



**Environmental Taboo Tradeoffs in the Relational Models Perspective**

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Een masterthese is een proeve van bekwaamheid voor studenten. De goedkeuring van de masterthese is het bewijs dat de student over voldoende onderzoeks- en rapportagevaardigheden beschikt om af te studeren, maar biedt geen garantie voor de kwaliteit van het onderzoek en de resultaten van het onderzoek als zodanig, en de masterthese is dan ook niet zonder meer geschikt om als academische bron te worden gebruikt om naar te verwijzen. Indien u meer wilt weten over het in deze masterthese besproken onderzoek en eventueel daarop gebaseerde publicaties, waarnaar u zou kunnen verwijzen, kunt u contact opnemen met de genoemde begeleider.

### **Abstract**

Although people agree that driving an SUV impacts the environment negatively by emitting Co<sup>2</sup>, purchase of SUVs are peaking. Trading-off the protection of the environment (a sacred value) with money (a secular value) own benefit, are Taboo Tradeoffs (TTO). Although, previous research has established that TTOs elicit negative attitudes and avoidance behaviors in humans, lesser was known of TTOs effect in the environmental domain. This study aimed to expand knowledge for TTOs relating to the environment by adapting a TTO in different relational models. 155 UK-based participants filled out a quantitative online questionnaire in one of three conditions after viewing one of three poster advertisements. The three advertisements showed a brand-new SUV, with differing focus of the taglines for the three different conditions: Market Pricing, Communal Sharing or control condition. Among other participants were asked to rate their purchase intentions, product, and advertisement attitude, as well as their willingness to pay. Statistical analyses showed that different relational models for the different advertisements had no significant effect on or relationship with the attitudinal variables, such a purchase intention. There were no differences in their ratings between the three groups. An unexpected gender effect was found for advertisement attitude ratings. This study may imply that advertisements for SUVs may are not seen as TTOs. However, the study's finding is likely to be biased due to methodical limitations, as the chosen advertisements were not evaluated for their perceptions of taboo tradeoff in a pre-test. In consequences directions for future research are identified.

*Keywords:* taboo tradeoff, relational models theory, decision, environment

### **Perceptions of Environmental Taboo Tradeoffs**

Car emissions contribute significantly to global warming and have negative consequences for the environment. Therefore, driving high-emission cars come at the cost of the environment. In contrast to rising car sales numbers, this tradeoff might be perceived as taboo: trading off a secular value (money, fun) against a sacred value (protecting the environment). This study will investigate taboo tradeoffs in the environmental domain to investigate when they are perceived as such and how different relational models influence them.

Tradeoffs are omnipresent in our daily life. We encounter them when paying at the supermarket to attain groceries, spending money to acquire new clothes, and even investing time to watch a match of one's favorite football team. Such routine tradeoffs are met daily and do not perturb rational decision-making, as long as both values are traded off against seeming interchangeable (Bettman et al., 1998). Individuals seem accepting of possessing less money in exchange for a consumer good, such as clothes. However, not all tradeoffs are that straightforward to the individual. A tradeoff between a secular value, such as money, and a value that individuals deem sacred, such as health, life, or nature, decision-making are perceived by humans outrageous or taboo (Fiske & Tetlock, 1997). Sacred values are described in the literature as entities belonging to love, health, independence and the environment (Acquaviva, 1979; Belk et al., 1989). Taboo tradeoffs violate the integrity of deeply held beliefs about relationships between values and require no explanation for why they are taboo (Tetlock et al., 2000). This understanding, that trading a sacred value against a secular value is a taboo, is engrained in the individual's culture (Raz, 1986). Raz (1986) states that demanding an explanation of why these tradeoffs are taboo would show that the asking individuals do not understand the culture. Offering money as a company to a city to being able to pollute a nearby river or lake, therefore damaging the environment, would be such a taboo tradeoff.

Although one could try to derive the monetary value of the damage done to the environment, no financial compensation could reach the environments true (sacred) value (Tetlock, 2017). Individuals presented with such decisions or need to engage with a taboo tradeoff react with reluctance, aversion, and other adverse responses (Baron & Ritov, 2009; Fiske & Tetlock, 1997; Hanselmann & Tanner, 2008; Tetlock et al. 2000). In other words, the perception of a taboo tradeoff influences decision-making, so individuals that the tradeoff is likely avoided, and the status quo maintained.

One domain in which taboo tradeoffs play a more important role is the influence on the environment by human behavior and decisions. For example, coal-fired power stations may offer cheaper electricity and, therefore, financial alleviation for individuals (secular value). However, they come with the price of higher CO<sup>2</sup> emissions, worsening man-made climate change, a threat to the environment (sacred value) (Clayton et al., 2016; Patz et al., 2014). Similarly, taboo tradeoffs in this domain are apparent on the individual level, such as deciding which car to drive. Here, lifestyle choices such as driving a fast sports car or a sport utility vehicle (SUV), the secular values, are also product choices that lead to higher CO<sup>2</sup> emissions (sacred values). Naturally, individuals who perceive such decisions as taboo tradeoffs tend to protect the environment and not engage in behavior that harms nature (Stikvoort et al., 2016). However, the tradeoff must be taboo to elicit typical taboo tradeoff reactions. Therefore, the question arises, if taboo tradeoffs are perceived as less taboo in different contexts?

Research shows that adjusting the tradeoff to a different relational model creates less tension in the individual, and the tradeoff is perceived as less taboo (Tetlock & Oppenheimer, 2008). Pharmaceutical companies risk severe reputational damage when caught trying to sell life-saving drugs (sacred value) at a maximum revenue (secular value). Therefore, pharmaceutical companies mask their naturally profit-interested model in public-appropriate rhetoric. In other words, these companies try to formulate a taboo tradeoff (maximum profit

vs. life-saving drugs) in such a way that a taboo tradeoff is less apparent (McGraw et al., 2012). Research shows that this “reframing” is especially successful in eliciting different reactions in individuals when using different relational models (McGraw et al., 2012). Relational models’ theory proposes that each interaction falls into one of four relationship categories: (1) Market Pricing, (2) Communal Sharing, (3) Authority Ranking, and (4) Equality Matching (Fiske, 1991; Haslam & Fiske, 1999). Market pricing uses a strict ratio or metric to exchange goods. Mostly money is used as a strict ratio to give a metric to a value, such as clothing. Market pricing is apparent in most taboo tradeoffs, as a sacred value is based on a strict metric which money is (McGraw & Tetlock, 2005). Reframing the taboo tradeoff in terms of a communal sharing relationship model changes the reactions in individuals to this tradeoff. Communal Sharing (CS) refers to a relationship where goods are exchanged without accounting of how much each person in the relationship benefits. Pharmaceutical companies that cloak their business model in a CS relationship model that through their work, they share live-saving drugs with the community are perceived more positively (McGraw et al., 2012).

Different relationship models change the individual perception of taboo tradeoffs. It may be a way of understanding decision-making in the environmental domain. Specifically, understanding when taboo tradeoffs are seen and how it affects an individual’s decision-making seems fruitful information, as human-made climate change is threatening individual and social well-being (Clayton et al., 2016). Although previous research investigated the effect of different taboo tradeoffs on certain domains, such as retailing, romantic relationships, and pharmaceutical companies, lesser is known of the effect in the environmental domain (Bartles et al., 2015; McGraw et al., 2012; Tetlock & Oppenheimer, 2008). This lack of research is surprising, as TTOs are undoubtedly entangled with current environmental issues (Stikvoort, 2016; Tetlock & Oppenheimer, 2008).

Therefore, we investigate how taboo tradeoffs influence individuals when making decisions in an environmental context. Specifically, we test how individuals react to taboo tradeoffs in an online experiment in a different relational model frame, similar to previous research in this field (McGraw et al., 2012).

### **Sacred Environmental Values**

Many environmental values are believed to be sacred by individuals (Wilson, 1996). Durkheim describes an asset as sacred when it surpasses life's ordinary and mundane characteristics (1925). In other words, they transcend the simple addition of its parts. For example, a beautiful natural scenery exceeds its value for the individual than just the cumulation of trees, mountains, and valleys. Similarly, sacred environmental values cannot be measured by the quantity or quality of the forests, the climate, and the atmosphere. Its value for individuals goes beyond the physical aspects. Indeed, research shows that humans feel an obligation to shield the environment from general destruction, and especially from human harm (Crimston et al., 2016). Trading off nature or environment against convenience, hedonism, or monetary goods seems taboo for individuals (Fiske & Tetlock, 1997).

Similarly, it is shown in research that individuals intend to conserve the environment for its own sake (Dunlap & Van Liere, 1978; Stern & Dietz, 1994; Stern, Dietz, & Guagnano, 1995). The research found that reminding of the harm that one would do to the environment creates conflict in individuals and leads to less harmful behavior to the environment (Bastian et al., 2019). Lastly, individuals are also motivated by guilt and other moral emotions to preserve the environment, which goes beyond the scope of assessing its value as purely functional, such as a resource (Rees, Klug, & Bamberg, 2015). The literature generally shows a consensus that the environment is seen as a sacred value that needs protection (Baron & Spranca, 1997; Fiske & Tetlock, 1997). Specifically, when the environment is valued against a secular value that benefits the individual, they tend always to decide to forego their benefit

in favor of preserving nature (Stikvoort et al., 2016). In a study conducted by Stikvoort et al. (2016), participants were more likely to avoid spending on themselves (e.g., clothes) when the money could be spent on donations towards the environment. Here, the money (secular value) was perceived as being traded off against the preservation of nature (sacred value). However, Stikvoort and colleagues did not test under which relational models this tradeoff would be prominently perceived as taboo. In other words, the perception of a taboo tradeoff between clothes and environmental protection may be less prominent, depending on the relational model frame of the tradeoff.

### **Reactions to Taboo Tradeoffs**

As expected for a sacred value, individuals react negatively when harm to the environment is traded with a more secular value, such as money. Such taboo tradeoffs, in which a sacred value is traded off with a secular value, lead to adverse reactions for a few reasons: first, individuals fear being caught undervaluing the sacred value (McGraw et al., 2016; Tetlock, 2003). Here, the taboo tradeoff forces individuals to evaluate the sacred, such as love, in terms that they cannot, such as money. As this task is nearly impossible, individuals fear that they might undervalue something sacred. For example, McGraw and Tetlock (2005) showed that participants had difficulties evaluating the price they would sell a pen for, which they were gifted by a professor. Next, individuals perceive the taboo tradeoff as a violation of relational boundaries. In other words, putting a price on love is not expected in most relationships or contexts. A taboo tradeoff is thought of as “unthinkable,” cannot be made and therefore not appropriate for most situations (McGraw & Tetlock, 2005; Oppenheimer & Tetlock, 2008). Asking fathers to set a price range for their daughter’s hand in marriage is not perceived as appropriate by most individuals (Tetlock, 2003).

Naturally, when confronted with such a taboo tradeoff, most individuals react with reluctance to engage with the tradeoff or try to dismiss and avoid it altogether (Ritoy &



Baron, 2000; Fiske & Tetlock, 1997; Hanselmann & Tanner, 2008; Tetlock et al. 2000).

Specifically, individuals refuse to answer, give nonsensical answers, depending on their moral sense (Dhar, 1997; Halstead et al., 1992; Iliev et al., 2009). Furthermore, individuals respond with great distress, feel their identity threatened, and are emotionally drained for some taboo tradeoffs (Kahn, 2005; McGraw & Tetlock, 2005; Tetlock et al., 2000). Similarly, Tetlock (2000) found that when a possible taboo tradeoff is suddenly blocked, so that an individual does not have to engage anymore with the taboo tradeoff, negative emotions are reduced.

These typical reactions to taboo tradeoffs are also found for the environmental context, although it is researched to a lesser extent. Baron and Leshner (2000) showed that decision-making is affected when presented with an environmental taboo tradeoff. They showed that individuals were less likely to clear-cut trees when traded against the financial gain. Participants of this study deemed no financial profit appropriate for cutting off trees. Similar to other taboo tradeoffs, individuals also respond in the environmental context with rebellion and zero replies to these tradeoffs (Halstead et al., 1992).

In general, taboo tradeoffs are considered as characteristically morally offensive and morally wrong (Tetlock et al., 2000). Concerning responses to TTOs, it is found that individuals engage in moral outrage and especially moral cleansing to repair moral self-worth after a transgression (McGraw et al., 2016). Regarding the latter, individuals aim to restore their morality put in question by the TTO by either reversing the misdeed or behaving morally positive in a different context (West & Zhong, 2015). In the TTO context, preliminary evidence suggests that some TTOs elicit moral cleansing behavior in individuals. Specifically, a study by Tetlock showed that individuals significantly evaluate cleaning products after engaging with a TTO, in line with moral cleansing behavior (2000). Similarly, Tetlock (2000) found that merely thinking about TTOs will lead to a higher likelihood of behaving morally right afterward. In general, moral cleansing behaviors seem to be an essential aspect of TTOs.

## **Relational Models Theory**

To examine under which conditions individuals change their attitudinal and behavioral reactions mentioned above to TTOs, it seems reasonable to consider Fiske's Relational Model Theory (1991) as an influencing factor. Relational Models Theory describes four schemas representing how relationships are organized and understood: communal sharing, authority ranking, equality matching, and market pricing. Each of these principal models entails a different set of organizing, evaluating, and contesting all aspects of interactions and relationships (Fiske & Haslam, 2005). This study will focus on communal sharing (CS) and market pricing (MP), both endpoints of Fiske's dimension. Communal sharing refers to a mode of equivalence and collectivity, in which all members of a community share responsibilities and rights regardless of individual differences. Responsibilities and relationships based on communal sharing include caring for children as partners, receiving national protection as citizens, or visiting public parks as a community member. There are no cost-benefit analyses or accounting for how much benefits the individuals received in this model. In contrast, market pricing (MP) depends on a cost-benefit analysis using a strict ratio or metric to exchange goods. Money is mostly used as such a metric, which underlies this form of relationship. MP is fundamental to capitalism and most business. A price value is described to goods in daily life, making it possible to attain them. For example, a car is assigned a distinct monetary value based on a cost-benefit analysis for each interested stakeholder. An individual who pays the car's assigned price engages in a relationship with a market pricing model. These MP procedures

Market pricing procedures are most common in tradeoffs between secular values (Fiske, 1991). In contrast, sacred values in tradeoffs in a market pricing context are frequently seen as taboo and elicit adverse reactions (Tetlock, 2005). Therefore, sacred values are especially sensitive to a tradeoff in a market pricing context, as using a ratio or metric, such as

money, to determine the value of the sacred is unthinkable. In other words, weighing a sacred value, such as preserving the environment against a monetary value, is outrageous and taboo for individuals. For example, generating 1000 € by cutting down 100 trees is seen as a taboo tradeoff in a market pricing context. Further, an individual perceives a product in a market pricing model as harming a sacred value, avoids a possible purchase, and even reacts negatively to the product or seller (Fiske & Tetlock, 1997; Hanselmann & Tanner, 2008; Tetlock et al., 2000).

As taboo tradeoffs seem to be associated with the relational model it appears in, it may be the case that taboo tradeoffs can be less distressing when framed in a different relational model, such as communal sharing. A different relational model may justify engaging in the tradeoff (Aaker, Fournier, and Brasel 2004; McGraw and Tetlock, 2005). Indeed, previous research showed that perceptions of taboo tradeoffs could be altered through differing relational models. McGraw and Tetlock (2015) established that perceptions could be changed through cues associated with norms of distinct relational models. This theory is in line with previous research, showing that price increases for the pharmaceutical drug received less distress when in a communal sharing frame (McGraw et al., 2011).

Similarly, McGraw and Tetlock (2005) found that marketing strategies are seen more positively in a communal sharing frame. Participants reacted significantly more negatively to former U.S. president Clinton giving out free access to the famous "Lincoln" bedroom to campaign donors when this tradeoff was framed in a CS model than in an MP model. Participants that were shown the market pricing frame read how the Democratic National Committee received around 5.4 million dollars from individuals that got free access to the Clinton bedroom. However, when the tradeoff was framed by the notion that it is normal for friends to "share" their privileged position (being able to give out free access to the bedroom) with other friends (their campaign donors), participants were less likely to react with outrage.

Overall, these studies drew on familiar and communal cues when presenting a product or a marketing strategy for CS to reframe the tradeoff from a standard market pricing. In sum, it is essential to attain the model in which a tradeoff is socially acceptable (Kahn, 2005).

### **The present research**

This study aims to expand the findings above to the domain of environmental taboo tradeoffs. To my knowledge, there have been no attempts to examine how environmental tradeoffs perceptions differ when relational models are shifted. Therefore, I will investigate the following hypotheses:

H1: Marketing strategies for environmental TTOs in a communal sharing frame will be seen as more favorable by individuals than in a marketing pricing context

H2: Products of an environmental TTOs will result in higher levels of purchase intention with a CS model than MP model

H3: Individuals are willing to pay more for a product in a CS frame than an MP frame

H4: Less time will be spent on TTOs in an MP frame than a CS frame

### **Overview**

This study examines whether different relational models affect perceptions of advertisements, which may be seen as environmental taboo tradeoffs. To test this association, we used two different advertisement posters for SUV. This examination was done as SUVs are symbolic of environmental harm and therefore associated with a possible taboo tradeoff. Furthermore, we focused on measuring purchase intention, product attitude, and advertisement attitude to assess how individuals respond to advertisements in different relational models. Similarly, we measured the speed of rating these measurements as well as willingness to pay. We expected that these five measurements would be rated more positive and higher when faced with an advertisement in a CS frame. In addition, we focused on

environmental self-identity, as a higher environmental attachment possibly means stronger reactions to the taboo tradeoff of buying an environmentally harmful SUV.

## **Methods**

### **Participants and Design**

A quantitative online approach was adopted using a survey with three different conditions: Communal Sharing, Market Pricing, and a control condition. 155 UK-based users were recruited via Prolific, an online recruitment tool, to participate in this study for a monetary reimbursement of 1 £. The subjects were selected based on their age, meaning that only users with age above 18 could participate.

### **Materials**

Three advertisement posters were created to display different relational models in the context of sacred environmental values (see appendix A). SUVs are viewed as harming the environment and symbolic of environmental ignorance (Greenpeace). To reduce the possibility of branding associations in participants, a generic name was created for the car company, namely Struck, and the car, TC90. The advertisement poster was designed in the structure after commonly known SUV advertisement posters to increase ecological validity. All advertisements were written in English. Each advertisement poster included an image showing the side of a generic dark-green SUV without a brand name. The poster consisted of a headline, a description of the SUV and a tagline, in that order. For each condition, the content of these text components differed: in the communal sharing (CS) condition, the advertisement emphasised that SUVs by Struck are shared with the community and family, such as to increase traffic safety and lend the car to move furniture. The headline read, "Our SUVs are shared". In the market pricing (MP) condition, the advertisement poster headline read, "Our SUVs are fair". The similarity in the headline between both intervention conditions

was done to reduce noise in our data. The description of the SUV emphasised that customers of this SUV pay a fee for each CO<sup>2</sup> they emit with the car. Both conditions are designed according to the interventions used by McGraw and colleagues (2015). To validate the advertisements posters perceived relational model (CS and MP), a pretest was conducted with 50 participants. Here, we found that poster CS 1 (M = 4.07, SD = 1.08; see Appendix B for all options) was perceived as being categorized a communal sharing relational model the most, and MP 6 (M = 4.85, SD = 0.61) with a market pricing relational model. Lastly, a typical advertisement poster was created for a control condition. Here, the headline read, "Our new SUV line". The description was a generic description of an SUV, emphasizing its comfort. In contrast to the CS and MP condition, there was no prominent advantage communicated in using an SUV besides its comfortable features.

## **Measurements**

### ***Moral Cleansing***

To measure possible moral cleansing behaviour, we used a desirability scale based on a study by Gollwitzer and Melzer (2012). As moral cleansing behaviour manifests itself that individuals prefer hygiene products measurement preferring hygiene products to non-hygiene products. Five items in this measurement were hygiene associated products such as a shower bar or soap. Furthermore, five additional items were household goods, such as batteries. These items were measured on their desirability on a 7-point-Likert-scale ranging from "Very undesirable" (1) to "Very desirable" (7).

### ***Environmental Self-Identity***

Environmental self-identity was measured with three items (Acting environmentally friendly is an important part of who I am; I am the type of person who acts environmentally friendly; I see myself as an environmentally friendly person) similarly used in a study by

Fielding and colleagues (2008). Here, the concept of "environmental activism" was changed to "environmentally friendly" to fit the aim of this study better. Indications could be made between a 7-point-Likert-scale ranging from "Strongly disagree" (1) to "Strongly agree" (7) was used to assess agreement with the statements. This self-identity scale was found to be reliable and valid in multiple studies (Van der Werff et al., 2013, 2014). Reliability for this scale of environmental self-identity was satisfactory ( $\alpha = 0.94$ ).

### ***Product Attitude***

We measured product attitude by asking for agreement on statements on an 8-item-scale with seven possible indications ranging from "Strongly disagree" (1) to "Strongly agree" (7). Items such as "I think that people would buy this SUV", "I would certainly consider an SUV from this brand when making a choice", and "I like listening to information on or reading about SUVs" were presented to assess product attitude. All eight items were based on a previous study and adapted to fit the context of SUVs (Marchand, 2010). Three items were reverse scored. Reliability for this scale of product attitude was satisfactory ( $\alpha = 0.81$ ).

### ***Advertisement Attitude***

A single item measurement consisting of seven possible indications was used to assess advertisement attitude. Here it was asked to think about the ad for SUVs and which of the following statements best describe the participants' feelings about the ad. This item yielded high reliability and validity in previous research (Bergkvist & Rossiter, 2009). Indications could be made from "disliked it extremely" to "liked it extremely".

### ***Purchase Intention***

A 5-item measurement with a 7-point-Likert-scale ranging from "Strongly disagree" (1) to "Strongly agree" (7) assessed purchase intention. The items were based on a similar measurement used by Lu and colleagues (2014). Modifications to the items were carried out

to adjust for the SUV context. Items such as "I would consider buying an SUV", "I have no intention to buy this product" or "It is possible that I would buy an SUV" were presented. One item was reverse scored. Reliability for this scale of purchase intention was satisfactory ( $\alpha = 0.93$ ).

### ***Willingness to Pay***

To assess participants willingness to pay for the SUV, we presented one question, asking how much participants would be willing to pay for the advertised SUV. Here, they could indicate a value between 19999 and 99999 British pounds. This price range was based on the current market prices of SUVs in the United Kingdom.

### ***Schwartz Values***

In an article by Biber and colleagues (2008), it was argued that relational models are associated with how individuals prioritise values of the Schwartz values scale (1992). Different ratings on value lead to different construal of and motivation to engage in certain relational models. Therefore, the survey contained a 21 items scale, whereby two items referred to one of two values (one item was linked to three items). The following values were assessed: self-direction, stimulation, hedonism, power, achievement, security, conformity and tradition. The 6-point-Likert scale asked to indicate how much the following statement about a person is similar to oneself. For example, the value of safety was assessed with the items "It is important to him that the government ensures their safety against all threats. He wants the state to be strong, so it can defend its citizens." and "It is important to them to live in secure surroundings. They avoid anything that might endanger their safety.". Ratings were scored on a 6-point Likert scale between "Not at all like me" (1) and "Very much like me" (6).

### **Procedure**



Through Prolific, participants received a link to the Qualtrics survey. The first step in this survey was to clarify the outline of the research and data collection processes to the participant. Here, a screen with information showed the title, aim and authors of the study and that participants were free to pause or abort the survey at any time. Furthermore, we informed participants of other study aspects, such as that data is collected anonymously. Participants gave consent by indicating that they do consent to participate. Only by providing consent could participants progress in the study. Next, participants filled in demographic questions, such as nationality, gender and age. Participants were then asked to report their income and whether a car was owned, rented or shared or not in possession to examine possible confounding effects. For assessing environmental values, participants rated a three-item scale. After participants rated statements of the Human Values Scale, participants were shown a short vignette. Here, participants saw an explanation that a car advertisement with additional questions would follow. Next, one of three car advertisement posters as our intervention material was shown to the participant. Through a timing feature in Qualtrics, participants could not progress in the survey for 15 seconds. The next question asked participants to rate how they felt about the advertisement. In the following, all participants filled in the following scales: product attitude, purchase intention and willingness to pay. Furthermore, participants rated cleaning and household goods on their desirability. To control for possible confounding variables, participants were asked to rate the advertisement on authenticity and the company's possible motives of passion or profit. After participants indicated their thoughts about the possible aim of the study, they were given contact information for a possible question and thanked.

## **Statistical Analysis**

### ***Measurement Analysis***

Before items for our dependent measurements were averaged, reliability was calculated by the use of Cronbach's alpha. Furthermore, data points belonging to the desirability of hygiene products in the moral cleansing measurement were averaged into a new variable.

### *Assumptions*

As it is common, we analysed the data for violations of assumptions. No violations of assumptions were found.

### *Outlier*

The data was analysed for outliers using Boxplots between residuals and predicted values, as well as frequency testing. Three data points were removed for the variable of rating speed on purchase intention, as their value exceeded three standard deviations from the sample mean ( $x_i > 56.72$ ).

### *Statistical Tests*

As most hypothesis testing included a categorical variable as independent variable, such as a condition containing three levels, and a continuous variable as dependent variable, such as purchase intention or product attitude, we carried out a One-Way-ANOVA.

We used an independent sample t-test with conditions CS and MP as independent variable and product attitude as dependent variable for one test.

A moderation analysis was carried out using Process by Andrew F. Hayes (Version 3.5) in SPSS. This approach is commonly used for such analyses.

Correlation analyses were carried using Pearson's correlations.

## Results

### Purchase Intention

To examine whether a different relational model frame effects purchase intention, an independent sample t-test was carried out with conditions MP and CS as independent variable and purchase intention as dependent variable. Results showed that conditions of CS and MP did not differ significantly on purchase intention scores,  $t(101) = 0.21, p = 0.834$  (see table 1 for the means of variables of interest).

### Product Attitude

To analyse the effect of a relational model frame on attitudes towards an SUV, we conducted a One-Way-ANOVA with conditions as independent variable and product attitude as dependent variable. There were no significant effects found between the groups,  $F(2, 54) = 2.42, p = 0.093, \eta^2 = 0.03$ . However, an independent samples-t-test exploration yielded a significant difference between the control and the CS condition as independent variable on product attitude as dependent variable,  $t(102) = -2.09, p = 0.039, Cohen's D = -0.41$ . Participants in the CS condition had significantly higher scores ( $M = 4.25, SD = 0.88$ ) on product attitude than participants in the control condition ( $M = 3.87, SD = 0.95$ ).

### Advertisement Attitude

To establish whether framing the advertisement in different relational models affects advertisement attitude, we carried out a One-Way-ANOVA with conditions as independent variable and advertisement attitude as dependent variable. Results showed no significant effect,  $F(2, 152) = 0.34, p = 0.715, \eta^2 = 0.004$ . Participants did not differ across conditions on ratings of advertisement attitude.

### Rating Speed

In order to identify whether decision making speed increases when rating scales for different relational models, a One-Way-ANOVA was carried out for time assessments of the dependent variables purchase intention and advertisement attitude. Results for submission

speed for purchase intention as dependent variable and condition as independent variables showed no significant difference between the conditions,  $F(2, 149) = 0.94, p = 0.394, \eta^2 = 0.01$ . Similarly, a One-Way-ANOVA with condition as independent variable and speed for advertisement attitude did not yield significant results,  $F(2, 151) = 2.00, p = 0.139$ . The speed of rating advertisement attitude and purchase intention measurement did not differ among the conditions.

### **Willingness to Pay**

To test the effect of the relational model on willingness to pay, a One-Way-ANOVA was used. The test revealed no significant results,  $F(2, 147) = 1.27, p = 0.283, \eta^2 = 0.001$ . Although the market pricing condition had a lower means ( $M = 28,648.90$   $SD = 11,690.64$ ) than the control ( $M = 29,123.46$   $SD = 10,521.69$ ) and the communal sharing condition ( $M = 32,365.21$   $SD = 15,441.81$ ), the differences were not significant. Participants did not differ among conditions, on how much they would spend for the advertised SUV.

**Table 1.***Descriptive Statistics for Variables of Interest*

Variable	Condition			
	Control	CS	MP	Complete
Advertisement Attitude	4.15 (SD = 1.00)	4.33 (1.26)	4.18 (1.23)	4.22 (1.16)
Purchase Intention	3.92 (1.49)	3.87 (1.69)	4.09 (1.24)	3.97 (1.47)
Product Attitude	3.87 (0.95)	4.25 (0.88)	4.17 (0.93)	4.10 (0.93)
Submission Speed	21.94 (10.30)	24.01 (14.34)	36.74 (113.42)	27.74 (65.75)
Willingness to Pay	31103.81 £ (14364.76)	32365.21 £ (15441.81)	31205.86 £ (17130.66)	31562.87 £ (15575.01)
Environmental Self-Identity	5.00 (1.11)	5.13 (1.05)	5.04 (1.05)	5.06 (1.07)

**Environmental Self-Identity Moderation**

To assess whether higher environmental self-identity scores moderation the effect of conditions on advertisement attitude and willingness to buy, a moderation analysis was conducted. Results showed no significant effect of moderation for either test. Environmental self-identity scores did not moderate the effect of relational model framing on product attitude scores. Neither the model ( $F(5, 49) = 1.78, p = 0.119$ ) nor the interactions were significant,  $F(2, 149) = 0.73, p = 0.482$ . Similarly, no significant moderation effect of environmental self-identity was found for neither the model ( $F(5, 149) = 0.21, p = 0.958$ ) nor the moderation ( $F(2, 149) = 0.04, p = 0.960$ ) with purchase intention as dependent variable and conditions as

independent variable. Next, a moderation analysis yielded no significant result for environmental self-identity as moderator, conditions as independent variable and willingness to pay as dependent variable. The results showed no significance for the model or the moderation interaction,  $F(5, 144) = 0.84, p = 0.525$  and  $F(2, 142) = 0.55, p = 0.577$  respectively.

Although the model was significant for a moderation effect of environmental self-identity on the dependent variable of speed of advertisement attitude and the independent variable of conditions  $F(5, 148) = 1.78, p = 0.031$ , the moderation was not,  $F(2, 148) = 0.14, p = 0.869$ . Similar results were found for the moderation effect of environmental self-identity on advertisement attitude as dependent variable, with the model being significant,  $F(5, 149) = 1.78, p = 0.119$ , although the moderation was not,  $F(2, 149) = 1.52, p = 0.222$ .

### **Moral Cleansing**

To examine whether a tendency to morally cleanse was present in participants, an additional One-Way-ANOVA was carried out. The analysis of variance with desirability of hygiene products as dependent variable and conditions as the independent variable yielded no significant effect,  $F(2, 152) = 1.24, p = 0.293, \eta^2 = 0.02$ . In contrast to our expectations, a CS or MP frame did not heighten or lower the desirability of hygiene goods.

### **Further Explorative Analysis**

#### ***Environmental Self-Identity***

Moderation analysis showed no significant effects for a moderation effect of environmental self-identity. However, it may still be that environmental self-identity is significantly associated with general advertisement attitude. A Pearson correlation analysis showed that environmental self-identity ( $N = 158$ ) was positively correlated with scores on advertisement attitude ( $N = 155$ ),  $r = 0.174, p = 0.004$ . Participants that indicated higher environmental self-identity rated the advertisement more positively.

#### ***Authenticity Correlations***

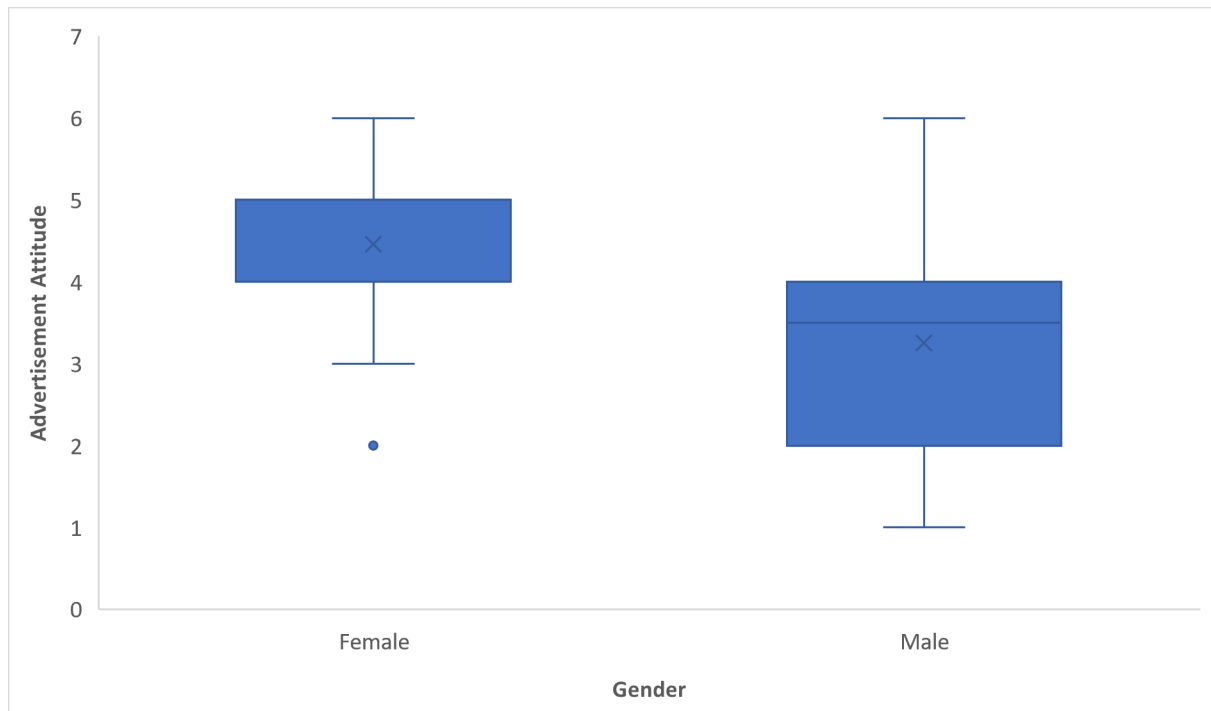
To attain knowledge of whether authenticity ratings are associated with our measures of interest, namely purchase intention, product attitude and willingness to pay, we conducted several Pearson correlations analyses. Here, we found a significant positive correlation for product attitude ( $r = 0.45, p < 0.001$ ), purchase intention ( $r = 0.17, p = 0.040$ ), advertisement attitude ( $r = 0.55, p < 0.001$ ) and willingness to pay ( $r = 0.29, p < 0.001$ ). Participants that scored higher on the authenticity measurement had higher levels on the measurements of product and advertisement attitude, as well as greater intentions to purchase an SUV.

### **Gender**

We found significant differences between men and women and several variables. An independent sample t-test was carried out with male and female gender as independent variable and advertisement attitude as dependent variable. Results showed that woman ( $M = 4.42, SD = 1.04$ ) had significantly higher scores of advertisement attitude than men ( $M = 3.77, SD = 1.29$ ),  $t(152) = 323, p < 0.001, Cohen's D = 0.58$ . To investigate further gender differences across conditions we performed several independent t-tests: there were no significant differences on advertisement attitude between women ( $M = 4.41, SD = 1.26$ ) and men ( $M = 4.13, SD = 1.36$ ),  $t(50) = 0.70, p = 0.244, Cohen's D = 0.60$ . However, there were significant differences between women ( $M = 4.38, SD = 0.92$ ) and men ( $M = 3.82, SD = 0.95$ ) in the control condition,  $t(49) = 2.02, p = 0.024, Cohen's D = 0.60$ . This significant difference was even more prominent in the MP condition,  $t(49) = 3.26, p = 0.001, Cohen's D = 1.08$ , with women ( $M = 4.46, SD = 0.97$ ) having significant more favourable attitudes towards the advertisement than men ( $M = 3.25, SD = 1.55$ ). Significant differences in the MP condition are plotted in Figure 1.

### **Figure 1.**

*Gender Differences in the MP Condition on Advertisement Attitude.*



Furthermore, we investigated possible gender differences in the authenticity measurements. We carried out an independent sample t-test with gender as independent and the authenticity measures as dependent variable. Results showed that women ( $M = 3.64$ ,  $SD = 1.20$ ) found the SUV brand to be significantly more authentic than men ( $M = 3.25$ ,  $SD = 1.16$ ),  $t(152) = 1.82$ ,  $p = 0.035$ , *Cohen's D* = 0.32. Similarly, men ( $M = 3.09$ ,  $SD = 1.78$ ), rated the brand to be significantly more driven by profit than by passion than women ( $M = 3.68$ ,  $SD = 1.89$ ),  $t(152) = 1.79$ ,  $p = 0.038$ , *Cohen's D* = 0.32.

### Discussion

Across three conditions, we investigated the link between taboo tradeoffs and relational models in the environmental domain. To broaden our understanding of the relationship between taboo tradeoffs (TTO) and relationship model theory (RM), we focused on the environmental domain, which has not yet been addressed in the literature. Specifically, we tested differences between groups of participants in a communal sharing, market pricing, and a control condition. For each condition, an SUV advertisement was shown in a different construal. Four hypotheses were tested: first and second, attitudes towards the advertisement and the product (H1) and purchase intention (H2) are more favorable in a CS construal than



an MP construal. Third, the Willingness to pay is higher in the CS than in the MP condition. Lastly, in our survey, the speed of decision making the speed of scoring the attitudes towards the advertisement and product is slower in the CS condition than in the MP condition.

The results did not support our hypotheses. No significant results were found on an overall effect of construal models on taboo tradeoffs in the environmental domain. Attitudes, Willingness to pay, Purchase Intentions, and decision speed did not differ significantly across our three conditions. These results partially contrast with McGraw and colleagues (2015), who demonstrated that attitudes became more favorable when a business practice was phrased in a CS construal rather than an MP construal.

This disparity between the literature and our results may be due to multifold reasons. First, attitudes and purchase intentions about an SUV may be determined more by personal convictions and preexisting beliefs than by the RM construal. In other words, those preexisting attitudes might not have been influenced by a different construal, as these attitudes may be robust against those influences. This explanation would be in line with previous consumer psychology research, which states that knowledge and associations of products are context-independent and relatively stable (Fournier, Miller & Allen 2008; Fennis & Pruyn, 2007). As we found significant relationships between authenticity ratings and our factors of interest, it is most probable that judgments over the advertisements were made based on perceptions of the brand's authenticity. In other words, attitudes, willingness to pay, purchase intentions were most likely determined by how much one finds the brand authentic. This relationship was found regardless of condition.

Moreover, Munch and colleagues (1993) showed that consumers do not easily form their attitudes on claims made by the product. In this study, the claim of both the CS (sharing) and MP (compensation of CO<sup>2</sup>) may have played a smaller role in the formation of attitudes, intentions, and price estimations (Willingness to pay). This argument would also explain why

there was no difference between the relational model conditions (CS & MP) and the control condition. The SUV advertisements were possibly rated based on these aspects rather than the different construal. This finding implies that relational models may not affect SUV advertisements as much as proposed. Expanding on this knowledge, associations, and attitudes about the SUV was possibly an even more prominent basis for participants' scores in light of the following second explanation.

We found no support for our hypotheses because SUV advertisements may not elicit the perception of a taboo tradeoff, regardless of the relational model. In other words, participants did not feel that a sacred good (here, damage to the environment) was exchanged with a material good (driving an SUV). It may be that SUV commercials do not automatically elicit associations that concern environmental destruction or harm. Although our MP condition did specify a Co<sup>2</sup> compensation cost, it may have been interpreted positively. Therefore, an effect of a different construal in the advertisement would be nullified by this lack of "taboo." Favoring an SUV would be a benign tradeoff. Viewing an SUV favorable or intending to purchase it would have no negative emotional consequences, as one could not be "caught" undervaluing a sacred value, which is an important part of taboo tradeoffs. (McGraw et al., 2003; Tetlock et al., 2000).

Hypothetically our results provide further arguments for the explanation. As participants did not differ in their submission speed on the factors of interest across the conditions, it is evidence for a tradeoff that the participant does not immediately dismiss. Avoiding and immediately putting down the tradeoff is characteristic of individuals dealing with taboo tradeoffs (Tetlock et al., 2000). Tetlock found that decision speed not only affects participants making the decision, but also observers. Specifically, observers react with outrage seeing a person taking a prolonged time contemplating a taboo tradeoff and not right out dismissing the decision. Furthermore, we did not find moral cleansing indications, as cleaning

goods were not rated significantly differently than non-cleaning goods. Tetlock found that after being involved with a taboo tradeoff, participants rate cleaning goods higher than participants confronted with a secular tradeoff (2000). Possibly there was no perception of moral transgression in the participant by seeing the advertisement in our study. It may be assumed that the advertisements were not seen as a taboo tradeoff.

Similarly, the tradeoff not evoking environmental associations may explain no relationship between environmental identity and attitudes, purchase intention, Willingness to pay, and submission speed. Ehrich and Irwin (2005) showed that participants experience inner conflict and treat the product differently when a deeply important attribute strikes a negative chord. Similarly, Kahn (2005), Gallagher, and Muehlegger (2008) demonstrated that participants with stronger environmental attitudes scored higher on preferences for hybrid cars than non-environmentalist. However, no support for any relationship of environmental identity with the factors of interest was found in our study. By not seeing the tradeoff as a tradeoff that would damage the environment, the influence of environmental identity diminished. Based on these possible explanations, it is logical to assume that the advertisements were not perceived as a taboo tradeoff in any way.

Although unexpected, we did not support our main hypotheses, a surprising result was found. Results showed gender to be significantly associated with advertisement attitude and authenticity ratings. Self-described women (hereafter Women) rated the advertisements as significantly more positive, authentic, and less driven by profit. However, this effect was only present in the Market Pricing condition. This effect may be due to heightened skepticism in self-described men (hereafter men). As Yu (2020) shows, men are more skeptical of green advertisements. More specifically, men are more likely to attribute green marketing with tactics to profit. In line with this, our results show that men rate the SUV company more motivated by profit than women.

As these SUV advertisements likely did not elicit a perception of taboo tradeoff, and no differences in attitudes, purchase intention, or Willingness to pay were found, it may be assumed that this is the case that in general for SUV advertisements. On the one hand, it can be assumed that SUV advertisers could reduce their marketing efforts of communicating the green aspects of the SUV. On the other hand, it may indicate that regulators, such as the Authority for Consumer and Markets (ACM) in the Netherlands, adopt guidelines for these kinds of advertisements. As we showed that associations of environmental harm might not be elicited easily, mandatory features could be added to advertisements, such as showing a heightened personal responsibility for possible damage to the environment. However, as past literature found extensive evidence for environmental car marketing, this interpretation of the results should be taken with caution (Gallagher & Muehlegger, 2008; Plax et al., 2008)

### ***Limitations and Future Research***

The possible explanation of absent perceptions of taboo tradeoffs may stem from limitations to our study design and may make an overall conclusion about the non-existent influence of RM on environmental TTOs extremely difficult. These limitations concern the design of our used advertisements for the Market Pricing condition, perceived environmental damage, and the pre-test to this study. With these limitations, we possibly nullified the effect of relational models on TTOs.

As explained, taboo tradeoffs' key essential characteristic is the tradeoff between a secular and a sacred value, which may not have been perceived in that way in the MP condition. We state that a CO<sup>2</sup> payment in this condition can compensate driven kilometers. Although this is an example of Market Pricing, this possible feature of the advertisement could be interpreted as not harming the environment or even making good for the environment as car use would then be CO<sup>2</sup> neutral. In other words, the MP condition, similar to the CS condition (sharing), would have pointed out the strength of driving an SUV rather

than a taboo tradeoff. Similarly, the environmental concern would have been diminished by this feature. As Wu and Yang (2018) describe, environmental concern is elicited only when personal responsibility for environmental damage is perceived. By stating how CO<sup>2</sup> can be compensated, participants were not aware of any personal responsibility, therefore reducing any perception of a sacred value being possibly harmed by the SUV. Next, the most important limitation lies in our pre-test did not assess the perception of a taboo tradeoff of the advertisements. Therefore, it is impossible to determine if the advertisements were perceived as such in the study. Hence, we propose that we should have conducted the study and the study differently.

More research using experiments with controlled measures of taboo tradeoff and environmental concern in SUV advertising is needed. First, we propose that future studies possess heightened possible taboo tradeoff perceptions in a Market Pricing condition by trading off money for danger to the environment rather than a CO<sup>2</sup> compensation. We propose that the advertisement communicate higher costs due to the SUV not being environmentally friendly. Second, studies should investigate the role of perceptions of responsibility of endangering the environment. It may be that such perceptions affect TTO perceptions significantly. Possibly studies could entail a text stating how one's car and gasoline use may harm nature preceding the advertisements. Lastly, research should pre-test taboo tradeoff perceptions using the Sacred Values Measure (Hanselmann & Tanner, 2008), which showed good internal consistency (Tanner et al., 2009).

## **Conclusions**

The aim of the present research was to investigate the effects of different relational models on taboo tradeoffs in the environmental domain. Specifically, we set out to test participants attitudes and purchase behavior when seeing different SUV advertisements. This study has shown that attitude and purchase behavior, such as purchase intention and

willingness to pay, did not change significantly for different relational models of the SUV advertisement. Specifically, a Market Pricing strategy did not yield significant different results than an advertisement showing an advertisement with a Communal Sharing strategy. The implication of this result is the possibility that SUV advertisement are unaffected by different relational models set-ups, and advertisement for these types of cars. Furthermore, these results suggest that SUV advertisements may not, in general, perceived as taboo tradeoffs. However, these findings may be explained by the limitations to this study, such as a possible faulty MP condition, as well as lacking pretesting the advertisements for taboo tradeoff perception.

**Conflict of Interest**

The Author declare that they have no conflict of interest.

**Compliance with Ethical Standards:**

This research involves human participants. All procedures performed in this study were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards

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## Appendix A

### Advertisement Poster for Three Conditions

**Figure A1.**

*Condition Communal Sharing Advertisement Poster*



**Figure A2.**

*Condition Market Pricing Advertisement Poster*



**Figure A3.***Condition Control Advertisement Poster***Appendix B****Pretest Options for Advertisement Posters****Figure B1.***Condition Communal Sharing Option CS1***Figure B2.***Condition Communal Sharing Option CS2*





**Figure B3.**

*Condition Communal Sharing Option CS3*



**Figure B4.**

*Condition Market Pricing Option MP4*



**Figure B5.**

*Condition Market Pricing Option MP5*



**Figure B6.**

*Condition Market Pricing Option MP6*



**STRUCK TC90**

## Our SUVs are fair

The drivers of our SUV family are special ones: many of our customers choose to pay for each km they drive the exact calculated CO<sup>2</sup> emission and so, keep their environment safe.

**BE ONE OF THEM WITH THE STRUCK TC 90!**

Struck