AVE = .51; Study 2 CR= .88, AVE= .56</b> <i>Source: adapted from Nielsen &amp; Escalas, 2010</i>			
While thinking about the message, I could easily picture the events in it taking place.	.71	.76	.65
I was mentally involved in the message while reading it.	.72	.75	.68
The message is relevant to my everyday life.	.84	.72	.82
My thoughts about the message changed how I think about the issue being advertised.	.75	.78	.68
The video affected me emotionally.	.76	.76	.79
While looking at the video, I had a vivid image of myself being affected by the issue advertised.	.84	.77	.86
<b>Attitudes</b> (1= strongly disagree; 7= strongly agree) <b>Study 1a CR = .85, AVE = .65; Study 1b CR = .94, AVE = .82; Study 2 CR = .91, AVE = .63</b> <i>Source: adapted from Knussen &amp; Yuke, 2008</i>			
I find the idea of recycling/fair trade pleasing	.90	.93	.78
My feelings about recycling/fair trade are positive	.92	.94	.87
My feelings towards recycling/fair trade are favourable	.93	.95	.90
<b>Perceived Consumer Effectiveness</b> (1= strongly disagree; 7= strongly agree) <b>Study 1a CR = .94, AVE = .83; Study 1b CR = .94, AVE = .69; Study 2 CR = .92, AVE = .79</b> <i>Source: adapted from Antonetti &amp; Maklan, 2014</i>			
Study 1a and 2: My personal actions in terms of recycling contribute to resolving ecological problems Study 1b: My personal actions are too insignificant to affect companies' decisions in the treatment of their employees	.92	.77	.91
Study 1a and 2: Environmental issues are affected by my individual recycling choices Study 1b: My personal actions as a consumer can force companies to treat fairly their employees	.90	.89	.86
Study 1a and 2: My personal decisions in terms of recycling have a significant influence on the natural environment Study 1b: My personal actions can influence companies' decisions to pay all their employees a fair wage	.93	.86	.89
<b>Anticipated guilt</b> (1= not at all; 7= extremely) <b>Study 1a CR = .96, AVE = .86; Study 1b CR = .97, AVE = .89; Study 2 CR = .95, AVE = .82</b> <i>Source: adapted from Steenhaut and Van Kenhove, 2006</i> The items below were asked in response to a scenario where participants imagines deliberately failing to comply with the target behavior (recycling / buying fair trade)			
I would feel remorse	.92	.94	.90

I would feel bad about myself	.91	.94	.91
I would feel guilt	.94	.96	.92
I would feel like I have done something wrong	.93	.94	.89
<b>Study 1a and 2: Recycling behavior / Study 1b: Fair trade consumption</b> (1= not at all like me; 5= just like me) <b>Study 1a CR = .91, AVE = .72; Study 1b CR = .94, AVE = .77; Study 2 CR = .92, AVE = .75</b> Please now answer the questions below indicating to what extent each statement applies to you in relation to your behavior over the last few days. <i>Source: adapted from Knussen &amp; Yule, 2008</i>			
Study 1a and 2: I recycled newspapers Study 1b: When I was shopping, I tried to buy from companies that are working to improve conditions for employees in their factories	.80	.90	.84
Study 1a and 2: I recycled cardboard Study 1b: When given a chance to switch to a brand that gives back to the community, I took it.	.85	.86	.89
Study 1a and 2: I recycled glass Study 1b: Whenever possible I bought products that are labelled fair trade.	.88	.87	.86
Study 1a and 2: I recycled plastic Study 1b: I made an effort to buy products and services from companies that pay all of their employees a living wage.	.87	.88	.88

**Figure 1: Conceptual model**



**Table 1: Descriptive statistics and correlations (Study 1a)**

	<b>Guilt</b>		<b>Control</b>							
	<i>N</i> = 206		<i>N</i> = 195							
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	X1	X2	X3	X4	X5	X6
Guilt (X1)	3.42**	1.83	2.41	1.65	-					
Transportation (X2)	5.06	1.19	4.99	1.12	.42**	-				
Attitudes towards recycling (X3)	5.95	1.15	5.81	1.05	-.27**	.22**	-			
PCE (X4)	5.32	1.37	5.37	1.11	.16**	.57**	.33**	-		
Anticipated guilt (X5)	4.51	1.81	4.49	1.75	.23**	.47**	.27**	.53**	-	
Recycling behavior (X6)	3.83	1.12	3.73	1.19	-.09	.22**	.34**	.44**	.33**	-

\*\* indicates that difference/correlation is statistically significant at  $p < .001$  based on a two-tailed test.



**Table 2: Mediation analysis (Study 1a)**

<i>Indirect effect</i>	<i>Parameter estimate</i>	<i>Confidence interval</i>
Appeal condition → Guilt after the message → Transportation	.14	CI: .09 to .20
Appeal condition → Guilt after the message → Transportation → PCE	.09	CI: .06 to .14
Appeal condition → Guilt after the message → Transportation → Anticipated guilt	.09	CI: .06 to .16
Appeal condition → Guilt after the message → Transportation → Recycling behavior	.05	CI: .03 to .08
Appeal condition → Guilt after the message → Transportation → PCE → Recycling behavior	.04	CI: .02 to .06
Appeal condition → Guilt after the message → Transportation → Anticipated guilt → Recycling behavior	.02	CI: .01 to .04

Unstandardized parameter estimates; indirect effects are calculated using PROCESS Model 4 when only one mediator is included, and PROCESS Model 6 when two or more mediators are included (Hayes, 2013).

**Table 3: Descriptive statistics and correlations (Study 1b)**

	<b>Guilt</b>		<b>Control</b>							
	<i>N</i> = 122		<i>N</i> = 122							
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	X1	X2	X3	X4	X5	X6
Guilt (X1)	3.42**	1.70	2.63	1.45	-					
Transportation (X2)	4.73	1.06	4.71	1.04	.45**	-				
Attitudes towards fair trade (X3)	5.82	1.12	5.86	1.04	.16**	.53**	-			
PCE (X4)	4.66	1.15	4.48	1.28	.09	.42**	.29**	-		
Anticipated guilt (X5)	3.78	1.68	3.49	1.75	.43**	.56**	.35**	.49**	-	
Fair trade consumption (X6)	3.20	.90	3.06	.80	.12	.52**	.34**	.61**	.52**	-

\*\* indicates that difference/correlation is statistically significant at  $p < .001$  based on a two-tailed test.

**Table 4: Mediation analysis (Study 1b)**

<i>Indirect effect</i>	<i>Parameter estimate</i>	<i>Confidence interval</i>
Appeal condition → Guilt after the message → Transportation	.08	CI: .03 to .15
Appeal condition → Guilt after the message → Transportation → PCE	.04	CI: .01 to .09
Appeal condition → Guilt after the message → Transportation → Anticipated guilt	.06	CI: .01 to .12
Appeal condition → Guilt after the message → Transportation → Fair trade consumption	.04	CI: .01 to .07
Appeal condition → Guilt after the message → Transportation → PCE → Fair trade consumption	.01	CI: .004 to .03
Appeal condition → Guilt after the message → Transportation → Anticipated guilt → Fair trade consumption	.01	CI: .003 to .02
Appeal condition → Guilt after the message → Attitudes	.03	CI: .007 to .08
Appeal condition → Guilt after the message → Attitudes → PCE	.009	CI: .002 to .03
Appeal condition → Guilt after the message → Attitudes → Anticipated guilt	.01	CI: .002 to .04
Appeal condition → Guilt after the message → Attitudes → Fair trade consumption	.008	CI: .001 to .02
Appeal condition → Guilt after the message → Attitudes → PCE → Fair trade consumption	.004	CI: .0006 to .01
Appeal condition → Guilt after the message → Attitudes → Anticipated guilt → Fair trade consumption	.004	CI: .0007 to .01

Unstandardized parameter estimates; indirect effects are calculated using PROCESS Model 4 when only one mediator is included, and PROCESS Model 6 when two or more mediators are included (Hayes, 2013).

**Table 5: Descriptive statistics and correlations (Study 2)**

	<b>Guilt</b>				<b>Control</b>									
	Text and image		Text-only		Text and image		Text-only							
	<i>N</i> = 72		<i>N</i> = 76		<i>N</i> = 79		<i>N</i> = 84							
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	X1	X2	X3	X4	X5	X6
Guilt (X1)	3.16	1.70	3.20	1.61	2.21	1.43	2.27	1.39	-					
Transportation (X2)	4.76	.92	4.88	1.04	4.54	1.02	4.46	.96	.42**	-				
Attitudes towards recycling (X3)	5.81	1.07	6.00	.87	6.04	.97	6.13	.83	-.11*	.42**	-			
PCE (X4)	5.25	1.19	5.36	1.05	5.47	1.09	5.08	1.15	.07	.51**	.46**	-		
Anticipated guilt (X5)	4.91	1.50	4.79	1.54	4.84	1.51	4.89	1.53	.13*	.45**	.41**	.52**	-	
Recycling behavior (X6)	3.79	1.29	3.69	1.37	4.00	1.17	4.01	1.10	-.19**	.15**	.44**	.49**	.35**	-

\* indicates that difference/correlation is statistically significant at  $p < .05$  based on a two-tailed test; \*\* indicates that difference/correlation is statistically significant at  $p < .001$  based on a two-tailed test.

**Table 6: Multi-group analysis (Parameter estimates and effect sizes – Study 2)**

<i>Path tested</i>	<b>Text-only</b>				<b>Text and image</b>			
	<i>Parameter estimate</i>	<i>Confidence interval</i>	$f^2$	$R^2$	<i>Parameter estimate</i>	<i>Confidence interval</i>	$f^2$	$R^2$
Guilt after the message → Transportation	.40**	CI: .25 to .50	.19	.16	.46**	CI: .31 to .57	.26	.21
Transportation → PCE	.52**	CI: .35 to .65	.37	.27	.55**	CI: .39 to .67	.44	.30
Transportation → Anticipated guilt	.39**	CI: .22 to .52	.18	.15	.52** <sup>+</sup>	CI: .38 to .63	.38	.27
Transportation → Recycling behavior	-.24**	CI: -.40 to -.06	.05	.17	-.16*	CI: -.31 to -.002	.03	.35
PCE → Recycling behavior	.43**	CI: .24 to .59	.14		.44**	CI: .25 to .62	.23	
Anticipated guilt → Recycling behavior	.02	CI: -.14 to .20	-		.31** <sup>++</sup>	CI: .13 to .48	.09	

\* indicates that the path is statistically significant at  $p < .05$ , \*\* indicates that the path is statistically significant at  $p < .01$ , <sup>+</sup> indicates that the path is significantly larger than the Text condition at  $p = .08$ ; <sup>++</sup> indicates that the path is significantly larger than the Text condition at  $p = .03$ .

**Table 7: Multi-group analysis (Mediation analysis – Study 2)**

<i>Indirect effect</i>	<b>Text-only</b>		<b>Text and image</b>	
	<i>Parameter estimate</i>	<i>Confidence interval</i>	<i>Parameter estimate</i>	<i>Confidence interval</i>
Appeal condition → Guilt after the message → Transportation	.11	CI: .04 to .19	.13	CI: .06 to .23
Appeal condition → Guilt after the message → Transportation → PCE	.06	CI: .03 to .13	.10	CI: .05 to .19
Appeal condition → Guilt after the message → Transportation → Anticipated guilt	.08	CI: .03 to .15	.11	CI: .05 to .19
Appeal condition → Guilt after the message → Transportation → Recycling behavior	.02	CI: .003 to .05	.06	CI: .02 to .11
Appeal condition → Guilt after the message → Transportation → PCE → Recycling behavior	.03	CI: .01 to .06	.05	CI: .02 to .11
Appeal condition → Guilt after the message → Transportation → Anticipated guilt → Recycling behavior	.01	CI: .003 to .03	.03	CI: .01 to .07

Unstandardized parameter estimates; indirect effects are calculated using PROCESS Model 4 when only one mediator is included, and PROCESS Model 6 when two or more mediators are included (Hayes, 2013).

# The persuasiveness of guilt appeals over time: pathways to delayed compliance

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