

## Effort investment in persuasiveness: a comparative study of environmental advertising in the United States and Korea

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The authors of this article compare American and Korean reactions to the persuasiveness of environmental advertising campaigns that are preceded by environmental pledges. Findings indicate that environmental advertising effectiveness depends on how much effort recipients put into making environmental pledges prior to viewing the advertisements. Study 1 demonstrates that when environmental pledges requesting more effort precede ad messages, Americans are more persuaded but Koreans are less persuaded. Study 2 extends the findings and rules out an alternative explanation – mere-effort effect – by showing that the results are replicated only with an issue-relevant pledge, but not with an issue-irrelevant pledge.

**Keywords:** cross-cultural; effort investment; environmental advertising campaigns; persuasion

The greater the effort, the greater the glory.  
Pierre Corneille  
Effort is not effort until it begins to hurt.  
Ortega y Ortega

### Introduction

Although consumers worldwide value eco-friendly behaviors such as recycling and energy conservation, they may perceive the challenges of daily eco-friendly activities quite differently, depending on their sociocultural backgrounds. As a result, they may respond quite differently to pro-environmental messages.

Consider Sarah, an American consumer who lives in Boston. She keeps two trash bins for sorting her trash throughout the week: one for recyclable materials and another for regular trash. Every Wednesday, she places the bins outside for city pickup. Although she occasionally throws recyclables into the regular trash, she usually tries to carefully follow guidelines for placing recyclables into the recycle bin. Rather than being guided by governmental regulations, she is primarily motivated by her good will. That is, she *autonomously* chooses to follow eco-friendly behavior.

On the other hand, Eunju lives in Seoul. She also sorts recyclables from the regular trash throughout the week. Unlike Sarah however, every Wednesday Eunju and neighbors from the same town take their recyclable trash to the public recycle center and sort it into

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bins designated for cans, bottles, plastics, and paper. She cautiously abides by the rules because her actions are salient in the public eye; the neighbors would frown on her if they saw her putting trash into a wrong bin. She sometimes feels tired and would like to throw recyclable waste into the regular trash bin, but that option is too costly because the Korean volume-based waste collection fee system mandates that all citizens must use specially designed plastic bags for regular trash. A 20-liter bag costs about \$1.00, equivalent to \$2.50 for a standard 13-gallon bag used in US households. Thus, it would be too expensive for Eunju to ‘waste’ precious purchased space if she put recyclables into a bag allocated for regular trash only. Ultimately, sociocultural pressures primarily drive her pro-environmental behavior. That is, her choice to be eco-friendly is primarily externally imposed.

Now imagine that Sarah and Eunju are flipping through magazines and see a two-page ad advocating recycling, printed front-to-back. The front page for both ads displays a recycling pledge: ‘I will recycle my plastics, paper, and metal cans,’ with a line below for the consumer to sign the promise. However, the two ads are subtly different: Sarah views an ad asking her to *transcribe* the pledge verbatim in a blank space appearing before the signature line. Eunju views an ad asking her to *read* the ad carefully before signing. The flip side of both ad versions features an ad showcasing the benefits of recycling. Which ad would be more effective? Would Sarah respond differently if she encountered the reading version rather than the transcription version? How would Eunju respond if she encountered the transcription version rather than the reading version? We argue that they would regard the messages differently. Sarah’s autonomous and Eunju’s imposed-choice sociocultural backgrounds and the effort they must make regarding the pledge would evoke different attitudes. We address these questions in the current article.

These are important questions, because message recipients may respond differently to persuasive messages depending on the amount of effort they expend in processing the message (Modig, Dahlén, and Colliander 2014). In particular, effort investment, which refers to the inconvenience or difficulty people experience when they expend time, energy, and resources in pursuing goals (Baek, Yoon, and Kim 2015; Kim and Labroo 2011; Yoon, Choi, and Song 2011), is related to goal value and motivation (Zhang et al. 2011), goal achievement and reward (Kivets, Urminsky, and Zheng 2006), quality judgment (Kruger et al. 2004), issue valence and issue capability (Mittal, Ross, and Tsiros 2002), and job involvement and task performance (Pierro, Kruglanski, and Higgins 2006). No prior study, however, to our best knowledge, has examined effort investment in cross-cultural contexts. We aim to fill this gap here.

Noting the importance of effort investment in environmental persuasion, we test effort investment and sociocultural background as they jointly affect advertising effectiveness. We propose that sociocultural differences cause people to feel more or less autonomous. As a result, eco-friendly requests requiring them to invest effort in pro-environmental behaviors may evoke different reactions. We investigate the idea in two experimental studies using two pro-environmental advertisements: for recycling (Study 1) and for energy saving (Study 2). Our research contributes to the growing literature on environmental persuasion by identifying culture as moderating how effort investment strengthens or weakens advertisements promoting sustainable behaviors.

## Theoretical background

Asking consumers to sign environmental pledges has been found effective for increasing compliance with environmental persuasion (Baek, Yoon, and Kim 2015; Wang and

Katzev 1990), so the better social marketers and policymakers understand psychological aspects of green behaviors, the more effectively they can enforce laws and regulations and implement green environmental campaigns. Unfortunately, although most consumers see themselves to be indigenous environmentalists and consistently support environmental protection, their environmental concerns do not always translate into environmentally responsible behaviors (e.g., recycling and energy conservation; Baek, Yoon, and Kim 2015; Baca-Motes et al. 2013; Kollmus and Agyeman 2002; McKay-Nesbitt and Yoon 2015; Shrum, McCarthy, and Lowrey 1995; White and Simpson 2013; Zinkhan and Carlson 1995). Considerable efforts have gone into promoting recycling programs in many countries, but people often fail to comply (Schultz, Oskamp, and Mainieri 1995; White, MacDonnell, and Dahl 2011). For instance, approximately 76% of US consumers discard most recyclable materials after using them only once (Environmental Protection Agency 2014), while only about 49% of Korean municipal wastes are recycled (United Nations Statistics Division 2011).

Particularly, building on Zhang et al. (2011), and Baek, Yoon, and Kim (2015), we argue that persuasiveness of environmental advertising campaigns varies depending on the sociocultural backgrounds of the message receivers and the effort they invest in a task related to the advocated behavior, such as making an environmental pledge, before they process the advertising messages. When consumers perceive that they are freely choosing to comply with the environmentally friendly behavior advocated in the ad, they will perceive that the effort reflects their values and personal goals. Thus, they should be more receptive to the environmental advertising when they expend more effort in making an environmental pledge before they are exposed to the ad.

Recall the introductory vignette: if Sarah, who has an autonomous sociocultural background, encountered an ad encouraging recycling, her pro-recycling attitude would increase depending on how much effort she put into making the pledge preceding the ad. On the other hand, Eunju, who lives under sociocultural norms obliging citizens to recycle collectively, might have decreased attitude toward recycling behavior if she puts significant effort into making the pledge. Feeling that compliance would restrict her autonomy in pursuing her goals, she might respond reactively and might devalue the advocated behavior to reaffirm her sense of autonomy. Because greater effort investment generates greater reactance, more effort investment could therefore backfire.

To test this idea, we experimentally controlled for the amount of effort two carefully selected populations would invest in pledging to recycle and conserve energy – the United States and Korea – where perceptions of recycling and energy conservation differ widely. Next we review prior research that led to our prediction that American and Korean consumers will receive environmental advertising differently depending on the amount of effort they invest. We then present Study 1 in which we manipulate the amount of effort that American and Korean participants invest in making the pledge. In Study 2, we replicate and extend the findings to a different context – energy conservation. Finally, we conclude with a discussion of the implications for public policy and marketing.

### ***USA–Korea differences in the perception of environmental protection practice***

Individuals from cultures that stress independence, such as North Americans and Western Europeans, are considered to be more personally agentic; those from cultures stressing interdependence such as Latin Americans and Eastern Asians, are considered to be more collectively agentic, resulting in culturally contrasting differences in cognition and human motivation (Cui et al. 2012; Kim, Han, and Yoon 2010; Markus and Kitayama

1991; Yoon 2013). Relatedly, those who are personally agentic perceive that agency emanates from the self. In turn, they are more intrinsically motivated to pursue actions they perceive as self-initiated. Those who are collectively agentic perceive agency to lie within the collective and, in turn, are more likely to pursue actions they perceive as collectively originated (Hernandez and Iyengar 2001). Following this line of thought, we question whether such East-West cultural differences might trigger people in each culture to perceive pro-environmental persuasion differently.

The US approach to environmental protection is closely tied to its individualistic cultural norms – the acknowledgement of independent human agency. Reflecting its individualistic belief system, the American way of changing public behavior about environmental protection is to convince individuals to make informed, free, autonomous, eco-friendly choices. Accordingly, public discourse about environmental protection in the United States focuses on environmental consumerism – environmental friendliness in purchasing, consuming, and disposing of goods. To this end, many public and private environmental organizations have waged campaigns to encourage individual households to be eco-friendly. For example, Keep America Beautiful sponsored a public service announcement (PSA) that featured a crying Indian; Greenpeace called for individuals to ‘Stop the Catastrophe,’ and Denver Water campaigned for individuals to ‘Use Only What You Need’ (Kronrod, Grinstein, and Wathieu 2012). As a result, public concern about environmental issues in the United States has increased over the last several decades (Chang 2012; Kollmus and Agyeman 2002; Taylor 2014). The essential driving force behind the bottom-up environmental movement in the United States is the increased public awareness of environmental issues, which in turn prompts individual consumers to voluntarily participate in pro-environmental behaviors. In sum, it is important for American consumers to *choose to* behave in environmentally friendly ways.

In contrast, the Korean approach to environmental protection appears to be top-down, rooted in collectivistic cultural norms; that is, collective responsibility to act in the interests of society. Reflecting the collectivistic belief system, the Korean government and citizens impose collective pressures to induce individual members of the society to adopt eco-friendly behaviors. For example, the volume-based fee system, introduced in 1995, is a key tenet of Korea’s recycling policy (Hong 1999; Rhee 1999). The system requires that individual households pay for the waste they generate (Kim 2002; Hong 1999; Rhee 1999), a pay-as-you-throw system that mandates economic penalties in the effort to decrease unrecyclable waste (Kim 2002). Individuals are also fined for improperly disposing of unrecyclable materials and food wastes (Lee 2012). Nongovernmental citizen watch-dog activities abound as well; many neighborhoods install security cameras to ensure that residents follow correct procedures (Lee 2012). Matters are more stringent regarding energy conservation. The South Korean government commonly enforces measures to reduce electricity usage. For example, during the summer of 2013, all public offices were required to maintain indoor temperatures of 28 °C (83 °F) or above, and all commercial buildings were required to maintain temperatures of 26 °C (79 °F) or above (Phneah 2013). The energy saving measures also strictly banned businesses from leaving their doors open to attract customers off the street. Violations drew maximum fines of three million won (US\$2,664). In sum, Korean consumers are required to be environmentally friendly.

US choice-driven recycling policies versus Korean obligation-driven recycling policies reflect each nation’s differing cultural values. In America, individual choice to recycle apparently encourages and increases recycling, but in Korea, obligation to society may be most persuasive. The individualism–collectivism framework (Triandis 1995) indicates that Western-oriented individualists, such as Americans, are motivated by their

own preferences, needs, and rights, and thus give priority to personal rather than to group goals. On the other hand, Eastern-oriented collectivists, such as Koreans, view themselves as closely linked individuals who are primarily parts of whole families, networks of coworkers, tribes, or nations, so they are mainly motivated by socially imposed norms and duties. Americans tend to value their freedom to choose, but East Asians do not necessarily prefer choice (Iyengar and Lepper 1999). For example, Americans have been shown to favor products they choose (Brehm 1956; Steele, Spencer, and Lynch 1993), but East Asians do not prefer options they select over other possibilities (Hoshino-Browne et al. 2005; Kitayama et al. 2004).

### ***The role of effort investment in autonomous versus imposed choice***

Do these cross-national differences in environmental protection perceptions – American autonomy versus Korean imposed choice – affect consumers when they must expend effort in processing advertisements for recycling and energy conservation?

A major premise of this research is that initial effort investment may intensify motivations to comply with subsequent requests (Baek, Yoon, and Kim 2015). Regulatory engagement theory (Higgins 2006) provides a theoretical foundation for the efficacy of effort investment. The theory suggests that engagement strength affects whether people will perceive that their efforts will bring desirable or undesirable outcomes. That is, stronger engagement is likely to intensify motivational and evaluative responses, which will then determine whether individuals see positive value and attractiveness in the focal goal (Zhang et al. 2011). In the present context, if people invest more effort in completing the initial eco-friendly task (i.e., writing vs. reading pledges), they will be more strongly committed to the subsequent task (i.e., processing an environmental message) because they have invested effort, which then makes pro-environmental goals seem more attractive. As a result, they will favorably evaluate the goal (Kim and Labroo 2011).

Along the same lines, Zhang et al.'s (2011) findings offer valuable insights in this regard. Although those authors did not directly examine culture, they indeed found evidence that consumers' initial effort investment in pursuing a goal may increase or decrease the value of the goal, depending on whether they perceive they are pursuing the goal by autonomous choice or by imposed obligation. In particular, when consumers perceived that they adopted the goal autonomously, they experienced their effort investment as value enhancing. Goals became truly valued only when individuals felt that they had unrestricted choice to pursue them; thus individuals interpreted their actions as reflecting their value and commitment to the goal and their effort investment intensified the initial positive value. In contrast, when consumers perceived that they were restricted in adopting the goal, they experienced psychological reactance instead and lacked goal commitment even though the goals were of positive initial value. Considering that autonomous goal condition and imposed goal condition in Zhang et al.'s (2011) findings conceptually correspond, respectively, to the US population and the Korean population in our research, we hypothesize:

H1: Americans who invest a high level of effort in making an environmental pledge preceding the ad will show *more* favorable attitudes (H1a) and behavioral intentions (H1b) regarding environmentally friendly behavior than will Americans who invest a low level of effort.

H2: Koreans who invest a high level of effort in making an environmental pledge preceding the ad will show *less* favorable attitudes (H2a) and behavioral intentions (H2b)

regarding environmentally friendly behavior than will Koreans who invest a low level of effort.

### Pretest

The main purpose of the pretest was to verify our baseline assumption – that Americans perceive that they autonomously choose their recycling and energy-saving behaviors, while Koreans perceive that external impositions demand their recycling and energy-saving behaviors.

Participating in this study were 31 undergraduate students from a northeastern US university and 37 Korean undergraduate students from a university located in Seoul, Korea. Participants completed two sets of questions for recycling and energy saving, respectively, that begin with, ‘I (or my household) recycle/save energy because...’ anchored with ‘I have to (1)/I want to (7)’; and ‘It’s the law (1)/It’s my choice (7).’ As expected, compared with Korean participants, American participants indicated that they recycle and save energy because they want to rather than have to (recycling:  $M_{US} = 4.84$  vs.  $M_{Kor} = 2.78$ ;  $t = 4.68$ ,  $p < .01$ , energy saving:  $M_{US} = 5.65$  vs.  $M_{Kor} = 4.08$ ;  $t = 4.18$ ,  $p < .01$ ). Similarly, compared with Korean participants, American participants indicated that their choice rather than law directed their recycling and energy saving (recycling:  $M_{US} = 4.94$ ,  $M_{Kor} = 3.68$ ;  $t = 3.02$ ,  $p < .01$ , energy saving:  $M_{US} = 5.71$  vs.  $M_{Kor} = 4.54$ ;  $t = 3.15$ ,  $p < .01$ ). Therefore, the pretest results were consistent with our conceptualization.

### Study 1

In Study 1, in the context of recycling, we tested our hypotheses (H1a and H2a), using a 2 (nationality: Americans versus Koreans) X 2 (effort investment: high versus low) between-subjects design.

### Method

We recruited 136 US undergraduate participants from a northeastern US university and 179 Korean participants from a university located in Seoul, Korea. Participants were randomly assigned to one of the two experimental conditions (i.e., high vs. low effort investment). The first effort investment induction task required that participants make a recycling pledge before they viewed an advertisement for recycling. After viewing the ad, they filled out a questionnaire that included measures of attitudes toward recycling.

In the high-effort investment condition, participants were instructed to *transcribe* the recycle pledge (e.g., ‘I will recycle my plastics, paper, and metal cans,’ ‘I will use recycled-content products,’ ‘I will avoid the use of disposable products whenever possible,’ and ‘I will tell people about how important it is to recycle’), and signed their name at the bottom of the page. In contrast, participants in the low-effort investment condition were instructed to *read* the recycling program pledge and sign their names below the pledge (Baek, Yoon, and Kim 2015; Zhang et al. 2011, experiment 2). A pilot test verified the manipulation of effort investment; participants indicated how much effort they invested in signing (i.e., after *transcribing* or *reading*) the pledge to support recycling (1 = *not at all*; 7 = *very much*). As expected, participants in the high effort investment condition – those who *transcribed* and signed – felt that they made more effort in pledging to support recycling than did those in the low-effort investment condition – those who *read* and signed – ( $M_{high-effort} = 4.47$ ,  $M_{low-effort} = 2.97$ ;  $t = 7.01$ ,  $p < .01$ ).

After signing the pledge, participants viewed the target ad which includes headline copy, an image of a recycling bin, and a paragraph describing recycling benefits. The ad headline reads, 'Recycle what you can – Recycling not only saves the environment, but also reduces landfill waste.'

Adopted from Blankenship and Wegener (2008), attitudes toward recycling were measured using seven-point semantic differential items anchored with 'bad/good,' 'foolish/wise,' 'negative/positive,' 'unfavorable/favorable,' 'unnecessary/necessary,' 'harmful/beneficial,' and 'undesirable/desirable' ( $\alpha = .97$ ). For the Korean participants, the English questionnaire and stimuli were translated into Korean by a bilingual translator, back-translated into English by a second bilingual translator, and adjusted by a third bilingual translator.

### Results

To test H1a and H2a, the attitude measure ( $\alpha = .94$ ) was submitted to a 2 (nationality: Americans versus Koreans)  $\times$  2 (effort investment: high versus low) factorial ANOVA. The nationality  $\times$  effort investment two-way interaction effect emerged ( $F(1, 311) = 9.66, p < .01$ ).

As shown in Figure 1, contrasts revealed that American participants showed more positive attitude toward recycling behavior ( $F(1, 134) = 2.26, p < .05$ ), when they invested high effort ( $M_{\text{high-effort}} = 5.72$ ) than low effort ( $M_{\text{low-effort}} = 5.29$ ), but the opposite pattern emerged for Korean participants; that is, Korean participants showed less positive attitude toward recycling behavior ( $F(1, 311) = 10.21, p < .01$ ), when the invested high effort ( $M_{\text{high-effort}} = 5.73$ ) than low effort ( $M_{\text{low-effort}} = 6.09$ ). In addition, a main effect occurred for Nation indicating that Korean ( $M_{\text{Kor}} = 5.87$ ) participants overall showed more positive attitude toward recycling behavior than did American participants ( $M_{\text{US}} = 5.52; F(1, 311) = 10.06, p < .01$ ).

### Discussion

Study 1 results demonstrate that Americans are more persuaded but Koreans are less persuaded by ad messages following environmental pledges that request more effort.

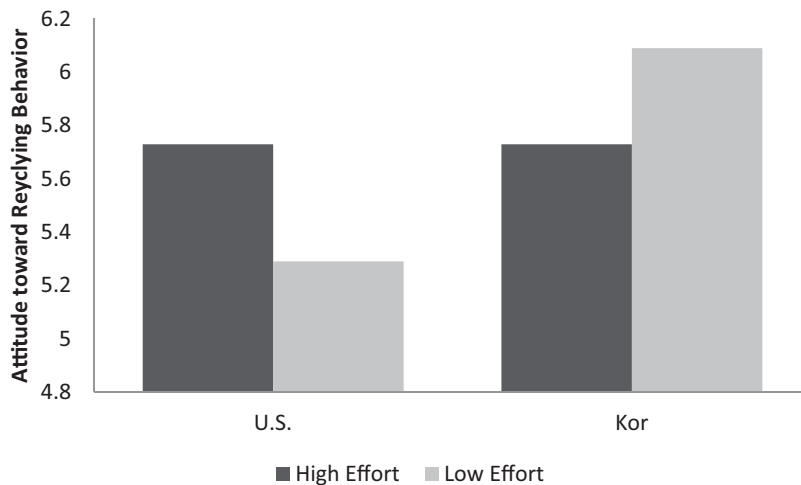


Figure 1. Interaction of culture and effort investment on attitudes toward recycling.



However, Study 1 is open to an alternative explanation: perhaps the mere effort, not necessarily the effort relevant to the central environmental issue, caused the observed differences. Study 2 is designed to rule out this alternative explanation.

## Study 2

Study 2 had two objectives. First, we aimed to conceptually replicate the findings from Study 1, using a different environmental message, energy conservation, with a different dependent variable, behavioral intention (H2a and H2b). More important, we sought to rule out a plausible alternative explanation for Study 1: the participants might have showed differences simply because they had to expend effort in making the pledge. Would the same data pattern emerge even when the pledge is irrelevant to the subsequent ad message? To test this idea, we used a 2 (nationality: Americans versus Koreans) X 2 (effort type: issue-relevant effort versus issue-irrelevant effort) between-subjects design.

## Method

Participating in this study were 43 undergraduate students from a northeastern US university and 67 Korean undergraduate students from a university located in Seoul, Korea. Participants were randomly assigned to one of the two experimental conditions (i.e., issue-relevant effort versus issue-irrelevant effort). The other procedures were identical to those of Study 1 except that we changed the pledge and stimulus ad to refer to energy saving. With an image of hands holding an energy-efficient light bulb, the ad copy reads, 'Save energy – you must reduce overall energy consumption at home, school, and work').

Rather than manipulate the amount of effort invested in the pre-ad exposure pledge, we manipulated the type of effort invested; that is, all participants were asked to transcribe and sign either an energy saving pledge (relevant) or the US Pledge of Allegiance (irrelevant). In the issue-relevant effort condition, participants transcribed a pledge similar to the recycling pledge used in Study 1; for example, 'I will turn off unnecessary lights and appliances, including my computer. I will replace incandescent light bulbs with compact light bulbs. I will run the dishwasher only when full.' In the issue-irrelevant effort condition, participants transcribed the Pledge of Allegiance: 'I pledge allegiance to the flag of the United States of America and to the Republic for which it stands, one nation, under God, indivisible, with liberty and justice for all.' The same amount of effort was invested in the two conditions ( $M_{\text{relevant}} = 4.04$  vs.  $M_{\text{irrelevant}} = 4.02$ ;  $t(108) = 0.05$ ,  $p = n.s.$ ).

In addition, this time we measured behavioral intention rather than attitude with the statement: 'I intend to conserve more energy in the next few weeks' (1 = *strongly disagree*; 7 = *strongly agree*).

As in Study 1, for the Korean version of the questionnaire and stimuli, a bilingual translator translated it from English into Korean; a second bilingual translator back-translated it into English, and a third bilingual translator adjusted it.

## Results

To test the hypotheses, the behavioral intention measure was submitted to a 2 (nationality: Americans versus Koreans) x 2 (effort investment type: relevant versus irrelevant) factorial ANOVA. The nationality x effort investment two-way interaction effect emerged ( $F(1, 106) = 10.86$ ,  $p < .01$ ).



As shown in Figure 2, contrasts revealed that American participants showed higher behavioral intention toward energy saving ( $F(1, 41) = 8.38, p < .05$ ) when they transcribed the energy saving pledge (i.e., when their effort was issue-relevant;  $M_{\text{issue-relevant}} = 5.45$ ) than when they transcribed the Pledge of Allegiance (i.e., when their effort was issue-irrelevant;  $M_{\text{issue-irrelevant}} = 4.57$ ). But Koreans showed the opposite pattern; that is, they showed lower behavioral intention toward energy saving ( $F(1, 65) = 6.22, p < .05$ ) when they invested effort into transcribing the relevant energy saving pledge ( $M_{\text{issue-relevant}} = 4.59$ ) than when they transcribed the irrelevant Pledge of Allegiance ( $M_{\text{issue-irrelevant}} = 5.42$ ). In addition, Nation or Effort Investment had no main effect (all  $p$ 's = *n.s.*).

### Discussion

The results from Study 2 extend the findings from Study 1 in several ways. First, Study 2 conceptually replicates the Study 1 findings in the context of energy saving. Second, the effect emerges on a different variable: behavioral intention. Third, Study 2 rules out an alternative explanation – whether it was merely the effort that produced the effects observed in Study 1.

### General discussion

Our objective in this research is to understand differences between American and Korean consumers in their reactions to persuasive environmental advertising requiring them to invest efforts in recycling. In Study 1, we observe that Americans have more favorable attitudes toward recycling in reaction to advertising requiring them to expend high effort. In contrast, Koreans react with less-favorable attitudes. Accordingly, Study 1 demonstrates that environmental advertising persuasion depends on two key factors: (1) the amount of effort required and (2) sociocultural background. Study 2 shows the findings to be robust across contexts; that is, the same pattern emerges for an energy conservation campaign. Furthermore, Study 2 tests and rules out an important alternative hypothesis: whether it was merely the effort, regardless of the pledge content, that produced the

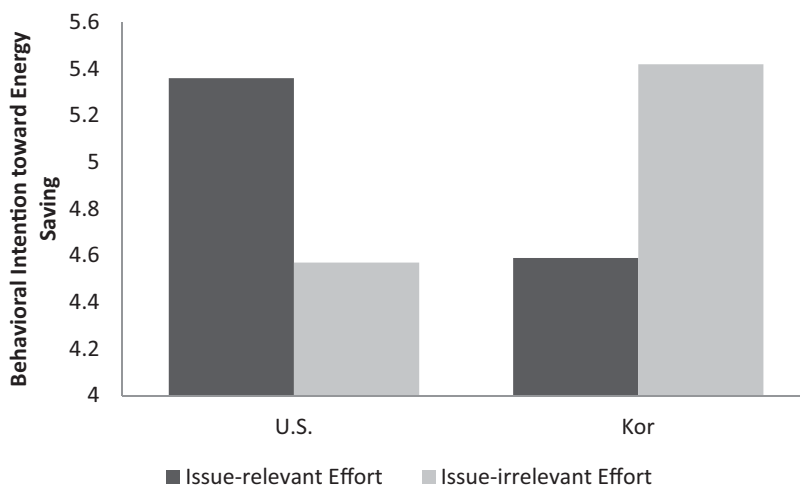


Figure 2. Interaction of culture and effort investments on behavioral intentions toward energy saving.

interaction observed in Study 1. Study 2 results indicate that an issue-relevant effort, but not an issue-irrelevant pledge, increased ad effectiveness among Americans and decreased ad effectiveness among Koreans.

Our findings have several theoretical and managerial implications. From a theoretical standpoint, the research takes the important step of analyzing the interplay of effort investment and compliance with green requests. Although previous research has identified that effort investment impacts have some boundary conditions (e.g., Baek, Yoon, and Kim 2015; Zhang et al. 2011), our study is the first to consider how effort investment effects vary depending on message recipients' national culture. The findings thus broaden our understanding of how effort investment interplays with sociocultural environments.

Some psychological variables – such as counterfactual thinking – may play a role in effort perceptions (e.g., Yoon and Vargas 2010, 2011). When individuals think counterfactually, they first consider alternative outcomes (e.g., Eunju in the introductory scenario imagines, 'I might have ended up paying more for the trash bag'). They then assess how they might have achieved the counterfactual outcome rather than the factual outcome (e.g., 'had I put recyclables into a bag allocated for regular trash'). In such causal attribution thinking processes, individuals mentally alter the perceived antecedents to undo the factual outcome and achieve the counterfactual outcome. Consumers engaging in similar counterfactuals might arrive at different emotional outcomes, depending on where they live. For example, consumers (e.g., Koreans) from a strongly regulated nation may counterfactually and guiltily attribute their actions to personal inadequacy (e.g., 'if I were honest'), whereas consumers (e.g., Americans) from a culture that emphasizes internal choice to recycle might use behavior-focused shameful counterfactuals (e.g., 'if I had recycled correctly'). Interestingly, research has found that guilt is more powerful than shame for generating positive change, so future research might examine whether Koreans and Americans actually derive different counterfactuals, which in turn may cause varying behavioral changes.

The current research has straightforward implications for global marketers. That is, our findings provide insights for green marketers dealing with global consumers (Maslowska, Smit, and van den Putte 2013). By considering the sociocultural background of target audiences, marketers may be able to craft culturally customized environmental messages using contextual cues that increase or decrease the effort message recipients must expend. In particular, when targeting Americans, it would be worthwhile to incorporate promotional tactics that encourage consumers to expend additional effort (e.g., commenting or transcribing). However, when targeting Korean audiences such effort-generating tactics should be scaled down.

In addition, this research uses stimuli that closely resemble real-world environmental ad applications in a controlled setting with minimal confounding noise. Our stimuli differ from real-world versions only in that we randomize manipulations of effort investment. As environmental campaigns commonly use pledges to reinforce issue importance, our proposed work provides green marketers key insights into when they should encourage and when they should discourage recipients to participate in processing the ad message.

### **Limitation**

In both studies, the stimulus ad did not include the pledge – the effort investment manipulation. Instead, participants completed the pledge task separately and then watched the ad. This design allowed us to isolate the effects of the pledge from the advertising message. However, real-world ad campaigns that encompass pledges may not resemble the

pledge—message sequence we employed. Future research that incorporates the pledge into an actual advertising message with heightened realism might increase ecological validity of the design.

Another caveat is that, in both Studies 1 and 2, we did not use a single experiment to consider both dependent variables — attitude and behavioral intention. Rather, we separately examined attitudes toward the recycling in Study 1 and behavioral intentions toward energy saving in Study 2. A study design that covers both variables in a single study, perhaps within a different context, will shed light on the interplay between effort investment and culture. Future research might address that question.

In addition, we did not control for possible confounding factors. Some psychological and situational variables might come into play and influence the effort—culture interaction. For example, mindfulness (e.g., Langer 1989) might reduce or eliminate the interaction effect by increasing one's attention to the emotions and thoughts occurring during the information processing. Also, in the pilot study we conducted for the manipulation check, and we only used American participants; collecting data from Korean participants would have fully completed the picture.

### Disclosure statement

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