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To fly or not to fly? The role of moral disengagement on individuals' flying behavior

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Zusammenfassung

Auch wenn die Menschen eine umweltfreundliche Einstellung haben und die Bedeutung der Nachhaltigkeit verinnerlichen, fällt es ihnen schwer, den Flugverkehr aufzugeben, obwohl er für die Welt, in der wir leben, schädlich ist. Daraus ergibt sich ein so genanntes "Fliegerdilemma", das sich auf den Unterschied zwischen der Selbstidentität des Einzelnen als "umweltverantwortlicher Konsument" und dem tatsächlichen Verhalten bezieht, das zu den Umweltauswirkungen häufiger Flugreisen beiträgt (Rosenthal, 2010). Bis heute ist die Rolle der Flugwerbung bei der Auslösung von nicht-nachhaltigen Wünschen nach wie vor ungenügend erforscht. Um diese Forschungslücke zu schließen, untersuchte die experimentelle Studie (between-subjects), ob und wie Individuen sich aufgrund der Exposition gegenüber nachhaltiger und nicht-nachhaltiger Flugwerbung moralisch zurückziehen (moral disengagement). In der Studie wurden die Auswirkungen dieser Werbung auf die vier Schlüsselstrategien der Theorie des moralischen Disengagements gemessen, darunter die moralische Rechtfertigung, die Verlagerung von Verantwortung, die Minimierung negativer Folgen und ein vorteilhafter Vergleich. Die Ergebnisse (N = 254) deuten darauf hin, dass Einzelpersonen zwar immer noch geneigt sind, ihr Flugverhalten moralisch zu rechtfertigen, dass aber ihr Verständnis bezüglich eines Umweltschadens verstärkt wird, wenn sie beiden Arten von Flugwerbung ausgesetzt sind. Die Moderationswirkung der Sorge um den Klimawandel wurde unter den Teilnehmern gefunden, die ein geringes Maß an Verantwortung für die Umwelt zeigten. Die Implikationen der Ergebnisse für die zukünftige Forschung und ihre Grenzen werden diskutiert.

Keywords: Flugreisen, Fliegen, Werbung, moral disengagement, Nachhaltigkeit, Sorge um den Klimawandel, Experiment, Reiseentscheidungen, umweltfreundliche Einstellungen

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Abstract

While people may hold pro-environmental attitudes and assume the importance of sustainability, they find it difficult to give up air travel despite it being detrimental to the world we live in. This results in a so-called 'flyers' dilemma' which refers to the difference between the individual's self-identity as an 'environmentally-responsible consumer' and the actual behavior that contributes to the environmental impacts of frequent air travel (Rosenthal, 2010). As of today, the role of flight advertising in triggering desires for unsustainable actions remains scarce. To address this research gap, the between-subjects experimental study explored whether and how individuals morally disengage due to exposure to sustainable and non-sustainable flight advertising. The study measured the effects of these advertisements on the four key strategies from the theory of moral disengagement, including the moral justification, displacement of responsibility, minimization of negative consequences, and advantageous comparison. The findings (N = 254) indicate that while individuals are still inclined to morally justify their flying behaviors, their acknowledgement of harm is heightened when exposed to both types of flight advertisements. The moderating role of climate change concern was found among participants who exhibited low level of responsibility for the environment. The implications of the findings for future research and limitations are discussed.

Keywords: air travel, flying, advertising, moral disengagement, sustainability, climate change concern, experiment, travel decisions, pro-environmental attitudes

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INTRODUCTION

The nature of environmental challenges has long been known, such as pollution, global warming, tropical deforestation, loss of biodiversity, to name a few. However, it is only in recent years that these problems have become widespread matters of concern among the general public. The awareness of environmental issues and climate-damaging behavior in the population is as high as ever. Numerous reports and campaigns address the climate crisis and report on the impact of our actions on CO2 emissions with air travel recognized as one of the biggest contributors (Davison, Littleford, and Ryley, 2014; McLusky and Sessa 2015). Although the number of people who try to reduce their negative impact on the environment keeps getting higher, many citizens still perceive air travel as desirable and find it difficult to give it up despite it being detrimental to the world we live in. This results in a so-called 'flyers' dilemma' which refers to the difference between the individual's self-identity as an 'environmentally-responsible consumer' and the actual behavior that contributes to the environmental impacts of frequent air travel (Rosenthal, 2010). While people may hold pro-environmental attitudes and assume the importance of sustainability, they also engage in less sustainable leisure – motivated by the desire to simply get away, even if for only a couple of days, or tick destinations off a mental list of places visited (Hibbert et al., 2013; Higham et al., 2014; Randles and Mander, 2009). To complicate matters further, the aviation sector is estimated to expand to a great extent in the future, which means that the contribution of air travel to the environment will increase significantly in the next decades. Given this growth trajectory, there is also growing public awareness to take actions and address the issue now (The Future of the Airline Industry 2035 report, 2018).

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At the same time, airline advertising seems to escalate this dilemma by portraying activities as desirable and attractive that are harmful to the environment. Many scholars have expressed their concerns with the contribution that air travel has on climate change as well as around consumer awareness of climate change issues and the fact that there are very few signs of behavior change among people, even the most environmentally aware ones (Hares, Dickinson and Wilkes, 2010; Khoo-Lattimore and Prideaux, 2013; Higham et al., 2014). While media recurrently report about and detail the massive ecological consequences, individuals are simultaneously exposed to advertising of unsustainable products and services (Brüggemann and Engesser, 2017). While sustainability and climate change has been researched extensively in the last few decades, the role of air travel advertising in prompting desires for unsustainable activities remains scarce.

To address this research gap and contribute to a better understanding of the flyers' dilemma, this study aims to examine the dissonance between environmental principles individuals hold and their desire for air travel generated by flight advertisements. Specifically, the study identifies sustainable and non-sustainable flight advertisements and measures their effects on moral disengagement in comparison to the control group. In other words, it looks into whether and how exposure to these contents lead people to act environmentally unaware despite their environmental knowledge. The traditional view that increasing knowledge changes attitudes and therefore changes behavior is plainly not true for the majority of people. People know more about environment and ecological issues than ever before, but continue to behave in unsustainable ways. The between-subjects experimental design explores how exposure to different advertising frames affects individuals' mechanisms of moral disengagement (Bandura, 2016).

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THEORETICAL FRAMEWORK

For the purpose of this study, Albert Bandura's theory of moral disengagement will be referred to in order to create a basis on which the research is built. The theory was developed by social psychologist and states that people generally act in line with, and abstain from behavior contrary to their internalized moral standards. These standards that have been previously developed through social learning, however, can be disengaged and overridden. The theory explains how people can act against their own values without feeling guilty via four main strategies, including: a) moral justification; b) advantageous comparison; c) minimization or distortion of the negative effects, and d) the displacement of responsibility (Bandura, 2016).

While people learn about the principles of right and wrong in childhood that provide a link between moral standards and moral behavior, they also acquire mechanisms that allow them to distance themselves from the moral and ethical implications of their actions (Bandura, 2016; Ruedy and Schweitzer, 2010). Individuals make use of a number of mechanisms to validate their unethical behavior and actions, from bullying and cyberbullying among children and youth in school to making false allegations in court settings (Clemente, Espinosa and Padilla, 2019; Hymel and Bonanno, 2014). These mechanisms allow people to behave harmfully and still live in peace with themselves. The theory of moral disengagement as laid out by Albert Bandura seeks to explain why individuals tend to fail to live up to their moral principles without feeling remorse.

The author describes four major points that individuals can deploy to morally disengage from the harmful behavior. The first point is the *behavior locus*, which indicates that the harmful behavior is viewed as neutral or validated by finding a moral justification to worse

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practices. Such justification can take a number of forms, including social, economic and civic. The harmful behavior is presented as minor when compared to poor practices, or the use of the understated statements is enforced to disguise the gravity of that behavior. The second point is the *agency locus*, that is, people release themselves of personal accountability and displace responsibility to other actors or entities. The third is the *outcome locus*, which refers to when individuals disregard, minimize or even dispute the consequences of their actions. In this view, there is no moral issue if the result of an action appears insignificant, and thus no feelings of shame or guilt surface. Lastly, the *victim locus*, where victims are dehumanized and blame is assigned to them or to compelling circumstances (Bandura, 2016).

Therefore, by obtaining a moral justification, displacing the responsibility, minimizing the negative consequences or attributing blame to other people or entities, individuals can morally disengage from destructive outcomes of their actions. As this set of mechanisms provides the means to weaken or eliminate self-sanctions such as feelings of guilt and self-punishment, and hold a positive self-view while doing harm, this study investigates them further to find out which help individuals to validate and support their flying behavior as a response to a number of advertising frames.

LITERATURE REVIEW

The Flyer's Dilemma

In the recent decades, the view of flying has changed from being a luxury form of mobility available to the elites into a contemporary form of hypermobility, described as movements that are frequent in time and long distance in space. Hypermobility is a

characteristic that has emerged with the growing network of airports worldwide, higher incomes, and more leisure time (Adams, 2017). According to International Civil Aviation Organization's (ICAO) statistics, there was a total of 4.1 billion global air passengers in 2017, and that number has been increasing every year since 2009 (ICAO, 2017). In light of the challenge to decarbonize transport, and the need to reduce greenhouse gas emissions, the flying practice has been reframed, and new trends and movements have surfaced. The term 'binge flying' was coined by Mark Ellingham, a publisher, who criticized the growing appetite for holidays accessed through air travel and believed that it is an addiction that is destroying the planet (Cohen, Higham and Cavaliere, 2011; Hibbert et al., 2013). The pressing question of whether people should, or able to, fly less received global attention with the anti-flying movement that originated in Sweden known as "flight shame." The movement is about being accountable for the carbon footprint, and addresses the guilt a person should feel because of its devastating impact on climate change (Evening Standard, 2019; Gössling et al., 2019). Although air travelers become more aware that they are doing things that cause environmental problems and show concern for the damage their actions produce, this concern is not always reflected in their actions and improved environmental behavior. This attitude-behavioral gap where individuals' environmental attitudes do not affect their air travel behavior is evident among people from all walks of life, even the most environmentally aware ones (Hares, Dickinson and Wilkes, 2010; Higham et al., 2014). This contradicts research in other domains where connections between environmental attitudes and knowledge have been established (Fraj-Andres and Martinez-Salinas, 2007).

While people examine strong attitudes towards sustainability, advertising generates large amounts of content that portrays carbon intensive activities such as air travel as appealing.

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Taking this paradox as a meaningful point of departure, this study aims to investigate the role of sustainable and non-sustainable flight advertisements on mechanisms of moral disengagement. An experimental design looks into the four main strategies drawn from the theory of moral disengagement (Bandura, 2016) and clarifies whether flight advertising can reinforce such moral disengagement mechanisms in comparison to the control group.

Framing

It is generally found that people travel for a variety of reasons, including business, escape and relaxation, to visit family and friends, experience different cultures, or self-development (Pearce and Lee, 2005). Trends in air travel also include adolescents that fly on their own to visit friends, and elderly people who take flights to warmer destinations for health care reasons (Gössling et al., 2019). As advertising uses different strategies to reach consumers and transmit its message, there is quite a variation of presentations of flying that companies employ to make an unsustainable service of flying seem appealing. One of these advertising tools is framing, which refers to "some aspects of a perceived reality and the act of making them more salient in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described" (Entman, 1993). Frames attract attention to some aspects of reality while excluding others, which creates salience for certain elements and prompts audiences to identify and make sense of them. Advertisers use different words, phrases, images, depictions and visuals to telegraph meaning and to focus audience's attention on particular aspect of an advertisement in order to gain favorable response. In today's highly visual time, it is interesting to explore what kind of visual attributes are in a flight advertising context. Visuals are powerful framing tools because

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they are less intrusive than words and as such provide details that are relevant to people's understanding of the world around them (Hertog and McLeod, 2001). Therefore, people may be more likely to accept the visual frame without question, because visuals seem closer to reality and thus have the power to create stronger emotions. Visuals in this study are collectively composed of the following graphic elements: photographs, illustrations, and other graphic symbols.

As flying has become a social norm, part of everyday consumption and a key component of a globally connected world, these norms were furthermore reinforced through airline advertisements to illustrate the variation of reasons for flying (Randles and Mander, 2009). Because air travel is associated with a taste of freedom and opportunity, it is viewed as a symbol of social standing (Urry, 2012). The emergence of social networking sites has created an opportunity to transform air travel into network and social capital (Gössling and Stavrinidi, 2016). This change has eventually resulted in some sites such as Instagram to become a major platform for travel communication by influencers and travelers (Gretzel, 2018). This subsequently has led airlines to create advertisements that speak to the desires of customers by promoting a lifestyle and projecting an image where one can become part of a certain group of people, frequent flyers, travelling in search of relaxation, romance, self-actualization, new experiences, visiting friends and relatives (Pearce and Lee 2005). This category that includes advertising of the discretionary air travel is evident among the majority of airlines worldwide. British Airways, for example, is known for creating multi-series of advertisements that emphasize concepts such as 'what if' or 'what are you waiting for' that are focused on memories, exciting destinations, connectedness and unforgettable trips (British Airways, 2016; Newsworks, 2019). German carrier Lufthansa has also created a similar campaign called 'say

yes to the world' that encourages people to discover the world and its possibilities with an open mind, while Emirates Airline advertises 'hello tomorrow' that is all about the empowerment, unlimited potential of the future, new ideas and visions (GTP, 2018; Drum, 2012). These aforementioned examples demonstrate how different airlines have created advertisements that present information in a similar manner with the message they try to convey. These advertisements were designed to convince the audience to take a chance, reward yourself, explore and ultimately be happy. Many scholars argue that much of the social interaction people experience in real life takes place in a format that is constructed from individuals' own experiences. Therefore, advertisements as such are very likely to be understood, and people could develop attitudes in relation to the events portrayed in them. Prior studies have demonstrated that this kind of advertisements is effective in generating positive responses because individual interpretations are not viewed as correct or incorrect and are solely based on the individual's understanding and ability to imagine the experience conveyed in them (Green, Brock and Kaufman, 2004; Wentzel, Tomczak and Herrmann, 2010). Therefore, these advertisements are effective in drawing the viewer into the portrayed story or event and arguably are good for the promotion of experiences.

In addition to air travel being highly motivated by personal reasons, business is also an important driver (Wynes et al., 2019). According to World Travel Organization, around 13 percent of all international travel takes place for business or professional purposes (UNWTO, 2017). Business travel is perceived to be of actual necessity for many professionals in performing well at work as well as developing and maintaining work relationships (Urry, 2012). In the scope of this study advertisements for both discretionary and professional reasons

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are considered conventional as they do not take the environmental impact of flying into account, and hence are labeled as non-sustainable.

With the environmental consequences of air travel becoming more prominent, the environmental impact of flying could no longer be ignored (Peeters and Dubois, 2010). The airline sector has started to respond to the increasing awareness of customers and governmental entities by altering their marketing activities and creating an image of being environmentally friendly. As awareness of the need to minimize the carbon footprint in the society has grown, some airlines have started to take steps to make their products more sustainable, for example, by increasing seat density and testing biofuels. On the communication side, topics about sustainability and environmental issues have started to appear and call attention to in the communication strategy of airlines (Hagmann, Semeijn and Vellenga, 2015). This concept of 'greening' and environmental claims in advertisements have been implemented in response to growing demand among customers to provide them with the solution that reduces the emission level in the atmosphere in order to achieve carbon neutrality (Sarkar, 2012).

For example, Air France-KLM, one of the biggest airlines in Europe, has engaged in the following environmentally-friendly activities: (1) increasing fuel efficiency; (2) investing in innovations such as sustainable biofuel; (3) reducing residual waste; and (4) carbon-offsetting scheme (KLM Group., n.d.). Unlike many airlines that focus on promoting flights and destinations to sell more tickets, Air France-KLM has launched 'Fly Responsibly' campaign which intends to do the opposite. It encourages travelers and the aviation industry to be aware of the negative impact flying has on the environment and consider not flying by asking its customers three questions: (1) "Do you always have to meet face to face?"; (2) "Could you take the train instead?"; and (3) "Could you contribute by compensating your CO2

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emissions or packing light?" (Wilson, 2019). Research indicates that this argumentative strategy triggers individuals to analyze the information rationally and evaluate it for truth. It is designed to convince the audience of the validity of claims by presenting the content in a clear, logical way. While having the advantage of presenting the information in such a manner, it also limits multiple interpretations and hence forces individuals to either agree or disagree with the advertising message (Chang, 2009; Ketelaar et al., 2014). As this example demonstrates advertising that places all the emphasis on sustainability and climate change concern by illustrating the need to question desirable consumption habits and consequential environmental impacts, it is labeled in this study as sustainable.

Greenwashing

As discussed in the paper, different advertising framing strategies exist and may be more or less effective depending on the nature of the company and core objectives. When it comes to flight advertising that is portrayed as sustainable, there is one characteristic that needs to be taken into consideration. The research on the content of green advertisements takes two directions. The first is linked to the interpretation of sustainable advertising and the nature of environmental information presented in the ad (Grillo, Tokarczyk and Hansen, 2008, Wagner and Hansen, 2002). The other stream of research focuses on greenwashing, the term used to describe the practice of misleading consumers with vague or unsubstantiated claims regarding the environmental benefits of a product, service or organization's policies (Carlson, Grove, and Kangun, 1993; Fernando, Suganthi, and Sivakumaran, 2014). Due to the rapid growth of environmentally conscious consumers, many companies have adopted green advertising and adjusted their policies to place emphasis on the value of embracing sustainability. Schmuck et al. (2018) argues that oftentimes claims about sustainability are used in the advertising of

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products that are not environmentally friendly in their very nature, including plastic bottles, airline flights, and nonhybrid cars. They portray information about the environmental attributes of a product or service which cannot be easily verified or is simply not correct (Schmuck et al., 2018). As anticipated, a number of scholars have looked into it as it is important in practice and raises challenging issues. Wagner and Hansen (2002) classified sustainable advertisements into five categories based on a combination of textual and graphical components. The latter researchers regard as a physical layout of the advertisement that consists of visuals, colors, backgrounds, and logos. All these elements aid in communicating the objective or imply that the company benefits the environment. The researchers have argued that advertisements with claims are seen as sustainable if they incorporate one of the following elements: green colors and tones, natural landscapes, children, images of wildlife, and vegetation (Wagner and Hansen, 2002).

As anticipated, however, many researchers have pointed out that while some companies use advertising to communicate their sincere efforts to lessen the environmental impact of their products and services, others use it as a tool to exaggerate or even fabricate claims to be sustainable when, in fact, they are not (Carlson, Grove, and Kangun, 1993). The scholars have stated that consumers are confused or misled by environmental claims due to a number of possible factors such as lack of environmental knowledge, complex nature of environmental issues, and dubious terms. To distinguish deceptive claims, scholars have developed a classification scheme and divided them into four categories. The first category describes claims that are overly vague or ambiguous containing a phrase or statement that is too broad to have a clear meaning. The second category consists of claims that omit important information that is necessary to evaluate their truthfulness or reasonableness. The third category simply states

false information or is an outright lie. At last, it is a combination of claims which contain more than one deceptive element (Carlson, Grove, and Kangun, 1993). However, despite the continued prevalence of greenwashing claims in advertising, studies on how such claims affect the way consumers perceive those in advertising and whether they affect their evaluation remain insufficient (Schmuck et al., 2018).

Moral Disengagement from Flying

To extend the current understanding on the effective framing strategies of flight advertising, the study concentrates on the two aforementioned strategies, including the sustainable and non-sustainable to investigate whether they have the ability to trigger moral disengagement of individuals in different ways. The study measures the effects of these advertisements on the four key strategies from the theory of moral disengagement which might convince people to, consciously or unconsciously, hold on to flying while retaining their sense of moral integrity (Bandura, 2016). These strategies are as follows: moral justification, displacement of responsibility, minimization of negative consequences, and advantageous comparison.

When confronted with desirable images of flying through advertisements, people might exhibit different attitudes. The first strategy suggests that some might highlight the positive aspects of flying by morally justifying their behavior (Bandura, 2016). For instance, studies have demonstrated that mobility is an important concept for cosmopolitan identities, especially for the elites and the youth (Skrbis, Woodward and Bean, 2014). Therefore, people might find flying as a way to live as a citizen of the world to broaden their horizons and build social capital with people in other parts of the world (Randles and Mander, 2009). As examples show, such

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advertisements suggest to their customers to 'Say Yes to the World' or 'Hello Tomorrow' (GTP, 2018; Drum, 2012). In doing so, people might morally justify their preference to fly which in turn eliminates negative emotions that are associated with it, including doubt and guilt (Bandura, 2016). Thus, the following hypothesis can be made:

Hypothesis 1 (H1): *Exposure to sustainable and non-sustainable flight advertisements will result in higher moral justification in comparison to the control group.*

As another strategy of justifying the flying behavior, people might assign blame to other actors. The environmental concern is a global issue and there are many actors and entities that contribute to climate change and are expected to address this issue and provide guidance, including "governments, businesses and other countries," which makes the displacement of responsibility a possible response to justifying individuals' flying behavior (Hares, Dickinson and Wilkes, 2010). This strategy points out to the differing perspective on responsibility between individuals and society at large. Based on this theoretical background, the following hypothesis is proposed:

Hypothesis 2 (H2): *Exposure to sustainable and non-sustainable flight advertising will result in higher displacement of responsibility in comparison to the control group.*

Despite overwhelming evidence to climate change, some scientific uncertainties still exist and complicate matters. Studies suggest that while some people take climate change issues seriously, they might still not fully act against environmentally harmful actions and as a strategy - minimize their role as contributors (Hope et al., 2018). Some people may see themselves as powerless and argue from a standpoint that their personal decisions alone will not prevent global warming, and hence their role is insignificant. Thus, when individuals are

exposed to favorable flight advertisements, they might minimize the negative consequences of flying in their favor (Bandura, 2016). Integrating this theoretical perspective, the following hypothesis is therefore proposed:

Hypothesis 3 (H3)*: Exposure to sustainable and non-sustainable flight advertisements will result in higher minimization of negative consequences of flying in comparison to the control group.*

The last strategy consists of the advantageous comparison of flight behavior to more environmentally damaging behaviors. People might blame the industry, conglomerates, or simply other individuals that engage in the same behavior more often (Bandura, 2016). In other words, this strategy takes place when people compare their actions with the behaviors of others and come to the conclusion that a single act of flying is not so detrimental after all. Therefore, the following hypothesis can be made:

Hypothesis 4 (H4)*: Exposure to sustainable and non-sustainable flight advertising will result in higher number of advantageous comparisons to other ecologically detrimental actions in comparison to the control group.*

However, individuals' views on climate change differ. Several scholars have established that there are travelers that have shown moral concern and strong sense of responsibility to the environment in order to reduce their contribution to climate change (Higham, Cohen and Cavaliere, 2014; Randles and Mander, 2009). Thus, the study explores whether the effect of exposure of different flight advertisements on moral disengagement is moderated by a person's concern towards climate change. It is suggested that respondents that predominantly rate low on climate change concern will less likely be resistant towards the ads

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and therefore more likely to morally disengage. By treating climate change concern as a moderator, the researcher examines whether consumers tend to make their decisions based on their pre-existing ideologies (Cook and Lewandowsky, 2016). Based on the information above, the study hypothesizes the moderating role of climate change concern:

Hypothesis 5 (H5): *Respondents who rate low on climate change concern are more likely to engage in moral disengagement strategies of moral justification, displacement of responsibility, minimization of negative consequences, and advantageous comparison.*

Companies make use of advertisements that appeal to the values of the audience as it makes them more persuasive (Nelson et al., 2006). Nevertheless, it is possible that respondents that highly regard climate change might exhibit differing views when it ultimately comes to their evaluation of sustainable advertisements. In particular, individuals who are familiar with the concept of greenwashing might be reluctant to believe the advertisement and its message despite demonstrating awareness of climate change issues and sense of responsibility for the environment. To date, it has not been sufficiently established which mechanisms affect individuals' perception and assessment of greenwashing claims (Schmuck et al., 2018). Based on the prior studies, extensive literature review, and the fact that the effects that sustainable and non-sustainable flight advertising have on people's moral disengagement are unclear, the following research question emerged and is formulated below:

Research Question (RQ): *How does seeing sustainable and non-sustainable flight advertisements affect moral disengagement mechanisms of a) moral justification, b) displacement of responsibility, c) minimization of negative consequences, and d) the advantageous comparison?*

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METHODOLOGY

Study Design

In order to answer the assumptions of this study, conducting a between-subjects online survey experiment is the method best suited. It allows the researcher to split individuals into groups where each participant experiences only one of the experimental conditions which is particularly useful when studying topics that are prone to social desirability bias, that is the tendency of people giving answers different than what they truly think due to the perception that their view is in conflict with social norms or expectations. Therefore, to discover whether different flight advertisements make people more susceptible to morally disengage from their actions and whether climate change concern impacts their decision, a conceptual model was developed and tested using a moderation analysis on IBM SPSS.

In this between-subjects survey experiment, participants were randomly assigned to one of three conditions. Two of the groups, sustainable and non-sustainable, were considered the main experimental conditions, in which participants were unknowingly exposed to diverse perspectives through flight advertisements that focused either on sustainability or desirability of flying. In contrast, participants in the control group were exposed to unrelated topic that has lacked any perspective on flying. This condition, therefore, has provided a baseline response of how participants act without any treatment. In order to further investigate whether the relationship between two variables depends on the climate change concern score of individuals and avoid factors that can produce spurious associations, the climate change concern was included in the model as a moderator and statistically accounted for. Thus, the conceptual model is proposed below (Figure 1).

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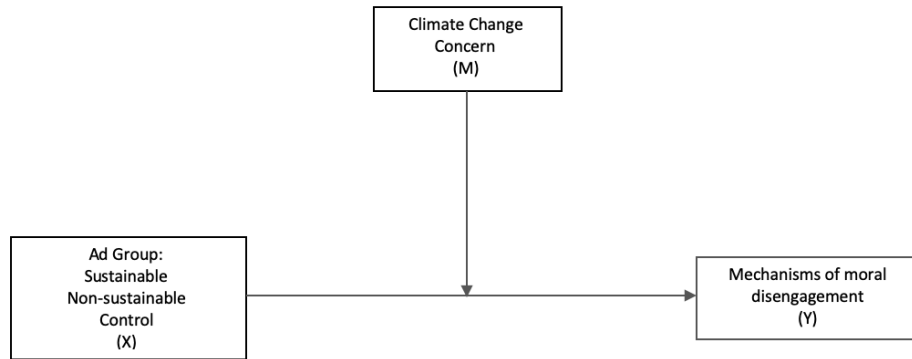
Figure 1. Conceptual diagram of a moderation model in which the effects of advertising frames (X) on the mechanisms of moral disengagement (Y) are influenced or dependent on a moderator (M).

Sample

For this study, a total of 307 responses were collected in the time frame between April 14th and May 15th 2020. After the initial review of the data, participants under the age of 18 as well as missing values were excluded from the data analysis. In order to check multivariate outliers, a visual inspection and distance check were conducted, following which ten outliers were deleted. Finally, 254 usable responses were taken for further analysis. A share of respondents have come from the researcher's social following. In addition, online communities supporting online research such as Survey Circle as well as numerous survey-sharing Facebook groups were utilized to find participants and diversify the sample. The invitations to participate were posted on various social media platforms to prompt participation. Respondents were between 18 and 69 years, representing 40 different nationalities. The top ten countries of residence are the following: 17.7% Austria, 15.7% United States of America, 8.7% Netherlands, 7.1% United Kingdom, 4.7% Germany, 4.7% France, 3.5% Canada, 3.5% Russia, 3.1% Spain, and 2.8% Belgium. The sample includes 77 male and 177 female participants. Furthermore, individuals came from a variety of educational backgrounds (5.1% high school,

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46.9% bachelor's degree, 40.9% master's degree, and 6.7% doctorate). The sample studied consisted mainly from the members of the Millennial generation in terms of age ($M = 31.53$, $SD = 10.09$). Since participants came from researchers' social following and online research communities, it was anticipated that the largest age group surveyed would be the Millennial generation, people aged from 23 to 38 in 2020. Since millennials represent the fastest growing demographic and the majority of travelers worldwide, it is appealing to take a closer look into their preferences and choices when it comes to flying (UNTWO, 2017).

Procedure

The experimental study uses a between-subjects design. Participants were asked to fill in a survey by clicking on the shared link. After reading through data regulations and a statement of the informed consent, participants were asked to indicate how often they have spent their holidays abroad in the past three years and how frequently they have used airplanes as a means of transportation for both personal and professional reasons. Afterwards they were asked a set of questions to measure their pre-existing attitudes on climate change concern. The questions were presented in a bigger battery of questions that had nothing to do with sustainability to disguise the aim of the study, prompt honest responses and avoid social desirability bias which otherwise could have influenced the results of the study. Subsequently, they were randomly assigned to one out of three groups. In the first group, respondents were presented with three sustainable flight advertisements that highlighted the environmental impact of flying (see Figure 2). The second group of participants was exposed to three non-sustainable flight ads which emphasized the desirable aspect of flying to discover our beautiful world (see Figure 3). The last was the control group where individuals were presented with unrelated advertising about banking as a filler task. Next, participants were asked to evaluate

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the ads by indicating which adjectives apply best to the contents they have seen. As a next step, participants were asked a set of questions that explored their moral disengagement in terms of moral justification, displacement of responsibility, the minimization of negative consequences, and advantageous comparison. Lastly, they were asked to fill out a short socio-demographic form. The form was composed of four questions: their gender, age, country of residence, and educational level. Most items were measured on a 7-point Likert scale, with 1 indicating the lowest point and 7 indicating the highest point. The frequency of flights questions produced at the beginning of the survey were asked as open-ended questions.

Stimulus Material

Three actual advertisements in each group were presented to participants to ensure the external validity of the study. The advertisements in sustainable and non-sustainable groups included a mixture of original and modified headlines by three airlines such as Qantas Airways, Air France-KLM, and Turkish Airlines. The advertisements in these groups were chosen based on their appealing views, nature-evoking elements, and green color as it is highly associated with sustainability. Headlines in the non-sustainable group were adapted by concentrating on one main message of discovery of beautiful places to make them comparable to each other. Some of the headlines were manipulated due to the lack of sufficient number of actual print advertisements that clearly communicate the sustainable message or have readable slogans. Despite of the aforementioned minor modifications, participants evaluated the ads as professional based on a 7-point Likert scale with 1 indicating not professional and 7 indicating professional ($M = 6.04$, $SD = 1.09$).

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Measures

Dependent variables

Factor analyses. Since the study investigates different mechanisms of moral disengagement, an exploratory factor analysis was conducted to explore the data prior to forming indices, in other words, whether the supposed factor loadings are correctly specified. A principal components analysis was run on a 22-question questionnaire that was used to measure moral disengagement strategies in this study. Inspection of the correlation matrix showed that all variables had at least one correlation coefficient greater than 0.3. The overall Kaiser-Meyer-Olkin (KMO) measure was 0.86 with individual KMO measures all greater than 0.7, classification of "middling" to "meritorious" according to Kaiser (1974). Bartlett's test of sphericity was statistically significant ($p < .0005$), thus suggesting factorability.

The principal components analysis revealed four components that had eigenvalues greater than one and which explained 36.7%, 16.9%, 8.5%, and 6.5% of the total variance, respectively. Visual inspection of the scree plot indicated that three components should be retained (Cattell, 1966). The three-component solution explained 62% of the total variance. An Oblimin rotation was employed to aid interpretability. The rotated solution exhibited structure that was not entirely consistent with the moral disengagement strategies the questionnaire initially was designed to measure. The strongest loadings of both minimization of negative consequences and advantageous comparison items loaded as one on Component 1, displacement of responsibility items on Component 2, and moral justification items on Component 3. For this reason the measures that loaded together were combined to create one factor called *refusal to acknowledge harm*. Component loadings of the rotated solution are presented in Table 1.

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Refusal to acknowledge harm

A total of eight items from two concepts were combined to form the index ($M = 4.27$, $SD = 1.06$, Cronbach's α =.88). The first five measures were taken from the concept of minimization of negative consequences which asked respondents to state their agreement to the following statements: *"My actions make no difference to climate change;" "I cannot do much for the environment by not flying;" "I think I can make a positive contribution to climate change by cutting down air travel;" "It is pointless to reduce air travel as an individual;" "I can protect the climate by giving up air travel."* Moreover, the following three items were included from advantageous comparison measures into an index: *"When you think of the environmentally harmful lifestyle of others, air travel is of little consequence;" "Flying once a year is not so bad compared to actions that others take day after day;" "There are far more climate-damaging behaviors than flying."* The aforementioned measures were adapted from two studies (Kim and Choi, 2005; Moore et al., 2012).

Displacement of responsibility

Four items were used to create an index for the displacement of responsibility ($M = 6.33$, $SD = 1.07$, Cronbach's α =.95). The two questions addressed the importance of different actors in reducing CO_2 emissions and consumption of fossil fuels caused by the aviation. Four statements that mentioned the following actors were included: "aviation industry" and "industry and commerce." The other two "I myself" and "governments" were excluded to improve the internal reliability.

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Moral justification

Moral justification ($M = 5.49$, $SD = .88$, Cronbach's α =.83) was measured by five items that were combined to an index. Participants were asked to indicate their opinion to the following statements that capture both cosmopolitan and social dimensions: *"It is okay to fly to get to know the world in all its facets;" "It's okay to fly because everyone should learn to understand foreign cultures;" "Air travel keeps up the bonds to distant friends and families;" "Without air travel, you cannot really be there for certain friends and family;" "Only through regular air travel a person can maintain a good relationship with distant friends and relatives."*

Moderator

Climate change concern

Climate change concern was treated as a moderator ($M = 5.39$, $SD = 1.30$, Cronbach's α =.94) to investigate whether it impacts the outcomes. Participants were asked to indicate their level of agreement to the following four items taken from Metag and colleagues: *"Climate change is a serious problem; "Climate change contributes to extreme weather events;" "It is important to do something about climate change as soon as possible;" "Climate change is a serious concern for me"* (Metag, Füchslin and Schäfer, 2017).

Control variables

A number of controls were introduced and accounted for since they could have impacted how respondents perceive the stimuli and how relevant they are to them.

Air travel frequency ($M = 11.48$, $SD = 12.88$) was assessed by two open-ended questions which were presented at the beginning of the survey. The questions asked participants how frequently

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they have used airplanes as a means of transportation for both personal and professional reasons in the past three years.

Ad evaluation (M = 5.47, SD = 1.02, Cronbach's α =.88) was composed by a set of six semantical differentials which asked respondents to indicate how convincing or unconvincing, attractive or unattractive, interesting or uninteresting, positive or negative, credible or not credible, professional or not professional they found the advertisements they have seen.

Moreover, the demographic controls of gender and age were included in the models.

RESULTS

In order to answer the study's hypotheses and the research question, a series of regression analyses was executed to assess whether sustainable and non-sustainable flight advertisements prompt individuals to morally disengage in different ways (H1-H4, RQ1). Since the independent variables are measured on a nominal scale and could not be directly entered into a multiple regression, two dummy variables were created such as sustainable and non-sustainable, and the third group (control) acted as a reference group. To test whether participants' pre-existing attitudes towards the environment are related to the outcome, interaction terms were created for the predictor and climate change concerns (H5). All analyses controlled for participants' gender, age, air travel frequency and advertisements evaluation.

The regression analysis showed that Hypothesis 1 is partially supported. Moral justification was affected by seeing flight advertisements in the non-sustainable group as indicated by a significant result (b = - 0.33, p = .008), but not in the sustainable group (b = - 0.22, p = .077). In addition, the effect concerns all respondents regardless of their scores on

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climate change concern as indicated by the non-significant interaction term for the groups (sustainable, $b = 0.008$, $p = .932$; non-sustainable group, $b = 0.03$, $p = .744$). The results are summarized in Table 2.

Next, the displacement of responsibility was examined. The analysis revealed that neither the sustainable ($b = 0.18$, $p = .225$) nor the non-sustainable ($b = -0.16$, $p = .273$) groups show a significant increase in displacement of responsibility to other actors as compared to the control group (see Table 3). Thus, Hypothesis 2 was not supported. However, the interaction between sustainable group and climate change concern accounted for significantly more variance in the model (R^2 change $= .096$, $p < .001$), indicating that there is potentially a significant moderation between sustainable group and climate change concern on displacement of responsibility ($b = -0.23$, $p = .043$). To investigate this further, a moderation model (PROCESS v3.5 Model 1 by Andrew F. Hayes) was run to examine the effect. The interaction was probed by testing the conditional effects of the sustainable group at three levels of the moderator: one standard deviation below the mean, at the mean, and one standard deviation above the mean. The analysis revealed that there is a significant association found between participants who have scored low on climate change concern (1 SD below the mean) and the displacement of responsibility (see Table 4). Findings for individuals with average to high levels of climate change concern in the sustainable group indicated non-significant results. Thus, the analysis partially supports the assumption that participants who rate low on climate change concern are more likely to engage in moral disengagement strategies, notably the displacement of responsibility (H5).

As previously addressed, minimization of negative consequences and advantageous comparison components have loaded as one underlying factor of moral disengagement labeled

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refusal to acknowledge harm (see Table 1). The regression analysis has revealed that Hypothesis 3 and 4 were not supported. There is a direct negative effect of both the sustainable ($b = -0.46$, $p < .001$) and non-sustainable ($b = -0.25$, $p = .030$) groups on individuals' refusal to acknowledge harm, which indicates that exposure of both types of flight ads leads to acknowledgement of harm (see Table 5). The data also highlights that regardless of the climate change concern scores individuals obtained, the effect is applicable to all participants as indicated by the non-significant interaction term (sustainable group: $b = -0.05$, $p = .553$; non-sustainable group: $b = -0.02$, $p = .801$).

DISCUSSION

The objective of this study was to measure the effects of sustainable and non-sustainable flight advertisements on moral disengagement. The research also aimed to investigate whether exposure to these advertisements, moderated by participants' climate change concerns, trigger moral disengagement of individuals in different ways. The study is underpinned by the theory of moral disengagement which provides the rationale for interpretation. In order to gain an insight into air travelers perceptions of flight advertisements, an online survey experiment was conducted and the mixed findings are further elaborated on below.

By zooming in on the issue of climate change which has become a major topic of discussion in the society, this study offers a unique insight into how the millennial generation perceives flight advertisements from some conceivable angles. Approaching this discussion from the perspective of the theory of Albert Bandura that illustrates how individuals oftentimes find justifications to their actions, the researcher examines the results that are partially in line as well as different from previous studies and this study's initial expectations.

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The findings indicate that flight advertising is partially effective in triggering two strategies of moral disengagement, namely moral justification and the displacement of responsibility to other actors. In respect to moral justification, the study demonstrates that participants on average tend to agree that it is all right to travel the world. This is sensible considering the rather international sample and prevalence of people in their twenties and thirties. This parallels previous findings which highlight the importance of mobility and building social capital with people in other parts of the world (Randles and Mander, 2009; Skrbis, Woodward and Bean, 2014). However, the evidence that exposure to generic flight ads which emphasize the desirable aspect of flying such as to discover new places (non-sustainable group), made participants morally justify their flying behavior less than those that emphasize the environmental impact of flying (sustainable group) was unanticipated. That means that even though people are exposed to appealing advertisements that advise them to travel to divine places in comparison to advertisements that stress responsibility to the environment, people resist the former more. One possible explanation for this finding could be the impact of reactance to promotional content which is not uncommon in advertising research. There are numerous studies that discuss how advertising can prompt psychological reactance which results in the boomerang effect, in other words, negatively affecting persuasion. Researchers explain that at the core of reactance theory lies the desire to preserve freedom of choice (Edwards, Li, and Lee, 2002; Fitzsimons and Lehmann, 2004). In the case that participants think they are being tricked to give a certain answer or they know what the study tries to measure, they might perceive that their autonomous freedom is threatened and that is why they refuse to comply and do the opposite. In addition, the sample is composed of highly educated individuals who most likely are familiar with research. Specifically, respondents that came

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from the survey-sharing platforms and are themselves conducting research, might have a different approach to answering surveys.

The study also finds that regardless of the experimental group respondents were in, people tend to displace the responsibility to others. It would appear that this finding supports the theory that attribution of blame to other actors and entities enables people to accept climate change and disregard their role as contributors (Bandura, 2016). However, the examination of the graph of the moderation model highlights that even highly climate change concerned individuals shift the responsibility a great deal. One possible reason for such result could be the measurement of this construct and the nature of questions asked. In particular, the displacement of responsibility did not imply that the action of flying needs to be minimized or that solely other parties are responsible for the negative impact of flying. The questions addressed, on the other hand, the extent to which it is important that various actors take immediate action to reduce the impacts of climate change. Therefore, due to the phrasing of questions, participants that have strong climate change concerns shifted the responsibility, indicating that governments, the aviation sector, industry and commerce should take responsibility in reducing negative impact on the environment. The only factor that changes is when participants who avoid reckoning with environmental issues, displace the responsibility to others. In this case, people are presented with flight ads that highlight the importance of taking a sustainable flight and their response to such message leads to displacement of responsibility.

To test another strategy, the researcher measured the degree to which participants refuse to acknowledge the harm of flying. The findings indicate that exposure to both types of flight advertisements (sustainable and non-sustainable) leads to heightened acknowledgement of

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harm. Specifically, individuals who were exposed to advertisements that stress the environmental impact of flying, were found to acknowledge harm more than those who were presented with typical flight ads that showcase attractive travel destinations. This finding is sensible for the sustainable group, however, not consistent for the non-sustainable. Based on the previous studies it was hypothesized that when people are presented with appealing pictures of delightful vacation spots, they would rather refuse to acknowledge harm as the pictures activate their desire to travel (Bandura, 2016). In addition, it was found that there was no difference between participants who score low or high on climate change concern neither in regards to moral justification nor in the refusal to acknowledge harm.

Nonetheless, it should be noted that the sample appears to represent more highly concerned individuals in regards to climate change. That is, regardless of the experimental group, participants on average regarded climate change as a serious issue which indicates that the effect is found for everybody. Even individuals who fell under the low category on climate change concern, in reality are situated more in the middle on the issue which means they are not unconcerned but rather considerate.

LIMITATIONS AND FUTURE RESEARCH

Several limitations of this study need to be considered. Firstly, online experiments do not mimic a natural setting. As a result, participants may provide unusual answers because they are aware that they are taking part in research. However, the aim of the study was not to provide fully generalizable results, rather to obtain insight into individuals' perspectives when it comes to flying and what it causes to the environment. Secondly, the sample in this study consisted of individuals from many different countries across the globe that provided results which could have been influenced by certain cultural elements. In addition, the age group was limited to a

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certain sub-sample of the population. Therefore, future studies could include different age groups and explore their point of views. Nevertheless, millennials represent the majority of travelers worldwide and hence it is most relevant to look into their perceptions (UNTWO, 2017). As another point, the study presented only a limited number of stimuli to participants. Thus, the results cannot be generalized for all flight advertisements as there are numerous of different representations of flying – from relaxation, business trips, to going on vacations with family or visiting relatives for holidays. Future studies should consider an inclusion of other frames in order to see if and how they affect moral disengagement. Finally, participants could have been influenced by their current situation when the survey took place. At the time when respondents provided their answers they were under various levels of lockdown due to the Covid-19 outbreak. During that time people could not fly as all the flights across the world were cancelled. Therefore, this factor could have influenced the results as it is clear that the materials they were exposed to represented an unrealistic scenario of taking a flight or going on vacation. With that in mind, it is possible that it was easier for participants to resist the stimuli and provide responses they would not have under normal circumstances.

CONCLUSION

To conclude, this study provides an understanding of how millennials perceive flight advertisements. The results from the survey show that there is actual awareness about climate change and environmentally-damaging practices and behaviors. While individuals are still inclined to morally justify their flying habits, they in fact view them as detrimental which might potentially translate into improved environmental behavior in the future. These findings present a step forward on a societal level in suggesting that the more air travelers reckon growing ecological impact, the more their desirable consumption patterns are in conflict with their moral

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code. However, it needs to be noted that these findings were uncovered during an unprecedented time of a global pandemic. Taking this insight as a point of departure, the researcher encourages future investigations into this fruitful subject to verify these effects in order to establish that air travelers actually differentiate based on their environmental consciousness.

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Appendix A: Tables

Table 1

Factor Analysis on Moral Disengagement Mechanisms (Oblimin Rotation)

	Component loadings	M	SD	α
Refusal to Acknowledge Harm				.88
My actions make no difference to climate change.	.59	3.61	1.67	
I cannot do much for the environment by not flying.	.78	4.02	1.60	
I think I can make a positive contribution to climate change by cutting down air travel.	.69	3.81	1.44	
It is pointless to reduce air travel as an individual.	.67	4.30	1.63	
I can protect the climate by giving up air travel.	.69	4.28	1.39	
When you think of the environmentally harmful lifestyle of others, air travel is of little consequence.	.77	3.79	1.56	
Flying once a year is not so bad compared to actions that others take day after day.	.74	4.77	1.41	
There are far more climate-damaging behaviors than flying.	.75	5.51	1.17	
Displacement of Responsibility				.95
It is important for the aviation industry to take immediate action to reduce the CO2 pollution caused by air traffic.	.92	6.25	1.19	
It is important for the industry and commerce to take immediate action to reduce the CO2 pollution caused by air traffic.	.94	6.39	1.13	
It is important for the aviation industry to act immediately to reduce the consumption of fossil fuels.	.91	6.24	1.19	
It is important for the industry and commerce to act immediately to reduce the consumption of fossil fuels by aviation.	.95	6.44	1.11	

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Table 1 *(Continued)*

	Component loadings	*M*	*SD*	*α*
It is important that I myself take immediate action to reduce the CO2 pollution caused by air traffic.	Eliminated			
It is important for the government to take immediate action to reduce the CO2 pollution caused by air traffic.	Eliminated			
It is important that I myself act immediately to reduce the consumption of fossil fuels.	Eliminated			
It is important for the government to act immediately to reduce the consumption of fossil fuels.	Eliminated			
Moral Justification				.83
It is okay to fly to get to know the world in all its facets.	-.52	5.60	1.09	
It's okay to fly because everyone should learn to understand foreign cultures.	-.50	5.62	1.07	
Only those who sometimes fly to another country can see beyond their own nose.	Eliminated			
Air travel keeps up the bonds to distant friends and families.	-.83	5.77	1.04	
Without air travel, you cannot really be there for certain friends and family.	-.88	5.50	1.40	
Only through regular air travel a person can maintain a good relationship with distant friends and relatives.	-.77	4.73	1.59	

Note. N = 254

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Table 2

Linear Regression of Flight Advertisements on Moral Justification

	b	*SE*	*p-value*
Sustainable group	-0.22	0.13	.077
Non-sustainable group	-0.33	0.12	.008
Climate Change Concern	-0.24	0.07	.001
Sustainable group x Climate Change Concern	0.008	0.10	.932
Non-Sustainable group x Climate Change Concern	0.03	0.09	.744
Gender	0.09	0.11	.418
Age	0.01	0.006	.052
Air Travel Frequency	0.01	0.004	.003
Ad Evaluation	0.15	0.05	.006
R^2	.23		
Adjusted R^2	.21		

Note: N = 254; Control group was taken as the reference group

Table 3

Linear Regression of Flight Advertisements on Displacement of Responsibility

	b	*SE*	*p-value*
Sustainable group	0.18	0.15	.225
Non-sustainable group	-0.16	0.14	.273
Climate Change Concern	0.21	0.08	.013
Sustainable group x Climate Change Concern	-0.23	0.11	.043
Non-Sustainable group x Climate Change Concern	0.13	0.11	.243
Gender	0.14	0.14	.294
Age	-0.02	0.007	.005
Air Travel Frequency	0.01	0.005	.010
Ad Evaluation	0.25	0.06	<.001
R^2	.29		
Adjusted R^2	.27		

Note: N = 254; Control group was taken as the reference group

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Table 4. *Moderated Regression Model: Effect of the sustainable group on displacement of*

responsibility of participants at different levels of climate change concern

Moderator: Climate Change Concern	Conditional indirect effect at mean and ±1 SD			
	Effect	Boot *SE*	95BCI-LL	95BCI-UL
Low, -1 SD	.48	.21	.0560	.9049
Average, mean	.18	.15	-.1123	.4753
High, +1 SD	-.12	.20	-.5178	.2830

Note: *N = 254;* The indirect effects were calculated based on 1,000 bootstrap samples.

Table 5

Linear Regression of Flight Advertisements on Refusal to Acknowledge Harm

	b	*SE*	*p-value*
Sustainable group	-0.46	0.12	<.001
Non-sustainable group	-0.25	0.12	.030
Climate Change Concern	-0.51	0.07	<.001
Sustainable group x Climate Change Concern	-0.05	0.10	.553
Non-Sustainable group x Climate Change Concern	-0.02	0.09	.801
Gender	-0.07	0.11	.503
Age	0.003	0.005	.507
Air Travel Frequency	0.01	0.004	<.001
Ad Evaluation	0.12	0.05	.018
R²	.53		
Adjusted *R²*	.52		

Note: N = 254; Control group was taken as the reference group
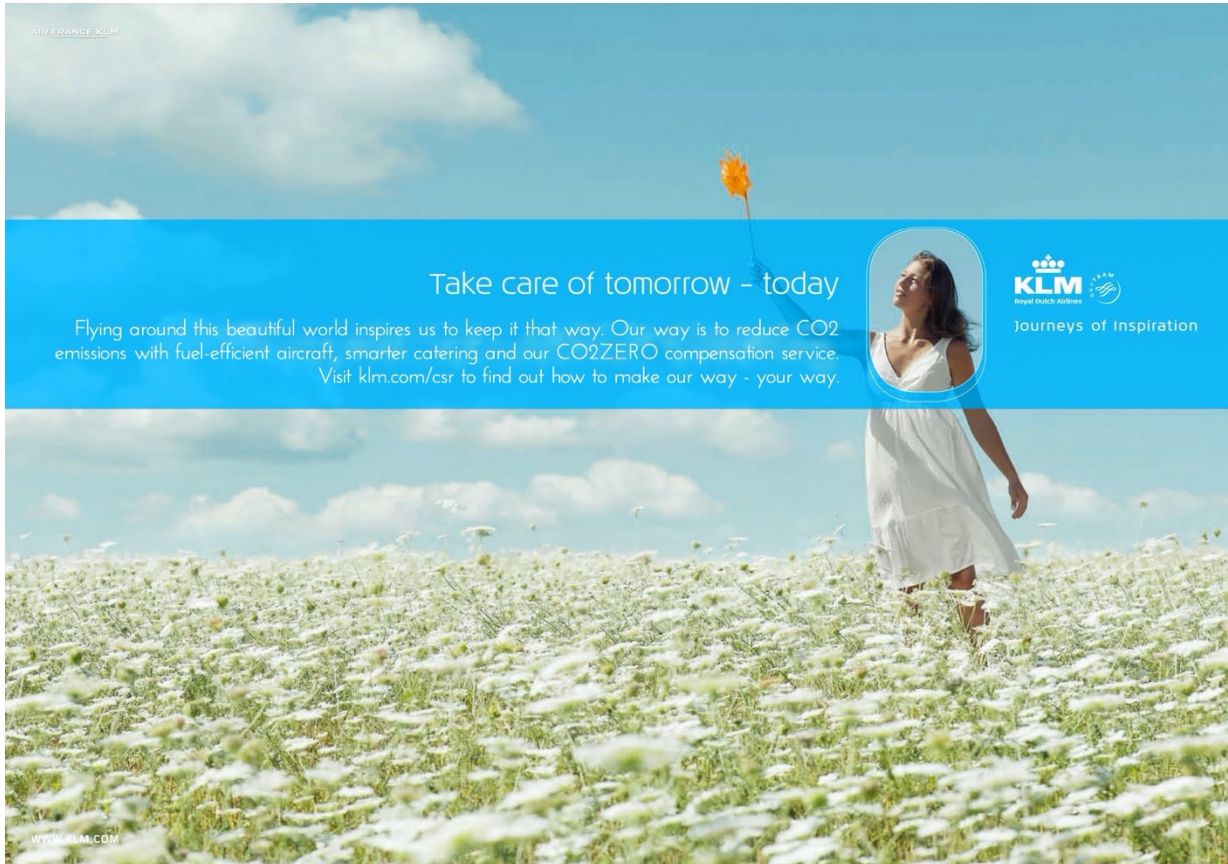
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Appendix B: Stimulus Material

Figure 2. Stimuli of flight advertising in the sustainable group

To fly or not to fly?
The role of moral disengagement on individuals' flying behavior
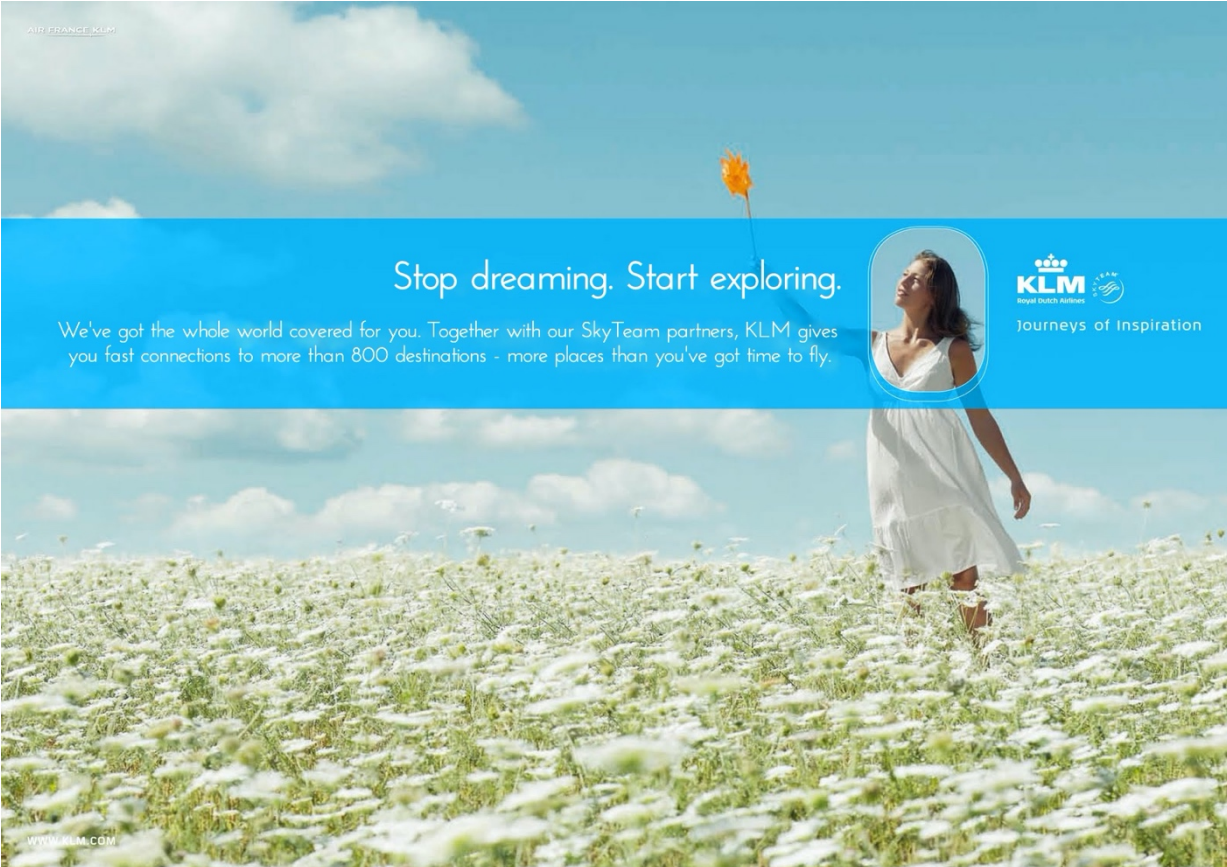
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Figure 3. Stimuli of flight advertising in the non-sustainable group
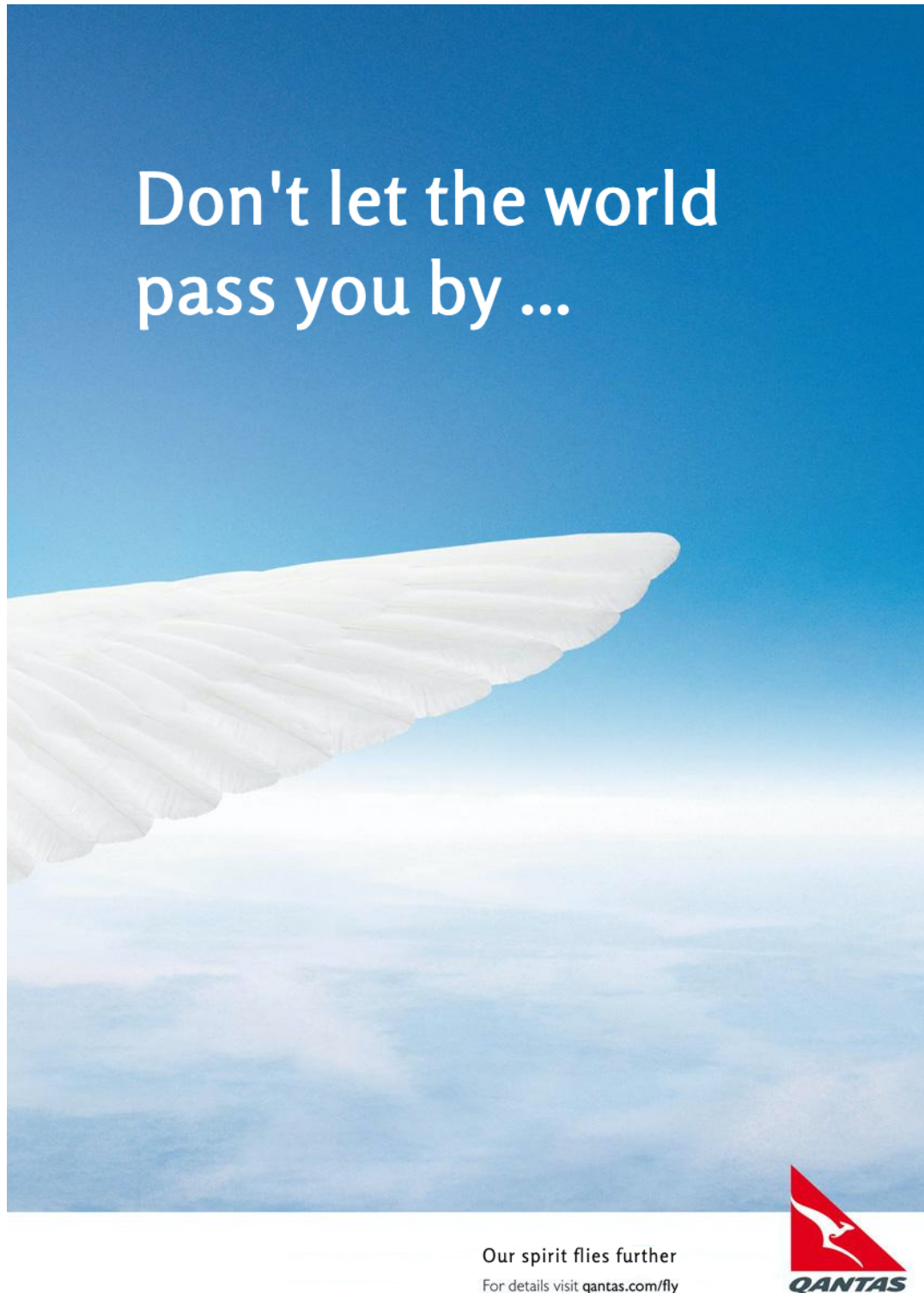
To fly or not to fly?
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To fly or not to fly?
The role of moral disengagement on individuals' flying behavior

Appendix C: Questionnaire

Welcome!

Dear Participant,

Welcome and thank you for taking the time to participate. In this study we will present media content and ask you some questions about your opinions and attitudes. Please read each question carefully and remember that there are no right or wrong answers, so please be as honest as possible. The entire study will take no longer than 10 minutes. Please use a laptop, computer, or tablet to answer the survey, since you will be asked about your opinion of visuals, which you have to see clearly on your screen.

Before you start with the survey, we would like to draw your attention to the following points. These concern your personal rights in the context of this survey:

Your participation is anonymous, it cannot be traced back to individual respondents. Your data will be used exclusively for scientific purposes.

We ask you not to use the back button during the survey under any circumstances, as this could lead to problems with data collection.

Addendum: Data Protection Notice

The protection of your personal data is of particular concern to me in this survey. Your data will therefore be collected and processed exclusively on the basis of the legal provisions (§ 2f Abs 5 FOG).

This survey is conducted in the course of writing a scientific master thesis at the University of Vienna. The data can be viewed by the course administration or by the supervisor or reviewer of the scientific work for the purpose of performance assessment. In addition, the data can be used for scientific publications by the author of the Master thesis and the supervisor and the anonymized dataset can be made accessible to the scientific community in accordance with open science initiatives. According to Art 89 para. 1 DSGVO, the collected data may be stored without restriction.

Participants have the right to be informed by the person(s) responsible for this study to the personal data collected and the right to correct, delete, restrict the processing of the data as well as a right to object to the processing and the right to data transferability.

If you have any questions regarding this study, please send an email to Maria Kudryashova, mariakudryashova@yahoo.com.

For fundamental legal questions in connection with the DSGVO/FOG and student research, please contact the data protection officer of the University of Vienna, Dr. Daniel Stanonik, LL.M. (verarbeitungsverzeichnis@univie.ac.at). You also have the right of appeal to the data protection authority (e.g. via dsb@dsb.gv.at).

Please click below that you understand your rights and want to proceed.

First of all, we would like to know how you have spent your holidays in the past three years. Please read and answer the following questions.

How often do you choose the following means of transport to travel abroad?

	Never						Always
Rail	○	○	○	○	○	○	○
Car	○	○	○	○	○	○	○
Bus	○	○	○	○	○	○	○
Airplane	○	○	○	○	○	○	○

If you are not sure about the exact number, please give an estimate.

How often have you gone on holidays by plane in the last three years?	[ ]
How often have you taken flights for professional reasons in the past three years?	[ ]

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Now we have some questions about you. Please indicate how much the following sentences apply to you:

	Strongly Disagree						Strongly Agree
Outdoor cycling is better than the gym.	○	○	○	○	○	○	○
Climate change contributes to extreme weather events.	○	○	○	○	○	○	○
People should leave important decisions in society to their leaders.	○	○	○	○	○	○	○
When talking to someone, I always listen carefully to what the other person says.	○	○	○	○	○	○	○
I have occasionally thrown litter away in the countryside or on to the road.	○	○	○	○	○	○	○
Even if I am feeling stressed, I am always friendly and polite to others.	○	○	○	○	○	○	○
Climate change is a serious problem.	○	○	○	○	○	○	○
It has happened that I have taken advantage of someone in the past.	○	○	○	○	○	○	○
Traditions should definitely be carried on and kept alive.	○	○	○	○	○	○	○
It is important to do something about climate change as soon as possible.	○	○	○	○	○	○	○
We should be grateful for leaders telling us exactly what to do.	○	○	○	○	○	○	○
Sometimes I only help people if I expect to get something in return.	○	○	○	○	○	○	○
Climate change is a serious concern for me.	○	○	○	○	○	○	○
It's always best to do things in the usual way.	○	○	○	○	○	○	○

Next you will be presented with three (3) advertisements. Please take your time and look at the ads carefully. We will ask you for your evaluation of the ads later on.

Please indicate which adjectives apply to the advertisements you have just seen.

Unconvincing	○	○	○	○	○	○	○	Convincing
Unattractive	○	○	○	○	○	○	○	Attractive
Uninteresting	○	○	○	○	○	○	○	Interesting
Negative	○	○	○	○	○	○	○	Positive
Not credible	○	○	○	○	○	○	○	Credible
Not professional	○	○	○	○	○	○	○	Professional

Thank you for your evaluation of the ads. Now we would like to ask you about your attitudes toward flying more generally. Please indicate how strongly you agree or disagree with the following statements.

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Please indicate how strongly you agree or disagree with the following statements.

	Strongly Disagree						Strongly Agree
When you think of the environmentally harmful lifestyle of others, air travel is of little consequence.	○	○	○	○	○	○	○
Flying once a year is not so bad compared to actions that others take day after day.	○	○	○	○	○	○	○
There are far more climate-damaging behaviors than flying.	○	○	○	○	○	○	○
It is okay to fly to get to know the world in all its facets.	○	○	○	○	○	○	○
It's okay to fly because everyone should learn to understand foreign cultures.	○	○	○	○	○	○	○
Only those who sometimes fly to another country can see beyond their own nose.	○	○	○	○	○	○	○
Air travel keeps up the bonds to distant friends and families.	○	○	○	○	○	○	○
Without air travel, you cannot really be there for certain friends and family.	○	○	○	○	○	○	○
Only through regular air travel a person can maintain a good relationship with distant friends and relatives.	○	○	○	○	○	○	○
My actions make no difference to climate change.	○	○	○	○	○	○	○
I cannot do much for the environment by not flying.	○	○	○	○	○	○	○
I think I can make a positive contribution to climate change by cutting down air travel.	○	○	○	○	○	○	○
It is pointless to reduce air travel as an individual.	○	○	○	○	○	○	○
I can protect the climate by giving up air travel.	○	○	○	○	○	○	○

How important is it that the following actors take immediate action to reduce the CO2 pollution caused by air traffic?

	Not at all						Extremely Important
The aviation industry	○	○	○	○	○	○	○
Industry and commerce	○	○	○	○	○	○	○
I myself	○	○	○	○	○	○	○
The governments	○	○	○	○	○	○	○

How important is it that the following actors act immediately to reduce the consumption of fossil fuels by aviation?

	Not at all						Extremely Important
Industry and commerce	○	○	○	○	○	○	○
I myself	○	○	○	○	○	○	○
The governments	○	○	○	○	○	○	○
The aviation industry	○	○	○	○	○	○	○

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The advertisements I have just seen...

	Strongly Disagree						Strongly Agree
promoted flights with little environmental impact	○	○	○	○	○	○	○
promoted a bank	○	○	○	○	○	○	○
were created to seduce people to travel by air	○	○	○	○	○	○	○
made air travel attractive	○	○	○	○	○	○	○
promoted sustainable options for flying	○	○	○	○	○	○	○
promoted secure banking apps	○	○	○	○	○	○	○

Thank you. We are almost there – just some questions about you.

What is your gender?

○ Male
○ Female
○ Prefer not to answer

What is your age?

[   ]

What is your country of residency?

Country: [   ]

What is the highest level of education you have completed?

○ No schooling completed
○ High school
○ Bachelor's degree
○ Master's degree
○ Doctorate's degree
○ I prefer not to answer

Which device did you choose to fill out this survey?

○ Smartphone
○ Tablet
○ Laptop/Computer

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Thank you for taking the time to complete this survey!

Your responses are crucial to the results of my Master Thesis. Without your help, this project would not be possible.

My Master Thesis centers around the question how advertisements of air travel can make air travel more desirable, but at the same time affect our moral evaluation of air travel and its environmental consequences. To test this question, participants were presented with either three ads that advertise flights, three ads that advertise so-called green flights, or a control group that saw ads that were unrelated to flying. The ads in the flight ad and green flight ad condition were manipulated to serve the purpose of this study. If you have any further questions in regard to this research, please contact me: mariakudryashova@yahoo.com

Thank you again for your participation.