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Abstract

The current research investigated the effect of the normative, hedonic and gain goal-frames on the consistency of pro-environmental behaviour. It was expected that a normative goal-frame led to higher consistency of pro-environmental behaviours than the hedonic and gain goal-frame. This was investigated by activating a normative, hedonic or gain goal-frame and measuring three subsequent behaviours among participants. The results showed no significant relationships between the goal-frames and the consistency of pro-environmental behaviour. Additionally, exploratory research did not find significant effects of the normative, hedonic and gain goal-frame on pro-environmental behaviour. However, there was a trend for the first pro-environmental behaviour where participants with the normative goal-frame showed more pro-environmental behaviour compared to participants in the hedonic and gain goal-frame. Future research about goal-framing theory should investigate how goal-frames can be activated. Furthermore, future research should investigate temporal aspects of the goal-frames and their underlying psychological constructs.

Layman's Abstract

For individuals to minimise their carbon footprint, it is essential that they make consistent pro-environmental choices. The current study investigated whether the activation of three different goal-frames influenced this consistency. This study examined the normative goal-frame, which is about complying with social norms, the hedonic goal-frame, which entails improving the way one feels, and the gain goal-frame which is about improving or maintaining one's resources. Participants were primed with one of the three goal-frames and performed three different behaviours that could all be described as pro-environmental or non-pro-environmental. The results showed no significant differences between the effect of the three goal-frames on the consistency of pro-environmental behaviour. Additional research about the effect of the goal-frames on the separate pro-environmental behaviours did not show significant effects as well. However, there was a trend for the first pro-environmental behaviour where participants with the normative goal-frame showed more pro-environmental behaviour compared to participants in the hedonic and gain goal-frame. Future research about goal-framing theory should investigate how these three goal-frames can best be activated. Furthermore, future research should investigate the duration of the goal-frames and their underlying psychological constructs.

The Effect of Goal-Framing on the Consistency of Pro-Environmental Behaviour

Human-caused climate change is one of today's most pressing challenges. It has led to widespread adverse impacts and damages to nature and people (IPCC, 2023). The alarming decline of Arctic Sea ice, surpassing 75% in the last four decades, underscores the urgency of addressing this issue (García-Soto et al., 2021). In response, climate change is a focal point on political agendas worldwide. Consequently, people are compelled to act pro-environmentally and to make choices that reduce their carbon footprint. People for instance aim to reduce their energy use, eat vegan meals, or take the train to work instead of their car. Despite of these sustainable intentions, people do not always behave consistently and make unsustainable choices as well. Sometimes, people even overcompensate their pro-environmental behaviours by indulging in non-environmentally friendly behaviours that outweigh the benefits of their pro-environmental behaviours (Blanken et al., 2015). These unsustainable behaviours conflict with their intention of behaving pro-environmentally but align with other intentions they may have simultaneously. This makes that people are juggling their green and non-green intentions. For individuals to minimise their carbon footprint, it is essential that they make more consistent pro-environmental choices. What determines whether people behave consistently when it comes to pro-environmental behaviour?

Prior studies determined that individuals have multiple psychosocial determinants of pro-environmental behaviour, such as attitude and behavioural control (Bamberg & Möser, 2007). Furthermore, previous research also suggests that people's goals play an important role in their pro-environmental behaviour (Lindenberg & Steg, 2007). This is because goals can act as frames that determine the way people process information and act upon it. Lindenberg and Steg (2007) presented the goal-framing theory, which describes three types of goal-frames that seem relevant for sustainable behaviour. They portrayed a normative, hedonic and gain goal-frame and suggested that depending on which goal-frame is active, people show

varying amounts of pro-environmental behaviour. Subsequent research about goal-framing theory measured this implied effect of goal-frames and investigated different types of pro-environmental behaviour (Chakraborty et al., 2017; Geng et al., 2016; Khan et al., 2022; Onwezen, 2023; Wang et al., 2021; Yang et al., 2020). Research also investigated that contingent upon which goal-frame is active, an initial pro-environmental behaviour could cause a positive spillover effect to subsequent sustainable behaviour (Geiger et al., 2021; Geng et al., 2019).

However, there are crucial gaps in the current literature about goal-framing theory and pro-environmental behaviour. Firstly, the studies that measured the effect of goal-frames used self-reported pro-environmental behaviour and intentions to measure pro-environmental behaviour. Additionally, the positive spillover effect was mostly studied by comparing the normative and gain goal-frame. The three goal-frames have yet to undergo direct comparative testing to measure spillover of pro-environmental behaviour. Therefore, the current study will bridge the gap in the current literature and investigate the effect of the three different goal-frames on the spillover of pro-environmental behaviour. This effect will be investigated by measuring multiple subsequent behaviours.

Scientific Background

Goal-Framing Theory

Goal-framing theory is mostly influenced by research in cognitive social psychology that focusses on the influence of goals on cognitive processes (Lindenberg & Steg, 2007). The central idea of the goal-framing theory is that goals determine which knowledge and attitudes are cognitively most accessible and how aspects of a situation are evaluated. This theory describes three goals that govern and frame subgoals. First, there is the normative goal-frame, which activates subgoals to act appropriately and comply with social norms. People activate subgoals related to what one ought to do (injunctive norms) and what one observes other

people doing (descriptive norms). These subgoals are associated with appropriateness, such as contributing to a clean environment and behaving the right way. The time horizon of the normative goal-frame is long. For example, after eating an apple, someone in a normative goal-frame will take the trouble to retain the core until encountering an appropriate recycling bin for disposal. Knowledge about where one is supposed to throw away a certain type of food becomes salient and aspects of what is the appropriate way to dispose of food are considered. Within the normative goal-frame, subgoals about how one feels, and about personal resources are pushed in the cognitive background.

Second, hedonic goal-frames activate subgoals to improve the way one feels in a particular situation (Lindenberg & Steg, 2007). The subgoals that are activated relate to maintaining or increasing pleasure and comfort and avoiding uncertainty or negative thoughts. This frame has a short time horizon. For example, when someone needs to do groceries on a rainy day, the thought of going by bike may evoke a feeling of discomfort. However, the thought of driving in a warm car evokes a more comfortable and positive feeling. Someone in a hedonic goal-frame will prefer the comfort of the car over the discomfort of the bike. Knowledge about what feels best in this situation becomes vocal and aspects about how one avoids the unpleasant feeling of the rain are considered. Within the hedonic goal-frame, subgoals about societal norms and subgoals about personal resources are relegated to the cognitive background.

Thirdly, the gain goal-frame makes people very sensitive to changes in their personal resources, such as time and money (Lindenberg & Steg, 2007). The subgoals that are activated in a gain goal-frame pertain to guarding and improving one's resources. For example, when one needs a specific cleaning product, and the option that is environmentally harmful is cheaper than the environmentally sound option, someone in a gain goal-frame will choose the environmentally harmful one since it is cheaper. Knowledge about the price of

products becomes salient. Subgoals that are about how one feels and subgoals about societal norms are pushed to the cognitive background. This goal-frame has a medium to long time frame.

Goal-Frames and Pro-Environmental Behaviour

Normative Goal-Frame. Goal-framing theory states that every individual has normative, hedonic and gain goal-frames (Lindenberg & Steg, 2007). A goal becomes focal depending on both value priorities and situational factors (Steg et al., 2014). The other goals remain in the background. The dominance of a particular goal-frame determines to what extent people show pro-environmental behaviour. Goal-framing theory suggests that the normative goal-frame will be the most effective to stimulate stable pro-environmental behaviour in the population (Lindenberg & Steg, 2007). This is suggested, because many pro-environmental behaviours require people to suppress egoistic tendencies in favour of benefiting the society, thereby aligning with the normative goal-frame. In contrast, hedonic and gain goal-frames often imply acting in line with individual interests, which may not always align with pro-environmental behaviour.

Nevertheless, it is important to note that not all normative goals entail behaving pro-environmentally. For example, the normative goal in society of complying with the current fashion trends requires individuals to buy new clothing, which is unsustainable behaviour. Additionally, not all hedonic and gain-goals align with unsustainable behaviour. For instance, saving energy is also in line with the gain goal-frame of saving money.

Research about goal-framing theory measured the amount to which people valued the three distinct goals through a questionnaire (Chakraborty et al., 2017; Geng et al., 2016; Khan et al., 2022). This way, participants' goal-frames were measured. Within the questionnaires, participants reported their pro-environmental behaviours and intentions as well. An example of an item that measured pro-environmental behaviour was 'What is the main travel mode

(walking/non-powered bicycle/electric bicycle/bus/car/other) that you use for you everyday trips?' (Geng et al., 2016). Furthermore, an example of an item that measured pro-environmental intentions was 'I try to print as much as possible on one sheet either by using narrow margins, printing multiple pages or copying double sided copies.' (Chakraborty et al., 2017). These studies confirmed the assumption of Lindenberg and Steg (2007) and showed a positive relationship between normative goal-frames and pro-environmental behaviour (Chakraborty et al., 2017; Geng et al., 2016; Khan et al., 2022). It should be highlighted that since these studies relied on questionnaires and participants' self-reported behaviour, the results could be influenced by social desirability bias (Do Canto et al., 2022). This bias could give a distorted image about the effect of normative goal-frames on pro-environmental behaviour, given that responses that align with this goal-frame are often viewed as the socially desirable option.

Hedonic and Gain Goal-Frame. Goal-framing theory states that hedonic and gain goal-frames do not lead to stable pro-environmental behaviour, because people with hedonic goal-frames will only show pro-environmental behaviour if it aligns with their mood and people with gain goal-frames will only engage in pro-environmental behaviour if it minimises their costs (Lindenberg & Steg, 2007). For example, when choosing between travelling by train or plane, people in a hedonic goal-frame would choose to travel by train only if that would provide a more comfortable and pleasurable journey and people in a gain goal-frame would choose to travel by train only if that would be less costly or less time consuming than travelling by plane.

In line with the assumption of goal-framing theory that hedonic and gain goal-frames do not lead to stable pro-environmental behaviour, research about the influence of hedonic and gain goal-frames on pro-environmental behaviour found mixed results. Oftentimes, research framed these goal-frames in a way in which a specific pro-environmental behaviour

is encouraged. For example, an item that was used to measure the hedonic goal-frame was ‘Green and clean campus boosts my energy and makes me feel healthy.’ (Chakraborty et al., 2017). Additionally, an item that was used to measure the gain goal-frame was ‘There are some preferential policies (e.g., subsidized price) for purchasing green products.’ (Yang et al., 2020).These studies revealed that, although the normative goal-frame showed the strongest positive relationship with pro-environmental behaviour, hedonic and gain goal-frames also positively affected pro-environmental behaviour (Chakraborty et al., 2017; Wang et al., 2021; Yang et al., 2020).

However, hedonic and gain goal-frames conflict with some pro-environmental behaviours. For example, the pro-environmental behaviour ‘taking a short and cold shower’ is in contrast with the hedonic goal of being comfortable. And ‘buying organic groceries (which are typically expensive)’ is in contrast with the gain goal of saving or gaining money. Investigating more general goal-frames could provide a broader understanding of their impact on pro-environmental behaviour, covering a range of behaviours rather than focusing solely on one specific pro-environmental behaviour. Nevertheless, studies that used a more general goal-frame and did not frame hedonic and gain goal-frames as an encouragement of a specific pro-environmental are scarce. A study that assessed more general goal-frames measured these frames through a questionnaire (Onwezen, 2023). The questionnaire items consisted of general statements that matched the different goal-frames. Participants for example indicated to what extent the goal ‘Enjoying life: relaxing and enjoying.’ was important to them to measure the hedonic goal-frame. To measure the gain goal-frame, participants for example indicated to what extent the goal ‘Financial well-being: economic choices, price-consciousness to maintain or improve one’s financial situation.’ was important to them. The items were not related to specific pro-environmental behaviour but measured the hedonic and gain goal-frames in a more generalized matter. This research found negative relationships

between the hedonic and gain goal-frames and pro-environmental behaviour (Onwezen, 2023). This finding contrasts with the positive relationships that were found in research where the hedonic and gain goal-frames were framed as an encouragement of a specific pro-environmental behaviour (Chakraborty et al., 2017; Wang et al., 2021; Yang et al., 2020).

Consistency of Pro-Environmental Behaviour Over Time. It is important to note that research only looked at self-reported behaviour at one point in time and did not capture behavioural consistency over time. For people to minimise their carbon footprint, it is essential that they show consistent pro-environmental behaviour. Therefore, it is crucial to further investigate the effect of goal-framing theory on the consistency of pro-environmental behaviour.

Spillover Effect

When an intervention influences subsequent behaviors beyond those directly targeted, it is referred to as behavioural spillover (Poortinga et al., 2013). Previous studies found mixed results for spillover effects of pro-environmental behaviour. Some studies found that the promotion of a pro-environmental behaviour raises the likelihood that other pro-environmental behaviours will be adopted (i.e., positive spillover), while others found it reduces this likelihood (i.e., negative spillover; Truelove et al., 2014). Interventions that induce negative spillover should be avoided to effectively promote pro-environmental behaviour. Therefore, further investigation of spillover is essential so that counterproductive interventions can be prevented.

Positive Spillover. Positive spillover is suggested to be promoted by people's desire to be consistent and by self-identity processes (Truelove et al., 2014). People's consistency in behaviour is proposed to emerge because engaging in an initial behaviour changes one's self-perception as a certain type of person, which leads people to act in accordance with how such a person might behave (Freedman & Fraser, 1966). The activation of an environmentally

friendly identity makes individuals more likely to engage in consistent pro-environmental behaviour.

Negative Spillover. On the other hand, negative spillover can be explained by moral licensing (Truelove et al., 2014). This idea implies that people justify indulgent behaviours (e.g., non-pro-environmental behaviour) based on past behaviour that was morally right (e.g., pro-environmental behaviour). Moral licensing intertwines with the notion of juggling green and non-green intentions. Individuals could justify the intention of engaging in unsustainable behaviour with the initial fulfillment of pro-environmental behaviour, thereby fulfilling both green and non-green intentions. As a result, when negative spillover of pro-environmental behaviour occurs, individuals show less consistency in their pro-environmental behaviour.

Goal-Framing Theory and Spillover Effect. Some studies investigated the promotion of positive spillover through the normative, hedonic and gain goal-frame (Geiger et al., 2021; Geng et al., 2019; Steg et al., 2016). These studies showed suggestive evidence that normative goal-frames led to positive spillover and that hedonic and gain goal-frames led to negative spillover. For instance, a meta-analysis investigated previous interventions that induced a normative or gain goal-frame and measured spillover of pro-environmental behaviour (Geiger et al., 2021). This meta-analysis found that interventions that addressed normative goals led to more positive spillover than gain goals. The analysis did not measure hedonic goal-frames. The three goal-frames have yet to undergo direct comparative testing.

Current Research

The current research aims to investigate the effect of the normative, hedonic and gain goal-frame on the spillover of pro-environmental behaviour. This will be investigated by activating one of the three different goal-frames across participants and assessing whether they demonstrate distinct types of pro-environmental behaviour. It is expected that having a normative goal-frame is positively related to positive spillover of pro-environmental

behaviour and that having a hedonic or a gain goal-frame is positively related to negative spillover of pro-environmental behaviour. This study could reduce the gap in the current literature by providing direct comparative testing between the three different goal-frames. This research also contributes to the current literature by framing participants with one of the three goal-frames instead of relying on self-reported goal-frames. Furthermore, this study will add to the current literature by observing participants' behaviour instead of relying on self-reported behaviour to demonstrate the impact of the goal-frames on pro-environmental behaviour. Finally, this study will look at these behaviours sequentially rather than at one moment in time.

Method

Design

The current study had a between-groups design with one independent variable, goal-frame, that was manipulated at three levels: normative, hedonic, and gain. This study adopted an experimental design methodology wherein participants were randomly assigned to one of the three goal-frames. The dependent variable was pro-environmental consistency. This variable was measured by investigating three behavioural measures. The Ethics Committee of the Leiden University of Social and Behavioural Sciences approved of this study. This approval is presented in Appendix A.

There was no control group, since the researchers did not want to measure the effect of framing itself, but only wanted to measure the difference between distinct goal-frames. This was because the effect of framing has already been demonstrated in literature (Kahneman et al., 1991; Levin et al., 1998; Tversky & Kahneman, 1981). The consistency of the behaviour of the participant was the dependent variable.

Participants

In this study, participants who were at least 16 years old, had no food allergies and were proficient in English were recruited from Leiden University. Participants were actively recruited by distributing flyers at the University and via the 'SONA' system. They were compensated for their participation with either course credits or a monetary reward.

Given the unique design of our study and the lack of similar studies to find effect sizes in literature, the researchers took a conservative approach and aimed for a small-to-medium effect size. Therefore, to test the effect of goal-frame activation on pro-environmental behaviour, an a priori power analysis using G*Power software revealed that a total sample size of $n = 246$ (82 participants for each condition) was required for a one-way ANOVA to obtain a power of 0.80 for detecting a small-to-medium effect size (w = 0.2).

However, after collecting the data, the researchers reached a sample size of $n = 90$. After deleting participants that did not give consent for analysing and reporting their data, the final sample size was $n = 89$. Participants were randomly assigned to one of the three goal-frame conditions. 32 (36.0%) participants were in the normative goal-frame condition, 27 (30.3%) in the hedonic goal-frame condition, and 30 (33.7%) in the gain goal-frame condition. The sample consisted of 26 (29.2%) male, 60 (67.4%) female, and 3 (3.4%) non-binary participants. Participants were between 18 and 49 years old ($M = 21.49$; $SD = 4.39$). 77 (86.5%) participants lived in a city and 12 (13.5%) participants lived in a rural area. The highest education level of the participants was high school for 47 participants (52.8%), a bachelor's degree for 29 participants (32.6%) and a master's degree for 9 participants (10.1%).

Measures

Goal-Frames

The participants read a text of approximately 400 words that aimed to induce either a normative, hedonic or gain goal-frame through. The texts are presented in Appendix B. The

texts were about one of the three goal-frames and explained why people behave in one of the three ways, without explicitly stating the words normative, hedonic, or gain. Furthermore, the texts did not address pro-environmental behaviour, but focused on people's behaviour in general.

Normative Goal-Frame. The text that induced the activation of a normative goal-frame discussed how people behave based on societal expectations, perceived behaviour of others, and perceptions of what is right or wrong. Also, an example of social norms is presented about the appropriate way to park a bike. After that, the text explained that consumer behaviour is affected by moral values. The text ended with a concluding remark about how a shared vision among members of a society leads to individual and societal growth.

Hedonic Goal-Frame. The text that was used to induce the activation of a hedonic goal-frame among participants explained how engaging in enjoyable activities fosters emotional well-being and helps to reduce stress. After that, several ways to introduce elements of joy in one's daily life were presented. The text also explained that consumer behaviour is affected by pleasure. It ended with the remark that joy is good for one's overall health and happiness.

Gain Goal-Frame. The text that induced the activation of a gain goal-frame was about the concept 'time is money' and emphasized the importance of resources in terms of time and money. Different ways to save time were presented and the text discussed the relation between saving money and consumption behaviour. The text ended with stating that time and money are one's most precious resources.

Goal-Frame Scale. To see whether the activation of the normative, hedonic or gain goal-frame was induced, participants' reading comprehension was first measured. Participants had to write a summary about the text they had read about the goal-frame to assess their

reading comprehension. Second, a goal-frame scale was assessed to determine whether participants were primed with one of the three goal-frames. The items of the goal-frame scales were adapted from the study of Onwezen (2023), and they are stated in Appendix D. The goal-frame scale consisted of 15 items on a 7-point Likert scale ranging from 1 (*Not important at all*) to 7 (*Extremely important).* To measure the normative goal-frame, participants for example indicated to what extent the item 'Right behaviour: making choices that fit the values of one's friends and family' was important to them. To measure the hedonic goal-frame, participants for instance indicated to what extent 'Enjoying life: relaxing and enjoying.' was important to them. And finally, to measure a gain goal-frame, participants for example indicated to what extent 'Price advantages: a good price/quality ratio' was important to them.

Pro-Environmental Behaviours

Syrup Waffle (T0). This study first manipulated an initial pro-environmental behaviour so that a spillover effect on following pro-environmental behaviour could be investigated. This initial behaviour entailed the binary choice between a regular and a vegan syrup waffle, with the latter being the pro-environmental option. Participants were nudged towards choosing the vegan waffle by informing them that the researchers were mostly interested in this option since it was the most sustainable option. After that, the participants were told that they were free to choose either product, and we asked them which syrup waffle they wanted to try. 93.3% of the participants chose the vegan option. Participants who did not choose the vegan option were excluded from the analysis that measured a spillover effect, since this effect could not be investigated for these participants.

Scrap Paper (T1). Three additional behavioural measures were observed to assess positive spillover and measure consistency of pro-environmental behaviours. For the first dependent variable, participants were instructed to take a sheet of paper to write down notes

about their perception of the syrup waffle. This instruction was provided by the researchers and reiterated through a laminated instruction sheet placed on the desk. This instruction sheet is presented in Appendix C. The participants had to choose between a pile of sheets that was already used (PEB), and a pile of new paper sheets (nPEB). These piles were positioned on the desk where the participants were seated and were right next to each other. The new scrap papers were in an easy to reach distance and the used scrap papers were placed a few centimeters further away. The used scrap papers were deliberately placed further away from the participants to illustrate an additional effort to engage in environmentally friendly behaviour, reflecting participants' commitment to sustainable behaviour. After the participants chose a piece of paper, they were asked to taste the syrup waffle and write down what they thought about the waffle in just a few sentences. 25.8% of the participants chose scrap paper that was already used.

Wrapping (T2). Participants were asked to discard the package of the syrup waffle they had just consumed, as indicated on the instruction sheet. The disposition of the wrapping of the waffle was the second dependent variable. Two bins were placed on the desk where the participants were seated. A plastic bin was placed within an easy to reach distance (nPEB), and a regular waste bin was placed approximately twenty centimeters further away (PEB). The regular waste bin was deliberately placed further away to indicate the additional effort to engage in environmentally friendly behaviour, reflecting participants' commitment to sustainable behaviour. The plastic bin contained a small label with some information about what is not supposed to go in that bin, including food wrappings. The regular waste bin had a small label that stated 'regular waste bin'. These labels are presented in Appendix E. If participants paid close attention and read the information on the labels, they would know that the appropriate waste bin is not the plastic waste bin, and the environmentally friendly choice

would be to discard the wrapping in the regular waste bin. 44.9% of the participants disposed of the wrapping in the regular waste bin.

Paper Towels (T3). After disposing of the wrapping, the participants were instructed by the information sheet to wash their hands. The instruction sheet mentioned that this was necessary to keep the shared lab space clean. A poster was placed above the sink with information about how to use less paper towels. This poster highlighted the societal norm of minimising paper towel usage and encouraged people to limit themselves to using one paper towel. It is presented in Appendix F. The amount of paper towels utilized was the third dependent variable, and it was observed by inspecting the contents of the waste bins after the experiment. Using zero or one paper towel was considered environmentally friendly behaviour (PEB), as this aligned with or fell below the recommended amount of paper towels presented on the poster. Using more than one paper towel, and therefore not minimising paper towel usage, was seen as non-environmentally friendly behaviour (nPEB). 51.7% of the participants used zero or one paper towel.

Consistency of Pro-Environmental Behaviour

To test whether there was a spillover effect of performing pro-environmental behaviour at T0, to the other three behaviours (T1, T2, and T3) the pro-environmental behaviours were recoded to 0 (no pro-environmental behaviour) or 1 (pro-environmental behaviour). The current study did not accurately assess a spillover effect from one pro-environmental behaviour to subsequent pro-environmental behaviours. Instead, consistency scores were assigned to each participant. These scores were assigned by creating a new variable where the participants' pro-environmental behaviours (0 or 1) were summed up. Consequently, participants could have a consistency score ranging from zero to three. The differences between the different goal-frame groups could be tested with these consistency scores.

Procedure

When the participants arrived at our lab, the researchers first explained what our study was about. The real topic that was investigated was not shared with the participants at this time, because doing this could induce demand characteristics, which could have an influence on the behaviour of the participants (Nichols & Maner, 2008). Instead, the participants were told that they were participating in a consumer perception study. The participants first chose a type of syrup waffle (T0). This waffle was placed on the table behind the participants and the experimentor left the room. The participants did not do anything with the waffle yet but first read a letter with information about the study and gave written consent to continue with the study. Also, the participants completed a reading comprehension task that induced one of the three goal-frames, as presented in Appendix B. After this, the participants were asked to summarize the text to make sure they read it. Next, the participants were asked to take place at the table behind them where they would perform the consumer perception task. During this perception task, they performed three small tasks through which pro-environmental behaviour was measured (choosing scrap paper, throwing away the wrapping, and using paper towels). After these tasks, participants were asked to fill in an online Qualtrics questionnaire on a computer. In this questionnaire, they filled in an environmental identity scale, presented in Appendix D (van der Werff et al., 2013). This measure was part of another students' research question and was not part of the current thesis. Furthermore, the questionnaire entailed some demographic questions. These questions are visible in Appendix D. Additionally, participants filled in a list with statements on a goal-frame scale that was used to see whether the activation of the specific goal-frame was indeed induced (Onwezen, 2023). The list is presented in Appendix D. After finishing the questionnaire, participants chose whether they wanted to participate for course credits or for a monetary reward. Participants who wanted the monetary reward provided their banking details. Finally, participants read about the real

purpose of the study in a debriefing text, had the option to leave a comment, and they were thanked for their participation. After the participants left the laboratory, the experimentor observed the behaviour of the participant by looking at which type of paper was written on, counting the number of papers in the waste bin, and observing at which bin was used for the food wrapper.

Statistical Analyses

The data that was collected was analysed with the use of SPSS. All data was screened to make sure that there were no invalid items. The demographic information of the participants was assessed, and reliability analyses of the different scales were performed. Also, the assumptions of the main analyses were checked. Next, the consistency scores were assigned to each participant. The differences between the different goal-frame groups could be tested with these consistency scores. These differences were tested with a one-way ANOVA.

Results

Confirmatory Results

The current research aimed to investigate the effect of the normative, hedonic and gain goal-frame on the spillover of pro-environmental behaviour. It was expected that a normative goal-frame would be positively related to positive spillover and that a hedonic and a gain goal-frame would be positively related to negative spillover. However, as indicated in the measures, the current study measured consistency scores instead of spillover. The hypotheses therefore had to be adopted in line with the most suitable way of operationalizing and analyzing the data. It was expected that a normative goal-frame would lead to higher consistency scores of pro-environmental behaviours than the hedonic and gain goal-frame.

Prior to assessing the relationships between the goal-frames and the consistency scores, it was determined whether the initial activation of the normative, hedonic or gain goal-

frame worked. The reliability scores were assessed of the three goal-frames on the scale that measured the goal-frames. The Cronbach's alpha of the goal-frame scales was $\alpha = .70$ ($M = 4.36$; $SD = 1.53$) for the normative goal-frame, $\alpha = .73$ ($M = 5.44$; $SD = 1.12$) for the hedonic goal-frame, and $\alpha = .63$ ($M = 5.71$; $SD = 1.14$) for the gain goal-frame. The reliability scores of the three goal-frame scales were questionable to acceptable.

The items of the goal-frame scales were compared for the three goal-frames. If the goal-frame that was initially activated had the highest mean score for the corresponding goal-frame, this would indicate that the goal-frame was activated for the participant. However, as visible in Table 1, the means of the items of the goal-frame scales have limited differences. The gain goal-frame has the lowest mean score for every goal-frame scale and the hedonic goal-frame has the highest mean score for every goal-frame scale.

Table 1

Mean Goal-Frame Scale Scores and Standard Deviations for the Goal-Frames on a Scale of 1 to 7

	Goal-Frame Scales					
	Normative		Hedonic		Gain	
Goal-Frame	*M*	*SD*	*M*	*SD*	*M*	*SD*
Normative	4.46	1.07	5.43	.67	5.70	.63
Hedonic	4.56	.69	5.63	.61	5.85	.67
Gain	4.18	1.30	5.33	1.00	5.67	.67

The scores on the goal-frame scales suggest that the goal-frames were not activated for the participants. However, because of the questionable to acceptable reliability of the goal-frame scales, the effect of the goal-frames on the consistency of pro-environmental behaviour was still assessed. To investigate the effect of the normative, hedonic and gain goal-frames on the consistency of pro-environmental behaviour, a one-way ANOVA was performed. The

results showed no significant differences between the different goal-frames and the consistency of pro-environmental behaviour (F (2, 79) = .20, p = .817, η^2 = .005). The mean consistency scores for the different goal-frames are visible in Table 2.

Table 2

Consistency Scores for the Normative, Hedonic, and Gain Goal-Frame

Goal-Frame	*M*	*SD*
Normative	1.31	1.00
Hedonic	1.22	.85
Gain	1.15	.88

Exploratory Results

The current study investigated the effect of goal-frames on the consistency of pro-environmental behaviour. Additionally, the effect of goal-frames on a single pro-environmental behaviour could also be investigated. It could be that the goal-frames did not influence the consistency of pro-environmental behaviour but did influence a single pro-environmental behaviour. Therefore, this exploratory research aims to investigate the effect of the normative, hedonic and gain goal-frames on pro-environmental behaviour.

Previous research about goal-framing theory mostly relied on self-reported pro-environmental behaviour to investigate the effect of the normative, hedonic and gain goal-frame on pro-environmental behaviour (Chakraborty et al., 2017; Geng et al., 2016; Khan et al., 2022; Wang et al., 2021; Yang et al., 2020). These studies found positive relationships between the three different goal-frames and self-reported pro-environmental behaviour. The normative goal-frame had the strongest effect on self-reported pro-environmental behaviour in these studies. However, research that measured participants' actual behaviour is limited. One study that measured behaviour found positive effects of the normative goal-frame on pro-environmental behaviour and negative effects of the hedonic and gain goal-frame (Onwezen,

2023). Additionally, the current study measured actual behaviour as well. To contribute to the current literature, it would be interesting to investigate the effect of the normative, hedonic, and gain goal-frames on pro-environmental behaviour.

It was expected that the normative goal-frame would lead to more pro-environmental behaviour than the hedonic and gain goal-frame. To investigate this effect, the mean differences in pro-environmental behaviour were initially examined for the three goal-frames. These mean differences are presented in Table 3.

Table 3

Mean Scores of Pro-Environmental Behaviour on a scale of 0 (No Pro-Environmental Behaviour) to 1 (Pro-Environmental Behaviour) for the Three Goal-Frames

	Scrap Paper (T1)	Wrapping (T2)	Paper Towels (T3)
Normative	.40	.42	.47
Hedonic	.19	.48	.48
Gain	.17	.47	.60

To test the significance of the differences in pro-environmental behaviour between the different goal-frames, a one-way ANOVA was performed for every pro-environmental behaviour. For the first pro-environmental behaviour of choosing scrap paper, the results did not show a significant difference in pro-environmental behaviour between the different goal-frames (F (2, 86) = 2.96, p = .057, η^2 = .064). Nonetheless, there is a visible trend where the normative goal-frame showed higher scores of pro-environmental behaviours than the hedonic and gain goal-frame. The scores are presented in Table 3. However, based on the current data and the limited sample size we cannot yet conclude with certainty that the goal-frame activation had an effect on the choice of used or new scrap paper.

For the second pro-environmental behaviour of disposing the wrapping, the results did not show a significant difference between the different goal-frames (F (2, 85) = .12, p = .885,

η^2 = .003). For the third pro-environmental behaviour of using paper towels, the results also did not show significant differences between the goal-frames (F (2, 86) = .62, p = .541, η^2 = .014). As for the second and third pro-environmental behaviours, the normative goal-frame showed lower scores of pro-environmental behaviours than the hedonic and gain goal-frame, as visible in Table 3.

Discussion

Findings

The current research expected that a normative goal-frame would be positively related to positive spillover and that a hedonic and a gain goal-frame would be positively related to negative spillover. As mentioned in the results, the current study investigated consistency of pro-environmental behaviour instead of spillover. Therefore, the hypotheses were adapted, and it was expected that a normative goal-frame leads to higher consistency scores of pro-environmental behaviours than the hedonic and gain goal-frame.

The results revealed no significant differences among the normative, hedonic and gain goal-frames on the consistency of pro-environmental behaviour. This is not in line with the current literature about the effect of goal-frames on spillover of pro-environmental behaviour (Geiger et al., 2021; Geng et al., 2019; Steg et al., 2016). For example, a meta-analysis found that interventions that addressed normative goals led to more positive spillover than gain goals (Geiger et al., 2021).

The current study only focused on goal-frames and did not investigate other psychosocial factors such as attitude and behavioural control. However, these factors also influence pro-environmental behaviour (Bamberg & Möser, 2007). Therefore, it could be that the current research did not find an effect of goal-frames on behavioural consistency, because this consistency is not solely influenced by the goal-frames that were investigated, but by psychosocial factors as well. Future research could investigate the effect of psychosocial

factors on the consistency of pro-environmental behaviour in combination with the goal-frames to further investigate the determinants of behavioural consistency.

Exploratory Research Findings

Additionally, exploratory research investigated the effect of the normative, hedonic, and gain goal-frames on the three pro-environmental behaviours measured in this study (choosing scrap paper, throwing away the wrapping, and using paper towels). It was expected that a normative goal-frame leads to more pro-environmental behaviour across all three behaviours than a hedonic and a gain goal-frame.

The exploratory results also did not show significant differences between the three goal-frames regarding the three different pro-environmental behaviours. This diverges from existing literature about the effect of goal-frames on pro-environmental behaviour, which found that normative goal-frames led to more pro-environmental behaviour than hedonic and gain goal-frames (Chakraborty et al., 2017; Khan et al., 2022; Onwezen, 2023; Wang et al., 2021; Yang et al., 2020). However, the present research did find a trend for the first pro-environmental behaviour where more participants that were activated with the normative goal-frame chose scrap paper that was already used compared to participants that were activated with the hedonic and gain goal-frame.

After the first pro-environmental behaviour, the participants with the normative goal-frame showed lower scores of pro-environmental behaviours than the participants with the hedonic and gain goal-frame. These lower scores for the second and third pro-environmental behaviour could be the result of moral licensing. It could be that participants with the normative goal-frame felt the obligation to act in a normative manner. After showing the normative behaviour of acting pro-environmentally for the first behaviour, this responsibility had been completed. Participants therefore may have morally licensed themselves to refrain from acting pro-environmentally for the second and third behaviours. Future research could

investigate the effect of goal-frames on moral licensing in further detail. This is because the effect of moral licensing should be avoided to reduce people's carbon footprint.

Strengths and Limitations

Measuring Behaviour

The current study added to the existing literature about goal-framing theory by examining the effect of the goal-frames on actual behaviour instead of relying on self-reported behaviour and intentions. Additionally, the current study measured sequential behaviours instead of measuring behaviour at one moment in time. The discrepancies between the current and previous findings could be assigned to these methodological differences. As mentioned in the introduction, the self-reported behaviour in previous research could be influenced by social desirability bias. This bias could give a distorted image of the effect of normative goal-frames on pro-environmental behaviour, since responses that align with the normative goal-frame are often viewed as the socially desirable option (Do Canto et al., 2022). It could be that the normative goal-frame triggered participants to report more pro-environmental behaviour in previous studies compared to the hedonic and gain goal-frame. This heightened indication of self-reported pro-environmental behaviour in the normative goal-frame could have led to greater effects compared to the present research where behaviour was measured. Additionally, intentions are easier to influence than behaviours (Geiger et al., 2021). Therefore, studies that measured intentions could have found stronger effects compared to the current study that measured behaviour.

Activating Goal-Frames

Furthermore, the current study added to the literature about the effect of goal-frames on pro-environmental behaviour by activating participants' goal-frames instead of relying on participants' self-reported goal-frames. The differences between the results from the current research and previous research could also be assigned to these measurement differences. A

goal becomes focal depending on both value priorities and situational factors (Steg et al., 2014). Prior studies did not capture both internal and situational factors to measure goal-frames, but only measured internal factors (Chakraborty et al., 2017; Geng et al., 2016; Khan et al., 2022; Wang et al., 2021; Yang et al., 2020). In contrast, the current research only captured situational factors that influence goal-frames through activating the goal-frames. Values reflect which overarching goals people find most important in life in general and affect the strength of goals in a particular situation (Steg et al., 2014). Individuals' values influence whether goal-frames will be activated. It could be that past research found stronger relationships between the three goal-frames and pro-environmental behaviour, because the internal factors capture the goal-frame of a participant in more detail than solely focussing on the external factor.

Measuring the Activation of Goal-Frames

The current study aimed to activate goal-frames by having participants read a text that induced either the normative, hedonic or gain goal-frame. However, there were limited differences between participants' goal-frames among the three goal-frame groups, as visible in Table 1. Consequently, the non-significant results of the present research could be attributed to the failed activation of goal-frames.

However, the Cronbach's alpha's of the goal-frame scales did not reveal large internal consistencies but showed questionable to acceptable reliabilities (α = .70, α = .73, and α = .63 for the normative, hedonic and gain goal-frame respectively). Therefore, it could be that the goal-frames were activated, but that the goal-frame scales did not accurately measure this. Furthermore, the goal-frames were induced at the beginning of the study, and the goal-frame scale was assessed near the end of the study, with approximately twenty minutes in between both measures. Lindenberg & Steg (2007) argued that the goal-frames have different timeframes. They stated that the time frame for the hedonic goal-frame is short, since this

goal-frame aims for immediate improvement in the way one feels. For the gain goal-frame, they argued the time horizon was medium to long term. For this goal-frame people want to improve or efficiently use their resources, which differs from quick gratification to longer term efficiency. Lindenberg & Steg (2007) argued that the time frame for the normative goal-frame was long, since this goal-frame has to do with how the society would be best of in the long-run. Nevertheless, they did not give practical indications regarding the duration of these timeframes. In the present research, it could be that the goal-frames were no longer activated when the activation of the goal-frames were measured at the end of the study. Future research could investigate the time spans of the goal-frames to get a better understanding about how long different goal-frames remain activated.

Paper Towels

The amount of paper towels participants used to dry their hands was observed by examining the contents of the waste bins after the experiment. However, it could be that the paper towels in the waste bins were used for other purposes as well. For example, one participant used six paper towels because her finger was bleeding. This amount of paper towels is not a good representation of the amount of paper towels this participant used to dry her hands. Since the participants were not directly observed, it could be that other participants performed unexpected behaviour as well, which affected the amount of paper towels they used. For example, two participants did not use paper towels to dry their hands. This was labelled as pro-environmental behaviour, but there is a possibility that these participants did not wash their hands and, therefore, did not use paper towels. The possibility that participants used paper towels for other purposes than solely drying their hands could be an explanation for the insignificant differences between the effect of the goal-frames on the pro-environmental behaviour of using paper towels.

Implications

The dominance of a particular goal-frame determines to what extent people show pro-environmental behaviour (Lindenberg & Steg, 2007). The current study aimed to induce goal-frames through having individuals read a text explaining why people behave in either a normative, hedonic or gain goal-frame manner. The non-significant findings suggest that this way of framing might not be sufficient to induce a goal-frame. Previous studies did not frame participants but measured the goal-frames through self-reported items in questionnaires (Chakraborty et al., 2017; Khan et al., 2022; Wang et al., 2021; Yang et al., 2020). Therefore, different ways that normative, hedonic, and gain goal-frame can be activated among people should be determined. It could be that a more active approach, in combination with reading about the goal frames, will have a stronger activation of the goal-frame among participants. This active approach could for example be that participants are asked to write down why behaving in a normative, hedonic or gain manner is important to them, which could make them relate the goal-frames more to their personal values. A goal becomes focal depending on both value priorities and situational factors (Steg et al., 2014). This active approach combines both personal values and an external way of framing. Therefore, it could be that this approach will induce the activation of the goal-frames. Future research could investigate whether this approach induces the activation of goal-frames.

Future Research

The goal-framing theory states that goal-frames fluctuate over time and that goal-frames have different time spans (Lindenberg & Steg, 2007). As discussed, these time spans remain rather abstract, and therefore, the duration of these time frames could be investigated in future research. Participants could for instance be activated with a normative, hedonic or gain goal-frame. After this, they could do filler tasks. Next, the participants could indicate the extent to which they value different goal-frames to measure whether they are still activated. The duration of the filler tasks can vary by 5 minutes between different groups. So, for

example, the first group can perform filler tasks for ten minutes, the second group for fifteen minutes and so on. This way, the time spans of activated normative, hedonic and gain goal-frames can be measured.

Additionally, future research could also explore what psychological processes underly these differing time spans. It could be that these time frames differ because of temporal discounting, where people weigh outcomes that are attained sooner more heavily than outcomes that are attained later (Frederick et al., 2002). It could be that people with a hedonic and gain goal-frame show more temporal discounting compared to people with a normative goal-frame. This could be attributed to the fact that the first two goal-frames are more focused on immediate outcomes, such as improving the way one feels and improving one's resources, and the latter goal-frame is more focused on long term outcomes, such as decisions that promote environmental benefits in the long run.

Conclusions

In sum, by framing participants and observing three behavioural measures, the current study did not find a significant effect of the normative, hedonic and gain goal-frame on the consistency of pro-environmental behaviour. Additionally, exploratory research did not find significant effects of the normative, hedonic and gain goal-frame on the three pro-environmental behavioural measures. However, this exploratory research did find a trend for the first pro-environmental behaviour where participants with the normative goal-frame showed more pro-environmental behaviour compared to participants in the hedonic and gain goal-frame. These findings suggest that further research about goal-framing theory is needed to investigate how people can be activated with a normative, hedonic, or gain goal-frame. Future research should also investigate practical indications about the time span of the three different goal-frames and their underlying psychological constructs.

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Appendix A: Ethics Approval

Psychology Research Ethics Committee
Social and Behavioural Sciences
Leiden University

Dr. N.J. van Doesum
Social and Behavioural Sciences
Psychology
Social, Economic and Organisational Psychology
Leiden University
Wassenaarseweg 52
2333 AK Leiden

Reference number	2024-02-29-N.J. van Doesum-V2-5225	*Date*	04-03-2024
Subject	Approval	*Telephone*	071 5276661
		Contact	ethiekpsychologie@fsw.leidenuniv.nl

Dear Dr. N.J. van Doesum,

This is to declare that the Leiden University Psychology Research Ethics Committee, Leiden, The Netherlands, reviewed the research proposal with number 2024-02-29-N.J. van Doesum-V2-5225 and entitled: *Juggling green and non-green intentions (MA-theses 2024)*. The study is of the type: Standard. The Committee approved the proposal on 04-03-2024.

Please be aware that if you decide to make any changes to the design, procedures, number of participants, or instruments to be used, you need to notify the Psychology Research Ethics Committee by amendment. In case of any change, you will need to wait for approval of the proposed change before you can conduct the changed study.

Note that you need to make sure that you are sufficiently comfortable with privacy-compliance and information security questions before collecting any personal data. The Faculty's privacy officer (privacy@fsw.leidenuniv.nl) can help you with GDPR compliance, data transfer/processing issues, information security, and assist you with legal agreements related to data transfer/processing.

In case of a multi-centre trial, approval is hereby granted for the part that is being carried out at Leiden University, but can only start at the other centre(s) after having obtained a Declaration of Feasibility within the specific centre(s).

The approval of your proposal by the Ethics Committee is valid for a period of five years. In case there is a delay in the start of the study of more than six months, please send an email to the CEP (ethiekpsychologie@fsw.leidenuniv.nl) in order to notify the committee about this delay.

With kind regards,
The Psychology Research Ethics Committee

Appendix B: Goal-Frames

Normative

Please read the following passage carefully. Take your time to understand the content. After reading the passage, you will be asked a question to measure your reading comprehension. At the bottom of the screen, you can see how much time you have left.

Individuals often make behavioural choices based on what they are ought to do and what is thought to be right or wrong (Lindenberg & Steg, 2007). People are influenced by a combination of societal expectations, ethical considerations, and the perceived dichotomy between what is deemed appropriate and what is considered incorrect. The intricate interplay of these factors shapes our understanding of right and wrong, prompting us to navigate our actions based on a set of implicit guidelines.

When we are determining the boundaries of acceptable behavior, we rely on the information derived from our immediate surroundings. These environmental cues serve as signs, illuminating the preferred conduct in various situations and offering insights into the norms followed by those around us. The human psyche is inherently attuned to the notions of what one "ought" to do and how others are currently behaving.

As an example, individuals may consciously opt to secure their bicycles in a designated stand a few meters away from a store, rather than casually parking them on the sidewalk in front of the establishment. This decision is not driven by a desire to expend additional effort but is rooted in the belief that such an action is socially perceived as the "appropriate" response in that particular context. This adherence to societal norms may also stem from the observation that the sidewalk is free from bicycles while the designated stand is populated with them. The individual, consciously or subconsciously, aligns their behavior

with the prevailing pattern, recognizing that others who visit the store tend to exhibit similar conduct.

This also applies to consumer behavior. Consumers may choose products and brands that align with their moral values and beliefs. In essence, the environment provides subtle cues that influence individual choices, reinforcing the collective understanding of what is considered right or wrong within a given social context.

Individuals, driven by a shared understanding of what is considered worthwhile, find themselves working collectively towards common objectives. This shared vision, woven into the fabric of everyday life, ensures a smoother and more coordinated interaction among members of a society. It creates a sense of order and predictability, fostering a stable foundation for individual and communal growth.

Gain

Please read the following passage carefully. Take your time to understand the content. After reading the passage, you will be asked a question to measure your reading comprehension. At the bottom of the screen, you can see how much time you have left.

The timeless wisdom encapsulated in the phrase "Time Is Money" traces its origins back to the 1748 essay, 'Advice to a Young Tradesman' by Benjamin Franklin. This phrase underscores the intrinsic connection between time and financial prosperity, urging individuals not to waste the precious commodity of time as it holds the potential to be a valuable asset for earning money. In modern society, this phrase remains relevant, serving as a reminder that effective time management can translate into financial savings.

As articulated by Mogilner and Norton (2016), time and money stand out as the twin pillars of human resources, with both holding significant sway over the choices and

opportunities available to individuals. The longing for an augmentation of these resources is a sentiment shared by many, as highlighted by the research of Hershfield et al. (2016). In the pursuit of a more abundant existence, individuals often seek strategies to enhance their allocation of both time and money.

One practical suggestion for optimizing time utilization is the strategic prioritization of tasks. By discerning and focusing on high-priority assignments, individuals can channel their efforts toward endeavors that align with their overarching goals. This deliberate approach not only enhances productivity but also ensures that time is invested in activities that contribute to personal and professional objectives.

Additionally, minimising 'time wasters' forms another avenue for time-saving. Steering clear of unproductive meetings and restraining from aimless scrolling on social media are effective measures to reclaim valuable time that might otherwise be lost. These small adjustments in behavior can cumulatively result in more efficient use of time and, consequently, contribute to increased productivity.

This also applies to consumer behavior. Cautious budgeting and making lists to avoid overspending on impulsive purchases emerges as a valuable tip to save money. Deliberately managing income and expenses allows individuals to gain a clear understanding of their financial landscape. This, in turn, facilitates informed decisions regarding areas where money can be saved or spend more wisely. A thoughtful budgeting approach lays the groundwork for financial stability and responsible resource management.

In conclusion, the symbiotic relationship between time and money underscores their status as invaluable resources. As individuals seek to optimize their existence, strategic time management and fiscal cautiousness become crucial elements. By implementing practical tips such as task prioritization and budgeting, individuals can not only preserve but also enhance their most precious resources—time and money—with care and intention. While time itself

cannot be extended, the conscious and efficient use of the time available can lead to a richer and more rewarding existence.

Hedonic

Please read the following passage carefully. Take your time to understand the content. After reading the passage, you will be asked a question to measure your reading comprehension. At the bottom of the screen, you can see how much time you have left.

Throughout the course of human history, there has been a consistent recognition of the positive correlation between engaging in various enjoyable activities and fostering emotional well-being. The intrinsic connection between pleasurable experiences and an enhanced mood has been a constant in the human experience. The absence of these activities from our daily lives can introduce an additional layer of stress, highlighting the importance of incorporating joy into our routines as a means of mitigating life's challenges.

Recognizing the pivotal role that emotions and mental well-being play in navigating daily issues, it becomes crucial for individuals to prioritize activities that bring pleasure and alleviate stress and negative thoughts. Seeking avenues to enhance one's emotional state is not merely a luxury but a fundamental aspect of holistic well-being. An effective strategy is to proactively introduce elements of joy into daily life, such as indulging in binge watching one's favorite series or savoring a hot beverage that has been a source of craving throughout the day.

Moreover, the spectrum of mood-enhancing activities extends to simple yet effective practices like taking a leisurely walk, which has been proven to elevate mood and energy levels. Alternatively, some individuals discover comfort in the therapeutic qualities of music, either as a tool for relaxation or as an accompaniment to physical exercise, such as dancing.

Social interactions also play a crucial role, with activities like spending time with friends, going to the cinema, or indulging in a shopping spree being commonly associated with an increase in pleasure. As such, pleasurable experiences also play a key role in consumer behavior.

It is essential to recognize the diverse array of activities that serve as stress-relievers for different individuals. Whether it's the simple joy of a solitary walk, the rhythm of music, or the companionship of social outings, the key lies in identifying what works best to improve emotional and mental health. This process of self-discovery becomes an ongoing journey, allowing individuals to tailor their approach to stress reduction based on personal preferences and needs.

In conclusion, the pursuit of emotional and mental well-being is intricately linked to the intentional inclusion of pleasurable activities in our lives. The array of options available, ranging from personal satisfaction to social engagements, offers a rich tapestry of choices for individuals seeking to elevate their emotional state. As we navigate the complexities of daily existence, the cultivation of joy becomes not only a coping mechanism but a vital component of a holistic approach to overall health and happiness (Helton, 2023).

Appendix C: Instruction Sheet

Instruction sheet

Step 1: Take a piece of paper and a pen to take notes of your opinions about the snack.

Step 2: Enjoy the snack and while taking notes about it.

Step 3: Please, dispose of the snack wrapper when you are finished.

Step 4: Next, please wash your hands before using the computer again.
(We want to ensure cleanliness since we're using a shared lab space.)

Step 5: Take your notes sheet and return to the computer to answer some final questions.

Appendix D: Survey

B.1 Demographics

1. What is your age (numbers only)?
2. What gender do you identify to? (multiple choice)
3. What is your highest education level? (multiple choice)
4. Do you live in a rural area or in a city? (rural area or city, multiple choice)
5. Are you vegan (multiple choice)?
    - If yes: In the previous question you mentioned that you are vegan. Would you mind sharing why? (open answer)

B.2 Environmental Self-Identity Scale (van der Werff et al., 2013)

1. Acting environmentally friendly is an important part of who I am. (Likert scale)
2. I am the type of person who acts environmentally friendly. (Likert scale)
3. I see myself as an environmentally friendly person. (Likert scale)

B.3 Goal-Frame Scales (Gain frame: items 1-6, Hedonic frame: items 7-11, Normative frame: items 12-15)

When deciding between a regular and a pro-environmental option, the following goals are important to me:

1. Financial well-being: economic choices, price-consciousness to maintain or improve one's financial situation
2. Price advantages: a good price/quality ratio
3. Improving health: improving one's health in the future
4. Improving well-being: feeling good in the future
5. Safety: safe choices

6. Future improvement: choices that will improve one's life in the future
7. Good feeling: emotion, a pleasant and good feeling
8. Tasty: taste, experience, and perception
9. Pleasure: improving short-term well-being, pleasure, fulfilment of desires
10. Pampering oneself: enjoying pleasant activities
11. Enjoying life: relaxing and enjoying
12. Right behaviour: making choices that fit the values of one's friends and family
13. Social environment: making choices approved by environmentalists
14. Prestigious behaviour: showing others that one is doing what is right
15. Self-confidence: seeing oneself as a good person in the eyes of others, strengthening one's self-confidence

Appendix E: Trash Bin Labels

Figure 1

Regular Waste Bin Label

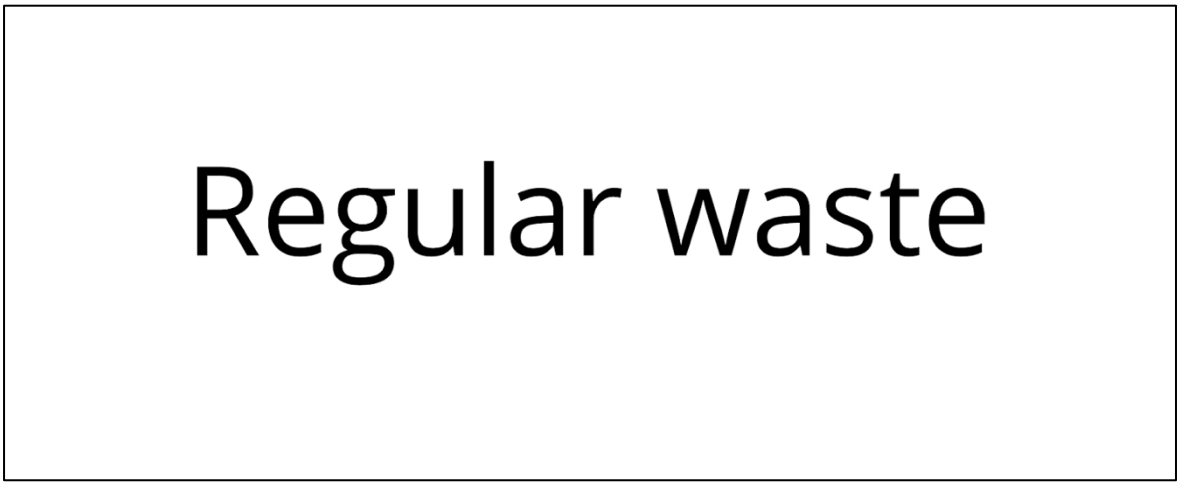

Figure 2

Plastic Waste Bin Label

Figure 3

Paper Towels Bin Label

Appendix F: Washing Hands Instructions