Article

Fasting Plastic—The Role of Media Reports in a ‘Window of Opportunity’ to Reduce Plastic Consumption

Berend Barkela *, Kristen Werling, Signe Elisa Filler and Lea Marie Heidebreder

Interdisciplinary Research Group for Environmental Studies, Faculty of Psychology,
Institute for Communication Psychology and Media Education, University of Koblenz-Landau,
76829 Landau, Germany; werling@uni-landau.de (K.W.); fill7109@uni-landau.de (S.E.F.);
heidebreder@uni-landau.de (L.M.H.)

* Correspondence: barkela@uni-landau.de

Abstract: To tackle the problems of plastic pollution in the environment, the reduction of plastic consumption plays a major role. To initiate behavior changes in consumption patterns, the content and time point of interventions are key factors. Furthermore, current studies have outlined the effect of role models on others’ behavior. Thus, this paper investigates the impact of role models in media reports on efficacy beliefs and consumption behavior using an intervention. Two online studies with quoted samples, in the fasting period Lent (Study 1: $n = 656$) and a random period (Study 2: $n = 947$), were conducted. Both studies included two measurement points to investigate the change in plastic consumption over time. In study 1 (during the Lent period), participants were divided into one experimental group that viewed a media report including information on the plastic problem and role-model-like behavior for reducing plastic consumption and one control group that viewed a media report including only information on the plastic problem. In study 2 (during a random period), an additional control group was added where participants did not view a media report at all. Results revealed that a decrease in plastic consumption during the fasting period could be found; however, a decrease in plastic consumption outside of the fasting period could not be found. Media reports that addressed plastic pollution and role models avoiding plastic had no relevant impact on participants’ efficacy beliefs or plastic consumption intention or behavior.

Keywords: plastic consumption; window of opportunity; behavior change; intervention study

Citation: Barkela, B.; Werling, K.; Filler, S.E.; Heidebreder, L.M. Fasting Plastic—The Role of Media Reports in a ‘Window of Opportunity’ to Reduce Plastic Consumption. *Sustainability* **2021**, *13*, 11807. <https://doi.org/10.3390/su132111807>

Academic Editors: Arminda Paço,
Jana Sophie Kesenheimer and
Tobias Greitemeyer

Received: 30 July 2021

Accepted: 12 October 2021

Published: 26 October 2021

Publisher’s Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Copyright: © 2021 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

A key challenge for individual pro-environmental behavior is peoples’ habits. Habits can be extremely difficult to break in order to change one’s behavior, and interventions aimed at sustainability should succeed in motivating people to overthink and change their habits [1]. One positive determinant of pro-environmental behavior in this context is fasting periods, such as Lent. These periods can be used as a ‘window of opportunity’, in which habitual behavior tends to be reconsidered and is more likely to change than at an arbitrary period in time [2]. Other important factors for people considering behavioral change are efficacy beliefs towards carrying out a behavior (i.e., capability to perform a behavior) and information they receive about the reasons and possible ways to change behavior [3]. Mass media could play an important role here since people receive information about their environment primarily from the media [4]. Based on these points, the aim of the studies in this paper is to investigate the role of Lent as a ‘window of opportunity’ as well as the role of media reports showing positive role models successfully implementing pro-environmental behaviors in encouraging more environmentally friendly behaviors.

1.1. Environmental Problem: Plastic Consumption

Plastic waste is a serious problem in the modern world. Since plastic waste is not biodegradable, it accumulates in landfills or natural environments [5], causing serious

problems for ecological systems including the ingestion of plastic debris by organisms and animals and thus transferring potentially harmful chemicals to wildlife [6]. According to Heidebreder, Bablok, Drews, and Menzel [7] there is a high public awareness of this issue. Nevertheless, the demand for plastic remains high while only a small percentage of plastic is recycled. Plastic production increased to almost 360 million tons worldwide in 2018. Almost 62 million tons were produced in Europe, of which 40% consisted of plastic packaging [8]. To address the problem of plastic waste, the United Nations proposed to “substantially reduce waste generation through prevention, reduction, recycling, and reuse” by 2030 as one of its Sustainable Development Goals [9]. One approach to reducing plastic waste is through the change of individual consumption behavior, especially the reduction of single-use fossil-based plastic and the change towards environmentally sound alternatives [10]. A recent review, investigating the role of individual behavior to reduce individual plastic consumption found that people routinely consume plastic although they are aware of the environmental risks. The inability to overcome habits was identified as a major factor preventing individuals from reducing their plastic consumption [7]. As plastic consumption and the resulting waste of plastic consumption are considered to be among the most severe problems for the planet [11], the studies in this paper focus on determinants that are relevant to overcome routinized plastic consumption behavior. Therefore, we look at (1) fasting periods as a ‘window of opportunity’ to change consumption habits and (2) the role of mass media in providing information about sustainable behavior using the presentation of role models as an example.

1.2. Changing Consumption Habits

Consumption behavior is often performed as a habit [12]. It happens automatically, recurring, and without conscious thinking [13]. While habits can facilitate daily life, they can become a barrier when people aim to change their consumption behavior. Changing habits need time and repetition [14], conscious planning [15], or a change in stable circumstances [16]. For example, new infrastructure can lead to a change in mobility behavior [17] or having a baby can open a ‘window of opportunity’ to change consumption towards buying more ecological food [18]. Even the attribution of a campaign or initiative for change can create a ‘window of opportunity’ for behavior change, such as a plastic-free month [19] or religious fasting periods used to reduce plastic consumption [2].

Fasting is practiced in different cultures and includes typically the abstention from specific foods and partly other things such as smoking (Islam), luxuries, driving, and shopping (Judaism) for a set time period [20]. In other words, fasting means a temporal, significant change in consumption behavior. This could be used as an entry for more sustainable behavior—especially if there is already the willingness to do so. One fasting practice is Lent—a Christian fasting period in preparation for the celebration of Easter. Lent is to remind Christians of Jesus Christ, who is said to have fasted for 40 days in the wilderness before gathering disciples. According to Christian tradition, eggs, meat, dairy products, and alcohol should be avoided for approximately seven weeks before Easter [21]. As a ‘window of opportunity’, Lent is interesting since in some modern societies new and more secular interpretations of Lent have emerged [20]. In Germany, fasting is practiced in all age groups and milieus. Thereby, most people do so during Lent—even among undenominational and un-religious people. Despite the religious background, reasons for fasting often tend to be secular [22]. Instead, fasting motivations such as one’s own well-being, criticism of society and consumption as well as environmental and nature protection are in the foreground. Accordingly, new fasting practices, in addition to traditional practices, have been established (e.g., sweets, driving a car, or social media) [22–24]. Furthermore, Lent has already been shown as an effective opportunity to reduce plastic consumption [2].

Hence, regardless of the religious motivation, Lent is an externally defined period during which many people fast, also for ecological reasons. Relative to random periods, traditional fasting periods make it, therefore, easier to consider a—at least temporal—change in sustainable behavior [24]. Such a change in (consumption) behavior for several

weeks is enough time to develop new habits [14]. Furthermore, it is conceivable that during this time, new everyday tricks will be acquired that will facilitate the new behavior in the long term (e.g., finding alternative plastic-free shops). Previous research has already shown a stable reduction in plastic consumption even after people had fasted during Lent [2].

Accordingly, the first hypothesis of our study is proposed as follows.

Hypothesis 1 (H1). *Lent is a ‘window of opportunity’ to change consumption behavior such that people are willing to fast plastic during lent to tackle plastic pollution.*

Apart from habits, individuals’ plastic consumption is also affected by the information presented through the media on how to behave in a sustainable manner. This information from the media can impact people’s efficacy beliefs and, thereby, their intention to reduce their plastic consumption. Thus, the following two sections address how efficacy beliefs in individuals’ plastic consumption reduction can be strengthened.

1.3. Communication of Sustainability in Media Reports

In communicating sustainability, mass media play an important role. Not only do people receive information about unsustainable consumption through mass media, the media also provide information about environmentally friendly and sustainable behavior [25]. A recent content analysis of media reports on plastic has shown that most media reports mention sustainability measures and use mediation methods to disseminate these [26]. Thus, mass media and public broadcasting in particular take on an educational mandate [27] and not only report on plastic risks but also give recommendations and advice on solutions to achieve sustainable behavior regarding plastics. Therefore, media provide information on how to achieve sustainability but also use mediation methods such as elucidation, tips, or role models, which demonstrate how individuals can contribute to achieving sustainability [26,28]. The mediation method of presenting role models in a media report (i.e., the behavior of celebrities or ordinary citizens is shown as exemplary) demonstrates how sustainable behavior can be carried out by ‘normal’ individuals [28]. Presenting role models in a media report can lead to acceptance of content [29], understanding and engagement [30], as well as motivation, interest, elaboration, and transfer [31]. However, the effectiveness of this method of additionally using role models to promote pro-environmental and sustainable behavior has yet to be investigated. With our current studies, we aim to answer this question and investigate if media reports presenting role models for pro-environmental behavior can strengthen individuals’ efficacy beliefs.

1.4. Strengthening Efficacy Beliefs via Role Models

Self-efficacy represents people’s beliefs in their capabilities to exercise control over their own functioning and events that affect their lives [32]. Moreover, self-efficacy is linked to pro-environmental behavior [33–38]. As one individual’s behavior can sometimes seem like a drop in the ocean, it is helpful when referring to the capability of a group to increase individuals’ willingness to engage in pro-environmental behavior. This is also called collective efficacy beliefs (i.e., the belief of a group member to reach the desired goals within the group) [39]. Collective efficacy beliefs have been shown to predict private and public pro-environmental behavior [34,38,40]. Based on Bandura’s [39] self-efficacy theory, self-efficacy is the link between an individual actor and his or her behavior (i.e., “I feel capable to reduce my plastic consumption.”). Furthermore, Hamann and Reese [35] differentiate the concept of self-efficacy with their study looking at collective goal efficacy as the link between the behavior and a goal (i.e., “Reduction of our plastic consumption can solve the plastic pollution problem.”). Based on this, not only is it important to take self-efficacy beliefs regarding how able one views his- or herself to carry out pro-environmental behaviors but also collective efficacy beliefs on how one believes that ‘we’ as a society can achieve pro-environmental and climate change reduction goals through ‘our’ pro-environmental behaviors.

As mentioned above, efficacy beliefs have been shown to predict pro-environmental behaviors. Thus, it is important to consider ways in which efficacy beliefs can be strengthened to potentially increase people's pro-environmental behaviors. One source of influence to develop people's efficacy beliefs is through social persuasion such as with role models. As Bandura [41] (p. 626) points out: "seeing people similar to oneself succeed by sustained effort raises observers' beliefs that they too possess the capabilities to master comparable activities to succeed". Furthermore, mass media not only report on environmental risks (in this case plastic risks) but also give recommendations and advice on solutions to achieve sustainability [28]. The behavior of ordinary citizens as role models is an established narrative in mass media [26], and modeling sustainable behavior in mass media can lead to positive effects [3]. Thus, if mass media show role models demonstrating exemplary behavior, it is possible that efficacy beliefs regarding pro-environmental behaviors can be increased. Thus, this leads to our second hypothesis:

Hypothesis 2 (H2). *If people are not only informed about plastic pollution but also positive role models, their (a) self-efficacy beliefs, (b) collective efficacy beliefs, and (c) intention to avoid plastic increase.*

In the following sections, we present two studies that investigate (1) how individuals' plastic consumption habits can be influenced by using the Lent period as a 'window of opportunity' to reduce their plastic consumption and (2) how efficacy beliefs in individuals' plastic consumption reduction and intention to avoid plastic can be strengthened via the presentation of role models using a communication mediation method.

1.5. COVID-19 Outbreak

In early 2020, the global pandemic of coronavirus disease 2019 (COVID-19 pandemic) shook the world. At the beginning of March 2020, it had reached 59 countries worldwide [42]. At this point, the German Federal Government ordered several restrictions to limit the infections in Germany. The restrictions included the limitation of social contacts, retail, public services, and gastronomic businesses [43]. These measures fell exactly in the Lent and Easter period in 2020 and influenced people's consumption behavior. For example, stockpiling was observed in many countries around the world, some people bought more often canned food or ordered delivery food, and plastic packaging tended to be used more often for hygiene reasons [44–46]. On the contrary, some people also reported the opposite behavior, namely, to purchase even more fresh foods and less canned food, and cooked a lot themselves. In most cases, no change in consumption behavior in the individual product categories was reported [44]. Likewise, online shopping and the use of delivery services, which might also lead to an increase in the amount of plastic packaging, changed ambiguously, with both increases and decreases in Germany [45,46].

Therefore, it is difficult to assess if and how people's (plastic) consumption behavior during Lent and Easter in 2020 deviated from their usual or initial plans. However, the results of this study must be interpreted in this context, and we will classify them accordingly below.

2. Study 1: Plastic Consumption during Lent

In Study 1, we investigated if Lent can be a 'window of opportunity' in which people tackle plastic pollution by reducing plastic packaging consumption. Furthermore, we examined whether media reports can support such fasting behaviors by increasing self- and collective efficacy beliefs and the intention to avoid plastic during Lent if they not only address pollution but also include information about how to reduce plastic consumption by using positive role models as an example.

2.1. Materials and Methods

2.1.1. Sample

Participants were recruited via a commercial panel in a longitudinal design with two measurement points; $n = 889$ participants took part in the first survey before Lent (February 2020), and $n = 721$ (81%) also answered the follow-up survey six weeks later during Lent (March 2020). In total, $n = 65$ participants were excluded because of wrong answers to control questions or speeding. Hence, analyses referred to a final sample of $n = 656$ participants. Regarding age, 13% of the participants were between 18 and 29 years, 40% between 30 and 49 years, and 46% between 50 and 69 years old. Regarding gender, 50% of the participants were female and 49% male. Further, 23% of participants held a high school diploma and 27% a university degree. The place of residence was equally distributed with 30% of participants living in a rural area (<10,000 inhabitants), 33% in a medium-sized town, and 38% in a large city (>100,000 inhabitants).

2.1.2. Procedure

The participants answered two online surveys with an interval of six weeks. The first survey was conducted between 10 and 21 February just before Lent 2020. In this first questionnaire, all participants first answered questions about their *plastic consumption behavior* over the last two weeks. In a second part of the survey, participants were randomly divided into two experimental groups, namely, a *problem-only condition* ($n = 328$) and a *role model condition* ($n = 328$). The first group watched a short media report providing information about plastic pollution in the oceans and its consequences for flora, fauna, and human health. Participants in the role model condition watched the same report but in an extended version with an additional report about a couple who took the challenge to avoid plastic for a week. These reports were real news stories that were part of a previous content analysis [26] and are considered to be ideally representative of both the part informing about plastic pollution as well as role models showing sustainable behavior. For copyright reasons, we cannot publish the reports. A transcript and description are available from the authors upon request. After watching the respective report, participants answered simple control questions about the content of the reports and were immediately excluded if answered incorrectly (see Sample).

In the third part of the survey, all participants answered questions about their *self-efficacy beliefs* and *collective efficacy beliefs* to reduce plastic consumption and tackle the plastic pollution problem. Thereafter, they were encouraged to use Lent as an opportunity to avoid plastic, with the words: "Put your 'yellow sack' [special garbage bag for recycling plastic and metal garbage in Germany] on a diet. A lot of people (with or without a religious background) forego specific things during Lent, e.g., eating chocolate, watching TV, or drinking alcohol. During Lent, you can reduce plastic. We encourage you to use Lent to buy less plastic." After this statement, participants answered questions about their *intention to avoid plastic and reduce plastic consumption*.

Six weeks later, during Lent (17–27 March), participants were invited to a second survey in which we again asked about *plastic consumption behavior*. As already explained above, the first lockdown to mitigate the COVID-19 pandemic was announced in Germany shortly before our second survey wave began. Since we were concerned that this could affect our results, we added questions about the pandemic's impact on consumer behavior. A detailed participant flow chart can be found in the Supplementary Materials.

2.1.3. Measures

Plastic consumption behavior. In both waves, the participants were asked about their consumption behavior during the last two weeks. Participants were asked, for seven product categories (vegetables and fruits, fresh products, dry products, beverages, bakery products, sweets, and snacks as well as sanitary products), how much they bought wrapped in plastic. A 5-point Likert-scale was used, ranging from 1 = 'nothing was wrapped in plastic' to 5 = 'all was wrapped in plastic'. Additionally, the answer option-1 = 'not bought'

was given for each product category. The total score for each measurement was obtained by averaging the items, excluding the 'not bought' responses ($\alpha_{t1} = 0.71$, $M_{t1} = 3.3$, $SD_{t1} = 0.8$; $\alpha_{t2} = 0.78$, $M_{t2} = 3.1$, $SD_{t2} = 0.86$).

Self-efficacy. Participants stated to what extent they agreed with two statements about their beliefs that they can reduce their plastic consumption (e.g., "I think I can reduce my plastic consumption"). A 5-point Likert-scale was used (from 1 = 'disagree completely' to 5 = 'agree completely'; $\alpha = 0.93$, $M = 4.1$, $SD = 0.87$).

Collective efficacy. Participants stated to what extent they agree with two statements about their belief that collectively avoiding plastic can reduce environmental problems (e.g., "If we all use less plastic, we can reduce the environmental plastic problems"). Again, a 5-point Likert-scale was used (from 1 = 'disagree completely' to 5 = 'agree completely'; $\alpha = 0.83$, $M = 4.3$, $SD = 0.77$).

Intention to avoid plastic. After being encouraged to fast plastic during Lent, participants stated to what extent they were willing to reduce their plastic consumption during Lent (e.g., "During the next six weeks of Lent, I will try to consume only products without plastic packaging") on a 5-point Likert-scale (from 1 = 'disagree completely' to 5 = 'agree completely').

COVID-19 pandemic. In order to control for possible effects of the COVID-19 pandemic, an additional question was asked. The participants reported their agreement to six statements on a 5-point Likert-scale (from 1 = 'disagree completely' to 5 = 'agree completely'). This included, for example, whether they had bought more products of a specific type or more products in plastic packaging, and as well, whether the pandemic had affected their plans for Lent. Moreover, it was asked whether the pandemic had influenced their behavior in terms of nutrition or hygiene.

2.1.4. Statistical Analysis Methods

All analyses were conducted with R (version 1.4.1717 for macOS) using the packages readxl [47] and tidyr [48] for data management, psych [49] for descriptive analyses, and rstatix [50], lsmeans [51] and dplyr [52] for hypothesis testing. All data necessary for replication are presented in the Supplementary Materials.

For plastic consumption, a factorial mixed ANOVA [53] was conducted assuming an effect within subjects over time (before Lent and during Lent), a treatment effect between subjects (problem-only condition or role model condition), as well as their interaction effect (time*group). For posthoc comparisons, we used pairwise *t*-tests with Bonferroni correction. For *self-efficacy beliefs*, *collective efficacy beliefs*, and *intention to avoid plastic*, mean differences between participants in the problem-only condition and in the role model condition were tested for significance using independent (unpaired) *t*-tests [53]. For all analyses, we used an alpha level of $p < 0.05$.

2.2. Results

Table 1 presents means and standard deviations of the measured variables separately for media report conditions. The factorial mixed ANOVA revealed a medium effect over time ($F(1, 651) = 58.81$, $p < 0.001$, $\eta^2 = 0.08$), but neither an effect between the groups ($F(1, 651) = 0.06$, $p = 0.81$, $\eta^2 = 0.00$) nor an interaction effect ($F(1, 651) = 0.00$, $p = 0.97$, $\eta^2 = 0.00$) could be shown. Post-hoc comparisons showed a reduction of single-use plastic usage during Lent in both groups (problem-only condition and role model condition): participants who watched a media report about plastic pollution problem ($M_{t1} = 3.31$, $M_{t2} = 3.10$, $\Delta_{t1-t2} = 0.21$, $p < 0.001$) and participants who watched the extended version including role models who reduced their plastic consumption ($M_{t1} = 3.30$, $M_{t2} = 3.08$, $\Delta_{t1-t2} = 0.21$, $p < 0.001$).

Table 1. Means and standard deviations by experimental condition (Study 1).

	Problem-Only Condition (<i>n</i> = 328)		Role Model Condition (<i>n</i> = 328)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Plastic consumption before Lent (t1)	3.31	0.81	3.30	0.80
Plastic consumption during Lent (t2)	3.10 ¹	0.90	3.08 ¹	0.81
Self-efficacy	4.01	0.93	4.12	0.81
Collective Efficacy	4.32	0.77	4.25	0.77
Intention to avoid plastic	3.05	1.17	3.08	1.14

¹ significantly different to plastic consumption before Lent (t1).

Mean value comparisons with *t*-tests for self-efficacy ($t(654) = 1.63, p = 0.10$), collective efficacy ($t(654) = -1.14, p = 0.26$), and intention to avoid plastic ($t(654) = 0.34, p = 0.74$) did not reveal significant differences between participants who watched a media report about the plastic pollution problem and those that watched the extended version including role models.

Covid-19 Pandemic's Impact

Regarding the impact of the COVID-19 pandemic, the highest level of agreement was with the statement that the participants paid more attention to hygiene than usual; 62% rather or completely agreed with this point. On the other hand, only 12% rather or completely agreed with the statement, “The corona virus has disrupted my plans for the Lent”, and 52% disagreed completely. Participants also rather disagreed with the statement that they had bought more groceries ($M = 2.38, SD = 1.26$), more sanitary products ($M = 2.09, SD = 1.16$), or more products in plastic packaging ($M = 2.07, SD = 1.14$) because of the COVID-19 virus. Similar answers were given to the question of whether they cooked more often and produced things on their own ($M = 2.35, SD = 1.29$). In light of these results, it appears that although plans for Lent were sometimes upset, people tended not to change their shopping behavior significantly enough to be relevant for our results.

2.3. Study 1 Discussion

Study 1 analyzed if people during Lent, who watched a media report showing role models reducing their plastic consumption, reduced their own plastic consumption behavior. Participants in study 1 were encouraged to use the Lent period as a time to reduce their plastic consumption. After the control group watched the media report about the plastic pollution problem and the experimental group watched the extended version showing role models reducing their plastic consumption, both the experimental and control groups showed high values in self-efficacy and collective efficacy beliefs. Furthermore, both the experimental and control groups decreased their plastic consumption during Lent. Accordingly, the assumption can be supported that Lent is a ‘window of opportunity’ to reduce plastic consumption. However, exposure to role models does not seem to have a relevant influence on participants’ intention to reduce plastic consumption during Lent or participants’ corresponding behavior of actually reducing their plastic consumption. Moreover, it remains unclear whether the decrease in plastic consumption during Lent was due to the media reports or other sources. In order to be able to better clarify the results, we prepared a second study to address the following two points: First, this second study took place in a random period to clarify the effect of Lent as a ‘window of opportunity’. Second, we included a further control group where participants did not watch any media report. This second point allowed us to evaluate if plastic consumption reduction was affected by the media report versions (problem-only condition and role model condition) or due to possible external factors.

3. Study 2: Plastic Consumption in a Control Period

In Study 1, we investigated if Lent can be a ‘window of opportunity’ in which people tackle the plastic pollution problem by reducing plastic packaging consumption. Furthermore, we expected that media reports have stronger effects on self-efficacy beliefs, collective efficacy beliefs, and the intention to avoid plastic during Lent if they not only address the plastic pollution problem but also include information about how to reduce plastic consumption by using positive role models as an example. We build upon Study 1 in Study 2 where we investigated if people’s plastic packaging consumption was stable outside of Lent and without any media reports addressing plastic as an issue.

3.1. Materials and Methods

3.1.1. Sample

Similar to the first study, a longitudinal design with two measurement points was conducted. The same commercial panel as in the first study was used to recruit participants; $n = 1225$ participants took part in the first measurement (September 2020) and $n = 1001$ (82%) in the second (November 2020). In total, $n = 54$ participants were excluded because of wrong answers to control questions or speeding. Hence, analyses referred to a final sample of $n = 947$ participants. Similar to the first study and regarding age, 16% of the participants were 18 to 29 years, 37% 30 to 49 years, and 47% 50 to 69 years old. Regarding gender, 52% of the participants were female and 48% male. The other socio-demographic data were also distributed similarly: 24% of participants held a high school diploma and 28% a university degree. The place of residence was equally distributed: 31% lived in a rural area (<10,000 habitants), 34% in a medium-sized town, and 35% in a large city (>100,000 habitants).

3.1.2. Procedure and Measures

The participants answered two online interviews with an interval of six weeks. The first survey wave was conducted between 30 September and 7 October, 2020, and the second wave six weeks later between 9 and 29 November. The procedures, stimulus materials, and questionnaires were the same as in the first study, with a few exceptions. At first, again, participants answered questions about their plastic consumption behavior.

Thereafter, unlike in the first study, there were three (instead of two) conditions to which the participants were randomly assigned: (1) a report about the plastic pollution problem without role models as a control group (i.e., problem-only condition) ($n = 314$), (2) an extended report including role models (i.e., role model condition) ($n = 329$) both of which corresponded to those in the first study, and (3) a further control group without any media report (i.e., no report condition) ($n = 304$). The media reports that were shown were the same as in the first wave.

Afterward, all participants answered questions about their self-efficacy beliefs and collective efficacy beliefs to reduce plastic consumption. Then, as in Study 1, they were asked about their *intention to avoid plastic* for a certain time period, but without any reference to a specific fasting period. Here, they answered the statement, “During the next six weeks, I will try to consume only products without plastic packaging”, on a 5-point Likert-scale (from 1 = ‘disagree completely’ to 5 = ‘agree completely’). Measures, to assess *plastic consumption behavior* ($\alpha_{t1} = 0.70$, $M_{t1} = 3.3$, $SD_{t1} = 0.78$; $\alpha_{t2} = 0.69$, $M_{t2} = 3.4$, $SD_{t2} = 0.77$), *self-efficacy* ($\alpha = 0.92$, $M = 4$, $SD = 0.87$), *collective efficacy* ($\alpha = 0.87$, $M = 4.3$, $SD = 0.86$), and *intention to avoid plastic* ($M_{t1} = 3.0$, $SD_{t1} = 1.06$) were the same as those in Study 1. Due to technical problems, the intention to avoid plastic was not saved at the first wave in the problem condition. Furthermore, the control questions regarding the ongoing COVID-19 pandemic were asked again. A detailed description of the media reports as well a participant flow chart can be found in the Supplementary Materials.

3.1.3. Statistical Analysis Methods

The analysis of the second study was performed analogous to the first study, but with some differences to account for the third experimental group. For plastic consumption, a factorial mixed-ANOVA [53] assumed an effect over time (before the designated six-week time period and during the designated six-week time period), a treatment effect between groups (problem-only condition, role model condition, or no report condition), as well as their interaction effect (time*group). For *self-efficacy beliefs* and *collective efficacy beliefs*, differences between participants in the problem-only condition, in the role model condition, and in the no report condition were investigated with one-way independent ANOVAs [53]. For all ANOVAs, posthoc comparisons were done using pairwise *t*-tests with Bonferroni corrections. Differences in the *intention to avoid plastic* between participants' in the role model condition and no report condition (as explained above, data for the problem-only condition were missing) were tested for significance using independent (unpaired) *t*-tests [53]. The raw data for the second study can also be found in the Supplementary Materials. For all analyses, we used an alpha level of $p < 0.05$.

3.2. Results

Table 2 presents means and standard deviations of the measured variables separately for media report conditions. For plastic consumption behavior, the factorial mixed ANOVA revealed a small effect over time ($F(1, 940) = 8.81, p < 0.01, \eta^2 = 0.01$), but neither an effect between the groups ($F(2, 940) = 2.07, p = 0.13, \eta^2 = 0.00$) nor an interaction effect ($F(2, 940) = 0.77, p = 0.46, \eta^2 = 0.00$) could be shown. In all groups, contrary to our assumption, there was a tendency for plastic consumption to increase over time. However, within the single group post-hoc pairwise comparisons, relevant differences were not revealed. The increase in single-use plastic usage in the second wave was not statistically significant for participants who watched the media report about plastic pollution ($M_{t1} = 3.40, M_{t2} = 3.44, \Delta_{t1-t2} = -0.05, p = 0.84$), the extended version of the media report including role models who reduced their plastic consumption ($M_{t1} = 3.34, M_{t2} = 3.45, \Delta_{t1-t2} = -0.10, p = 0.06$), or the additional control group where participants did not watch a media report at all ($M_{t1} = 3.28, M_{t2} = 3.34, \Delta_{t1-t2} = -0.05, p = 0.83$).

Table 2. Means and standard deviations by experimental condition (Study 2).

	Problem-Only Condition ($n = 314$)		Role Model Condition ($n = 329$)		Control Group/No Report ($n = 304$)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Plastic consumption (t1)	3.40	0.79	3.34	0.75	3.28	0.80
Plastic consumption (t2)	3.44	0.78	3.45	0.76	3.34	0.78
Self-efficacy	4.10	0.86	4.05	0.86	3.96	0.87
Collective Efficacy	4.35	0.82	4.25	0.87	4.19	0.88
Intention to avoid plastic ¹	-	-	3.05	1.07	2.97	1.06

¹ Due to technical problems, 'Intention to avoid plastic' was not recorded for the first experimental group.

Mean values for self-efficacy ($F(1, 945) = 1.38, p = 0.24$) and collective efficacy ($F(1, 945) = 0.58, p = 0.45$) did not differ significantly between participants who watched a media report about plastic pollution, the extended role model version, or no media report. Intention to fast plastic ($t(631) = 0.96, p = 0.34$) did not differ significantly between participants who watched the media report with role models or no media report (comparisons with participants who watched a report in the problem-only condition were not possible due to missing data, see above).

Covid-19 Pandemic's Impact

The COVID-19 pandemic had the biggest impact on participants' attention to hygiene ($M = 3.15$, $SD = 1.29$) with 46% rather or completely agreeing with this statement. Participants were the least likely to buy more plastic because of the pandemic ($M = 1.98$, $SD = 1.06$) with 74% rather or completely disagreeing with this statement. This was followed by buying more groceries ($M = 2.09$, $SD = 1.12$) and more sanitary products ($M = 2.19$, $SD = 1.17$). Cooking more often and producing things on their own was in the medium range with a tendency to disagree with the statement ($M = 2.74$, $SD = 1.37$). As with the first study, we assume that the circumstances of the pandemic do not strongly bias our results.

3.3. Study 2 Discussion

Study 2 analyzed if people during a random time period, who watched a media report showing role models reducing their plastic consumption, reduced their own plastic consumption behavior. Differing from Study 1, participants in Study 2 did not receive any encouragement to use the Lent period as a time to reduce their plastic consumption. They were only asked if they intended to avoid plastic. Additionally, a further control group that did not view a media report was added to account for external influences on plastic consumption. After the control group, which watched the media report about the plastic pollution problem, and the experimental group, which watched the extended version showing role models reducing their plastic consumption, both the experimental group (i.e., role model condition) and first control group (i.e., problem-only condition) showed high values in self-efficacy and collective efficacy beliefs. Self-efficacy and collective efficacy beliefs were slightly lower, but not significantly lower in the additional control group (i.e., no media report condition). Furthermore, in the experimental group (i.e., role model condition) and the control groups (i.e., problem-only condition and no media report condition), participants' plastic consumption during this random period was stable or slightly increased over time. Hence, the results of this second study strengthen the assumption that Lent is a relevant 'window of opportunity' to reconsider one's consumption habits. Regarding role model and media effects, even taking into account a further control group (i.e., no media report condition), we have to conclude that a single media report does not affect behavioral changes and their prerequisites.

4. General Discussion

We assumed Lent to be a 'window of opportunity' (H1) to support pro-environmental behaviors and if people are not only informed about environmental problems but also see positive role models showing exemplary behavior, their self-efficacy beliefs, collective efficacy beliefs, and intention to avoid plastic will increase (H2a–c).

4.1. Lent as a 'Window of Opportunity'

Regarding our first assumption, the results show that plastic consumption was reduced during the six-week fasting period Lent (i.e., Study 1) but not during the six-week random time period (i.e., Study 2). Thus, the results support our assumption from H1 that the fasting time period can be a 'window of opportunity' to encourage people in changing their behavioral habits and being more environmentally friendly. This finding supports other studies in the context that people who fast and fasting periods can be used as an opportunity to reduce consumption behaviors for environmental reasons [2,24]. Furthermore, the results from the second study, which took place at a random non-fasting time period, further strengthen our assumption and the findings of previous studies [2,24]. In Study 2, plastic consumption actually increased, although weakly, from t_1 to t_2 . This was, however, not present in the single-group comparisons and, therefore, is probably coincidental. Nonetheless, it could also be an additional indication that people cannot be as easily encouraged to rethink their pro-environmental consumption behaviors as it is during a fasting 'window of opportunity', such as Lent.

4.2. Role Models' Effect via Media Reports

Concerning our second hypothesis that media reports presenting role models with exemplary behavior can influence individuals' efficacy beliefs and their intention to partake in pro-environmental behaviors, the findings from both studies did not support our assumption. Although previous research has shown the importance of media reports in providing information and using mediation methods to convince people in their ability to behave in a sustainable manner [26,28], no relevant media effects were found for self-efficacy, collective efficacy, or the intention to partake in pro-environmental behaviors. Even after taking an additional control group where the participants did not watch a media report at all into account, we have to conclude, that a single media report did not significantly affect behavioral changes and their prerequisites.

The main idea of this intervention was to investigate if media reports presenting role models for pro-environmental behavior can strengthen individuals' efficacy beliefs and their intention to partake in pro-environmental behaviors. Previous studies have shown that the media use such methods to provide information on how to achieve sustainability, as well as to give recommendations and advice on solutions to achieve sustainable behavior via tips or through role models demonstrating how individuals can contribute to achieving sustainability [26,28]. Considering the resources that are used to provide individuals with information about environmental problems and ways in which they can behave in a more environmentally friendly and sustainable way, the findings of this study are relevant. Since we could not conclude that media effects influence individuals' efficacy beliefs and their intention to partake in pro-environmental behaviors after one media report viewing, it is important that future research take this into consideration and conduct studies that include multiple media reports over time.

4.3. Limitations and Future Research Needs

Based on these studies and their limitations, there is a need for research for future projects, particularly in three aspects. (1) the importance of Lent as a 'window of opportunity' and whether it is culturally universal, (2) the selection, content, and possible effectiveness of the media report, and (3) the Covid-19 pandemic.

First, although the significance of Lent as a period to engage in sustainable behavior has been strengthened by our results, it must be questioned to what extent this is generalizable to other cultural contexts. For the case of Germany and in a Christian context, it is reasonable to assume that this fasting period is to some degree secularized and people practice sustainable behavior. There is also evidence that fasting traditions are interpreted in secular terms in both a Jewish [54] and a Muslim [55] context, for example, as a personal challenge [56] or to change eating habits [57] over periods of fasting. However, future studies could clarify if this is also true for environmentally sustainable behavior and whether interventions need to reflect cultural differences. Furthermore, it could be criticized that most fasting periods end with a breaking of the fast, where consumption increases significantly. We consider that this does not apply since people make a conscious decision to behave in an environmentally friendly way during Lent. It is, therefore, important that the basic motivation exists. If these individuals learn ways to avoid plastic in their daily lives, it should pay off in the long run. Studies have already shown that behavioral changes during Lent remain stable after Easter [2]. Nevertheless, future studies should examine the extent to which the motivation to go green during a 'window of opportunity' produces persistent behavioral changes.

Second, with regard to the media reports, questions of validity arise as they have been taken from a real-world TV show. On the one hand, this ensured high external validity, but on the other hand, it limits the internal validity within the study. The contents are, of course, much more complex than the simple distinction into a problem-only and a role model condition. First, the information on plastic pollution referred to a global scale focused on the ocean and did not explicitly name consumers as polluters. Thus, it is possible that participants did not connect the topic with their daily lives. Second, the video about role

models was about a young, childless couple who avoided plastic for a week. They were successful in doing so, but the video also shows that it is difficult and tedious to avoid plastic when shopping. Thus, it is conceivable that not all participants could identify with the actors shown and, that for some participants, the hurdles shown were higher than the successes. Third, the videos had no reference to Lent, nor did they contain an explicit call to give up plastic. This could also explain why we did not find relevant impacts of the videos. These limitations could be addressed in future media studies examining the reception of such complex stimuli in a more differentiated way. However, the media reports in this study were carefully selected and reflect usual media representations that rarely make direct appeals to the audience [26]. Additionally, and as previously mentioned, these studies only examined media effects after one media report viewing. It is possible that no media effect can be seen after only one report; however, when individuals repeatedly see multiple reports over time that include information on environmental problems and solutions on how to behave in a more environmentally friendly and sustainable manner, it is possible that this repetition of information can lead to media effects strengthening individuals' efficacy beliefs and their intention to partake in pro-environmental behaviors. Thus, future research in this field should include multiple media reports over time.

Third, the study was conducted during the COVID-19 pandemic in 2020. Therefore, we asked control questions about how the pandemic affected participants' consumption behavior. In the two studies, participants' behavior was influenced in a similar way. In particular, their plastic consumption was little affected in both studies. Thus, we assume that the pandemic did not confound the findings very much. Nevertheless, the pandemic has created unusual circumstances, and the results should be interpreted in that light.

Finally, again, our results are limited because a complete variable is missing in one group due to technical problems. Here, we cannot test assumed relationships between media reports and behavioral intentions. However, and in the light of the other results which do not show media effects in any of the variables, we assume that no differences would have occurred here either.

4.4. Implications

4.4.1. Theoretical Implications

Our studies make theoretical contributions and extend the research in the environmental behavior literature by using Lent as a 'window of opportunity' to encourage habitual pro-environmental behavioral changes. Previous research looking at changing behavioral habits has focused mainly on larger events in a physical or social context that can have an impact on one's life. Such examples are events that either force an individual to change their habitual behaviors or open new opportunities that were not present before in order to change his or her habitual behaviors. The fasting concept associated with Lent is widely known throughout many cultures regardless of religious background; Lent is accepted and used as a time period of curtailment not only for believers in Christianity but also for unbelieving people [22]. It would appear that Lent is taking on a more modern approach to fasting by expanding the concept of curtailment from not only food and beverages but also to other types of consumption, as in this case, plastic consumption [22–24]. Our studies support this and offer insights, including such 'mindsets' or moods for change, such as with Lent, as additional 'windows of opportunity' to the established physical and social context effects that can trigger change.

4.4.2. Practical and Policy Implications

The implications of our studies can be viewed not only from the academic perspective but also for societal stakeholders in environmental protection. Most importantly, our results show that timing is important to obtain individual environmentally friendly behavior. Lent is a 'window of opportunity' in which people are more open to adapt such behavior than in a random period. However, information about environmental problems from the media, even when presented with positive role models, is unlikely to increase this. Thus,

stakeholders involved in environmental protection should focus their activities on familiar periods in a specific culture. As previously mentioned, this could be Lent in a Christian context, as was the case for our studies. However, it is possible that this could also be the case in other cultures with different religious backgrounds. This, of course, would need to be looked at in future research.

Furthermore, environmental protection stakeholders should also use intensive communication measures, such as campaigns [19] or explicit calls to action [2], to take advantage of such opportunities. For example, the communication of sustainability certification as a sustainability measure [58,59] might be most relevant in times when people are more willing to change their habits. If people decide to fast non-environmentally friendly products during a fasting period, they need information to determine what products are environmentally sustainable and what products are not. Labels or certificates which indicate products as sustainable or unsustainable can help in their decision and their perception of how hard the behavioral change is. Such information could be included in a call to action and can assist in navigating the transition from single-use fossil-based plastics to more environmentally friendly bio-based plastics. Mere information about sustainable behavior, even if it is well accessible, is obviously not sufficient.

5. Conclusions

Overall, this study provides evidence for two key determinants of pro-environmental behavior that future interventions can build on. First, Lent is a ‘window of opportunity’ to encourage an individual’s pro-environmental behavior. Second, interventions should not be limited to media reporting and general information but should also include communication measures with clear calls to action.

Supplementary Materials: The following are available online at <https://www.mdpi.com/article/10.3390/su132111807/s1>, File S1: data, analysis script; Study S1: participant flow chart study 1; Study S2: participant flow chart study 2; A transcript of the media reports is available upon request.

Author Contributions: Conceptualization, B.B., K.W. and L.M.H.; methodology, K.W. and L.M.H.; formal analysis, B.B. and S.E.F.; investigation, L.M.H. and S.E.F.; resources, B.B.; data curation, S.E.F. and B.B.; writing, B.B., K.W., S.E.F. and L.M.H.; visualization, B.B. and S.E.F. All authors have read and agreed to the published version of the manuscript.

Funding: This research is part of the interdisciplinary research project “PLAST”, which investigates environmental risks due to plastic usage and the sustainable limitation of these risks from the perspective of environmental sciences, communication sciences, and psychology. This project is funded by grants from the research program Profil³ at the University Koblenz-Landau.

Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki. Ethical approval was waived for this study, since no invasive or deceptive methods were used, and the web survey was completely anonymous and did not allow to trace sensible personal data.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: The data presented in this study are available in the Supplementary Materials.

Conflicts of Interest: The authors declare no conflict of interest. The funders had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript, or in the decision to publish the results.

References

1. Verplanken, B. Old Habits and New Routes to Sustainable Behaviour. In *Engaging the Public with Climate Change Behaviour Change and Communication*, 1st ed.; Whitmarsh, L., Lorenzoni, I., O'Neill, S., Eds.; Routledge: London, UK, 2011; pp. 17–30.
2. Heidbreder, L.M.; Schmitt, M. Fasting Plastic: An Intervention Study to Break Habits of Plastic Consumption. *PsyEcology* **2020**, *11*, 170–192. [CrossRef]
3. McKenzie-Mohr, D. *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*, 3rd ed.; New Society Publishers: Gabriola, BC, Canada, 2011.

4. Maier, M.; Rothmund, T.; Retzbach, A.; Otto, L.; Besley, J.C. Informal Learning Through Science Media Usage. *Educ. Psychol.* **2014**, *49*, 86–103. [CrossRef]
5. Geyer, R.; Jambeck, J.R.; Law, K.L. Production, Use, and Fate of All Plastics Ever Made. *Sci. Adv.* **2017**, *3*, 1–5. [CrossRef]
6. Thompson, R.C.; Moore, C.J.; vom Saal, F.S.; Swan, S.H. Plastics, the Environment and Human Health: Current Consensus and Future Trends. *Phil. Trans. R. Soc. B* **2009**, *364*, 2153–2166. [CrossRef] [PubMed]
7. Heidbreder, L.M.; Bablok, I.; Drews, S.; Menzel, C. Tackling the Plastic Problem: A Review on Perceptions, Behaviors, and Interventions. *Sci. Total Environ.* **2019**, *668*, 1077–1093. [CrossRef] [PubMed]
8. Plastics—The Facts. 2019. Available online: https://www.plasticseurope.org/download_file/force/3183/319 (accessed on 21 July 2021).
9. Transforming Our World: The 2030 Agenda for Sustainable Development. Available online: https://www.un.org/ga/search/view_doc.asp?symbol=A/RES/70/1&Lang=E (accessed on 21 July 2021).
10. Simon, N.; Raubenheimer, K.; Urho, N.; Unger, S.; Azoulay, D.; Farrelly, T.; Sousa, J.; van Asselt, H.; Carlini, G.; Semoko, C.; et al. A binding global agreement to address the life cycle of plastics. *Science* **2021**, *373*, 43–47. [CrossRef]
11. De Souza Machado, A.A.; Kloas, W.; Zarfl, C.; Hempel, S.; Rillig, M.C. Microplastics as an Emerging Threat to Terrestrial Ecosystems. *Glob. Change Biol.* **2018**, *24*, 1405–1416. [CrossRef] [PubMed]
12. Wood, W.; Neal, D.T. The Habitual Consumer. *J. Consum. Psychol.* **2009**, *19*, 579–592. [CrossRef]
13. Verplanken, B.; Wood, W. Interventions to Break and Create Consumer Habits. *J. Public Policy Mark.* **2006**, *25*, 90–103. [CrossRef]
14. Lally, P.; van Jaarsveld, C.H.M.; Potts, H.W.W.; Wardle, J. How Are Habits Formed: Modelling Habit Formation in the Real World. *Eur. J. Soc. Psychol.* **2010**, *40*, 998–1009. [CrossRef]
15. Bamberg, S. Effects of Implementation Intentions on the Actual Performance of New Environmentally Friendly Behaviours—Results of Two Field Experiments. *J. Environ. Psychol.* **2002**, *22*, 399–411. [CrossRef]
16. Verplanken, B.; Roy, D.; Whitmarsh, L. Cracks in the Wall: Habit Discontinuities as Vehicles for Behaviour Change. In *The Psychology of Habit*; Verplanken, B., Ed.; Springer: Cham, Switzerland, 2018; pp. 189–205.
17. Heinen, E.; Panter, J.; Mackett, R.; Ogilvie, D. Changes in Mode of Travel to Work: A Natural Experimental Study of New Transport Infrastructure. *Int. J. Behav. Nutr. Phys. Act.* **2015**, *12*, 1–10. [CrossRef] [PubMed]
18. Thomas, G.O.; Fisher, R.; Whitmarsh, L.; Milfont, T.L.; Poortinga, W. The Impact of Parenthood on Environmental Attitudes and Behaviour: A Longitudinal Investigation of the Legacy Hypothesis. *Popul. Environ.* **2018**, *39*, 261–276. [CrossRef] [PubMed]
19. Heidbreder, L.M.; Steinhorst, J.; Schmitt, M. Plastic-Free July: An Experimental Study of Limiting and Promoting Factors in Encouraging a Reduction of Single-Use Plastic Consumption. *Sustainability* **2020**, *12*, 4698. [CrossRef]
20. Venegas-Borsellino, C.; Sonikpreet; Martindale, R.G. From Religion to Secularism: The Benefits of Fasting. *Curr. Nutr. Rep.* **2018**, *7*, 131–138. [CrossRef]
21. Lent. Encyclopedia Britannica. Available online: <https://www.britannica.com/topic/Lent> (accessed on 9 September 2021).
22. Heiser, P. Fasting in Germany: A Research Report. Working Paper. 2020. Available online: <https://www.ssoar.info/ssoar/handle/document/70639> (accessed on 9 September 2021).
23. Schoenebeck, S.Y. Giving up Twitter for Lent: How and Why We Take Breaks from Social Media. In Proceedings of the CHI Conference on Human Factors in Computing Systems, Toronto, ON, Canada, 26 April 2014.
24. Petrescu-Mag, R.M.; Petrescu, D.C.; Robinson, G.M. Adopting Temperance-Oriented Behavior? New Possibilities for Consumers and Their Food Waste. *J. Agric. Environ. Ethics* **2019**, *32*, 5–26. [CrossRef]
25. Fischer, D.; Lüdecke, G.; Godemann, J.; Michelsen, G.; Newig, J.; Rieckmann, M.; Schulz, D. Sustainability Communication. In *Sustainability Science*; Heinrichs, H., Martens, P., Michelsen, G., Wiek, A., Eds.; Springer: Dordrecht, The Netherlands, 2016; pp. 139–148.
26. Vogel, I.; Werling, K.; Barkela, B.; Milde, J. Plastics in Mass Media. A Content Analysis of German Media Coverage of Plastic-Associated Risks and Sustainable Alternatives to Plastics. *Environ. Commun.* **2021**, in press. [CrossRef]
27. Newig, J.; Schulz, D.; Fischer, D.; Hetze, K.; Laws, N.; Lüdecke, G.; Rieckmann, M. Communication Regarding Sustainability: Conceptual Perspectives and Exploration of Societal Subsystems. *Sustainability* **2013**, *5*, 2976–2990. [CrossRef]
28. Glathe, C. *Communication of Sustainability in Television and Web 2.0*, 1st ed.; VS Verlag für Sozialwissenschaften: Wiesbaden, Germany, 2010.
29. Green, M.C.; Brock, T.C. The Role of Transportation in the Persuasiveness of Public Narratives. *J. Personal. Soc. Psychol.* **2000**, *79*, 701–721. [CrossRef]
30. Dahlstrom, M.F. Using Narratives and Storytelling to Communicate Science with Nonexpert Audiences. *Proc. Natl. Acad. Sci. USA* **2014**, *111*, 13614–13620. [CrossRef] [PubMed]
31. Glaser, M.; Garsoffky, B.; Schwan, S. Narrative-Based Learning: Possible Benefits and Problems. *Communications* **2009**, *34*, 429–447. [CrossRef]
32. Bandura, A. Self-Efficacy: Toward a Unifying Theory of Behavioral Change. *Psychol. Rev.* **1977**, *84*, 191–215. [CrossRef]
33. Arlt, D.; Kuhlmann, C.; Wolling, J. Ecological Role Models? The Effect of the Media Presentation of Ecological Actions on the reCipients' Willingness to Act. *SCM Stud. Commun. Media* **2013**, *1*, 411–442. [CrossRef]
34. Chen, M.-F. Self-Efficacy or Collective Efficacy within the Cognitive Theory of Stress Model: Which More Effectively Explains People's Self-Reported Proenvironmental Behavior? *J. Environ. Psychol.* **2015**, *42*, 66–75. [CrossRef]
35. Hamann, K.R.S.; Reese, G. My Influence on the World (of Others): Goal Efficacy Beliefs and Efficacy Affect Predict Private, Public, and Activist Pro-environmental Behavior. *J. Soc. Issues* **2020**, *76*, 35–53. [CrossRef]

36. Hanss, D.; Böhm, G. Can I Make a Difference? The Role of General and Domain-Specific Self-Efficacy in Sustainable Consumption Decisions. *Umweltpsychologie* **2010**, *14*, 46–74.
37. Hanss, D.; Böhm, G.; Doran, R.; Homburg, A. Sustainable Consumption of Groceries: The Importance of Believing That One Can Contribute to Sustainable Development. *Sust. Dev.* **2016**, *24*, 357–370. [\[CrossRef\]](#)
38. Jugert, P.; Greenaway, K.H.; Barth, M.; Büchner, R.; Eisentraut, S.; Fritsche, I. Collective Efficacy Increases Pro-Environmental Intentions through Increasing Self-Efficacy. *J. Environ. Psychol.* **2016**, *48*, 12–23. [\[CrossRef\]](#)
39. Bandura, A. *Self-Efficacy: The Exercise of Control*; W.H. Freeman: New York, NY, USA, 1997.
40. Homburg, A.; Stolberg, A. Explaining Pro-Environmental Behavior with a Cognitive Theory of Stress. *J. Environ. Psychol.* **2006**, *26*, 1–14. [\[CrossRef\]](#)
41. Bandura, A. Health Promotion from the Perspective of Social Cognitive Theory. *Psychol. Health* **1998**, *13*, 623–649. [\[CrossRef\]](#)
42. World Health Organization. Coronavirus Disease 2019 (COVID-19)—Situation Report—41. Available online: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200301-sitrep-41-covid-19.pdf?sfvrsn=6768306d_2 (accessed on 22 July 2020).
43. Federal Government. Agreement between the Federal Government and the Heads of Government of the Federal States in View of the Corona Epidemic in Germany. Available online: <https://www.bundesregierung.de/breg-de/aktuelles/vereinbarung-zwischen-der-bundesregierung-und-den-regierungschefinnen-und-regierungschefs-der-bundeslaender-angesichts-der-corona-epidemie-in-deutschland-1730934> (accessed on 23 July 2020).
44. Janssen, M.; Chang, B.P.I.; Hristov, H.; Pravst, I.; Profeta, A.; Millard, J. Changes in Food Consumption During the COVID-19 Pandemic: Analysis of Consumer Survey Data From the First Lockdown Period in Denmark, Germany, and Slovenia. *Front. Nutr.* **2021**, *8*, 635859. [\[CrossRef\]](#) [\[PubMed\]](#)
45. Busch, G.; Schütz, A.; Bayer, E.; Spiller, A. Changes in Grocery Shopping Behavior during the Corona Pandemic. In Proceedings of the GIL Annual Conference, Information and Communication Technology in Critical Times, online, 8–9 March 2021; Meyer-Aurich, G., Hoffmann, W., Bellingrath-Kimura, F., Eds.; Informatics Society e.V.: Bonn, Germany, 2021.
46. Parashar, N.; Hait, S. Plastics in the Time of COVID-19 Pandemic: Protector or Polluter? *Sci. Total Environ.* **2021**, *759*, 1–15. [\[CrossRef\]](#)
47. Package ‘Readxl’. Available online: <https://cran.r-project.org/web/packages/readxl/readxl.pdf> (accessed on 9 September 2021).
48. Package ‘Tidyr’. Available online: <https://cran.r-project.org/web/packages/tidyr/tidyr.pdf> (accessed on 9 September 2021).
49. Package ‘Psych’. Available online: <https://cran.r-project.org/web/packages/psych/psych.pdf> (accessed on 9 September 2021).
50. Package ‘Rstatix’. Available online: <https://cran.r-project.org/web/packages/rstatix/rstatix.pdf> (accessed on 9 September 2021).
51. Package ‘Lsmeans’. Available online: <https://cran.r-project.org/web/packages/lsmeans/lsmeans.pdf> (accessed on 9 September 2021).
52. Package ‘Dplyr’. Available online: <https://cran.r-project.org/web/packages/dplyr/dplyr.pdf> (accessed on 9 September 2021).
53. Field, A.P.; Miles, J.; Field, Z. *Discovering Statistics Using R*; Sage: London, UK, 2012.
54. Sharot, S. Judaism and the Secularization Debate. *Sociol. Anal.* **1991**, *52*, 255–275. [\[CrossRef\]](#)
55. Tamney, J.B. Fasting and Modernization. *J. Sci. Study Relig.* **1980**, *19*, 129–137. [\[CrossRef\]](#)
56. Shoham, H. Yom Kippur and Jewish Public Culture in Israel. *J. Isr. Hist.* **2013**, *32*, 175–196. [\[CrossRef\]](#)
57. Hasan, F.; Latzer, Y.; Diedrichs, P.C.; Lewis-Smith, H. A Qualitative Exploration of Motivations for Fasting and the Impact of Ramadan on Eating Behaviors and Body Image among Young Adult Muslim Women in the United Kingdom. *Eat. Behav.* **2021**, *42*, 1–9. [\[CrossRef\]](#)
58. Falcone, P.M.; Imbert, E. Tackling Uncertainty in the Bio-Based Economy. *Int. J. Stand. Res.* **2019**, *17*, 74–84. [\[CrossRef\]](#)
59. Majer, S.; Wurster, S.; Moosmann, D.; Ladu, L.; Sumfleth, B.; Thrän, D. Gaps and Research Demand for Sustainability Certification and Standardisation in a Sustainable Bio-Based Economy in the EU. *Sustainability* **2018**, *10*, 2455. [\[CrossRef\]](#)