

The Amplification effect of Shared Experiences

A way to bridge the pro-environmental behaviour-attitude gap

Aafke de Leeuw (4261771)

Mayke Hoyneck van Papendrecht (5497981)

Ryanne Pisa (5537428)

Supervisor: Janina Steinmetz

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Utrecht University



Utrecht University

Abstract

Even when people think sustainable behaviour is important, this does not necessarily mean that they will show pro-environmental behaviour. The current research tries to bridge this attitude-behaviour gap by making people find meaning in every single goal-directed action. We test the hypothesis that a shared experience of working on a sustainable task can make actions feel more meaningful, thereby increasing the motivation towards sustainable behaviour. Furthermore, we hypothesise that this amplification effect of a shared experience will be even stronger when they are psychologically close to each other. In this study, participants had to work on a task choosing the most sustainable product and answer questions about their perceived impact and motivation. No evidence was found for a higher perceived impact and motivation for people who worked together on a sustainable task (co-experiencers) in comparison to people who did not share the experience. Additionally, there was no effect when co-experiencers were more psychologically close to each other nor when they were psychologically distant from each other. We suggest that for future research it is important to create a connectivity between co-experiencers when they are doing the task in different rooms because people tend to quickly forget that they are sharing an experience. As people share a lot of experiences together even without communicating, the amplification of shared experiences is an interesting phenomenon for further research, especially in combination with sustainability. It could increase perceived impact and motivation of individual actions and thereby be a new and insightful way of changing people's lifestyle in favour for pro-environmental behaviour.

Keywords: amplification effect, shared experiences, goal pursuit, sustainability, sustainable behaviour, collective goals, impact, motivation, psychological proximity

Nederlandse abstract:

Ondanks dat mensen weten dat duurzaam gedrag van belang is, betekent dit nog niet dat mensen daadwerkelijk duurzaam gedrag vertonen. Huidig onderzoek probeert deze attitude-gedrag kloof te overbruggen door middel van betekenisgeving aan elke goal-gerelateerde handeling. In dit onderzoek wordt verwacht dat handelingen meer betekenis krijgen, zodra deze handeling wordt gedeeld met een andere persoon. Daarnaast verwachten we dat de *amplification effect* van een gedeelde ervaring sterker wordt naarmate mensen zich meer verbonden voelen met elkaar. Om dit te testen werd aan participanten een taak voorgelegd waarbij ze het meest duurzame product moesten kiezen, gevolgd door een korte vragenlijst over de waargenomen impact en motivatie. Echter, er is geen bewijs gevonden voor een hogere waargenomen impact en motivatie voor mensen die gedeelde ervaring hadden met betrekking tot het uitvoeren van een duurzame taak (productkeuze). Tevens is er geen effect gevonden voor mensen die zich meer met elkaar verbonden voelde ten opzichte van mensen die dit niet voelde. Een limitatie van het onderzoek is dat het experiment is uitgevoerd in verschillende ruimtes wat het gevoel van verbondenheid heeft kunnen ondermijnen. Voor vervolgonderzoek is het daarom van belang dat er een setting wordt gecreëerd waarin de participanten zich meer met elkaar verbonden voelen. Aangezien mensen in het dagelijks leven veel ervaringen met elkaar delen en duurzaamheid steeds centraler is komen te staan, is het *amplification effect* in relatie met duurzaamheid een interessant fenomeen voor verder onderzoek.

Keywords: Amplification effect, gedeelde ervaringen, collectieve doelen, duurzaamheid, duurzaam gedrag, impact, motivatie, psychologische verbondenheid

Introduction

In the past few years, there has been greater attention within society and academic circles for the changing environment and the problems that come with it (Urien & Kilbourne, 2011). Sustainable behaviour, or in other words, environmentally responsible consumption behaviour, has become a major social issue (Urien & Kilbourne, 2011). To develop this sustainable behaviour, it is essential that people's individual lifestyle changes (McDonald, Oates, Young & Hwang, 2006). However, research has shown that even when people think sustainability is important, this does not necessarily mean that they will show pro-environmental behaviour (Carrigan & Attalla, 2001). Reasons for this attitude-behaviour gap are among other things that a single action to behave more sustainably by itself can feel insignificant or meaningless, because solving the current environmental problems depend on the behaviour of a large number of people (Klößner, 2013). Research has shown that people who feel that their actions are meaningful, and thus have impact, are more motivated than people who do not feel that their actions have impact. The perception of impact is especially relevant for self-regulation, because it provides information about the degree of progress people are making on their goal and their level of commitment (Steinmetz, Xu, Fishbach & Zhang, 2016). Therefore, one of the most important ways to bridge the attitude-behaviour gap is to make people find meaning and motivation in every single goal-directed action.

One way to make actions feel more meaningful is by sharing them with others. Researchers Boothby, Clark and Bargh (2014) have found that sharing an experience with someone else, will make this experience feel more intense compared to an unshared experience. For example, eating chocolate at the same time as someone else will make that person like the chocolate more than when the other person is not eating chocolate, but doing a different activity. When viewing images with a friend, the images were liked better compared with viewing the images alone (Shteynberg et al., 2014). This research suggests that shared experiences are amplified even without communication between people (Boothby et al., 2014). Additionally, Boothby, Smith, Clark and Bargh (2016) investigated whether psychological distance moderates the amplification effect of shared experiences, that is, whether people who feel closer to each other perceive their experience as more pleasant than people who are less close. They concluded that participants who were psychologically close felt that their experience was more pleasant compared to participants who were psychologically distant. From this research it seems that above all, shared experiences are amplified more when people who share the experience know or get to know each other

beforehand. This effect was not found when participants were physically distant (e.g. in different rooms) (Boothby et al., 2016). In contrast to previous research, Carr and Walton (2014) examined whether the amplification effect would occur even when people were physically alone. In this study, participants were manipulated with cues to make them believe they were working with someone else, for example by getting a fake tip from the other participant to solve the puzzle they were working on. So although participants were physically alone, they were aware of the fact that other people were doing the same task at the same time. The research of Carr and Walton (2014) showed that these reminders of another person working on the same task at the same time, increased participants intrinsic motivation even though they were alone. Additionally, these participants were more interested in the task, performed better and had more fun doing it.

From these and more research it is clear that engaging in activities together can alter one's experience (Shteynberg et al., 2014; Boothby et al., 2014; Carr & Walton, 2014; Martin et al., 2015; Boothby et al., 2016). However, how exactly this amplification effect occurs is still mostly unexplored. For example, no research has been done in combination with the amplification effect of shared experiences and fulfilling a group goal like sustainability. The previous described experiences were all individual actions, like eating chocolate or solving a puzzle. In the case of sustainable behaviour, we are not only talking about individual actions, but also about individuals pursuing a collective goal. Research has shown that people pursuing group goals are more likely to consider the joint benefits of their in-group, because they are in a closer relationship with each other (Fishback, Steinmetz & Tu, 2016). This is especially interesting in the case of pro-environmental goals, since sustainable behaviour can be disadvantageous for the individual, like having to eat less meat, paying more for sustainable products or using less electricity, but beneficial for the group (less environmental problems). Yet the closer people are to others, the more likely they are to coordinate with others' goal pursuit, even if this could be disadvantageous for themselves (Fishbach et al., 2016). This means that people who are closer to each other, such as in-group members, will be more motivated to work on shared goals in comparison to people who share goals but have no relationship with each other. In combination with the results of Boothby et al (2016), sharing a goal-directed action with an in-group member could further increase the perceived impact of that action, thereby increasing the motivation for the collective goal.

To bridge this knowledge gap, the current research will explore whether a shared experience of working on a sustainable task can make actions feel more meaningful, thereby increasing the motivation towards sustainable behaviour. Based on the results of Steinmetz et

al. (2016), we expect that people who perceive that their individual actions have more impact, will be more motivated towards sustainable behaviour than people who feel that their actions have less impact (see relationship B in figure 1). Furthermore, based on the results of Carr and Walton (2014) and Boothby, Clark and Bargh (2014), we expect that people who share the experience of working on a sustainable task (co-experiencers) will feel that their actions have more impact and thus be more motivated towards sustainable behaviour than people who work alone. Additionally, based on the results of Boothby, Smith, Clark and Bargh (2016), we expect that co-experiencers who are more psychologically close will be more motivated towards sustainable behaviour than co-experiencers who are psychologically distant (see relationship A and C in figure 1).

Overall, integrating collective goal pursuit like sustainable behaviour with the amplification effect of shared experiences, is an important contribution to society and social sciences. If a shared experience of working on a sustainable task can make sustainable actions feel more meaningful and increase people’s motivation, it would mean that it could bring interesting insights into new ways of bridging the gap between a pro-environmental attitude and behaviour. This could change people’s lifestyle and thereby lessen environmental problems. In addition, it provides new information on how individuals can pursue group goals when they engage in activities together.

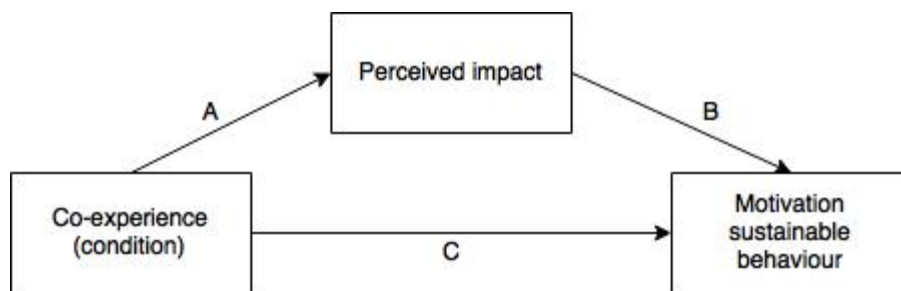


Figure 1. Hypothesis 1 describes relationship B in this figure. Hypothesis 2 describes relationship A and C.

To test the amplification effect the following hypotheses were generated:

Hypotheses 1: People who perceive that their actions have more impact, will be more motivated towards sustainable behaviour than people who feel that their actions have less impact.

Hypothesis 2a: People sharing the experience of working on a sustainable goal will feel that their actions have more impact and thus be more motivated towards

sustainable behaviour than people who work on a sustainable goal alone.

Hypothesis 2b: Co-experiencers who are psychologically proximate will feel that their actions have more impact and will be more motivated towards sustainable behaviour than co-experiencers who are psychologically distant.

Methods

To examine the phenomenon of the amplification effect, this study is employed as a between-subjects design. Participants were divided into three conditions: the shared experience condition, the social proximate condition and the neutral condition. The conditions will be further explained under procedure.

Participants

There were in total 152 participants (104 women and 48 men), of which 96.7% were students. There were 53 participants in the shared experience condition, 43 participants in the social proximate condition and 56 participants in the neutral condition. The study was conducted in the lab at the Science park of Utrecht University. At this university, students were recruited to participate in a study on ‘sustainable behaviour’ in exchange for either a piece of chocolate or .25 participation points (Psychology students are obligated to participate in several experiments to earn these points). Participation was voluntary and anonymity was assured. On average, participants were 21.57 years old ($SD = 2.947$). One participant was excluded from the experiment, because he/she told us after the experiment that he/she did the experiment for the second time. A notation was made which can be seen in the raw data. The exclusion of this participant made no difference for the outcome of our research.

Materials

The experiment was conducted with an online survey program called Qualtrics. First the participants had to do a small task in which they were shown two similar products, 14 times in total. The products differed for example in packaging or a sustainability label (see figure 2). Participants were instructed to choose the most sustainable product out of two similar products. As buying products is a daily task for most people, choosing a sustainable product instead of a non-sustainable product is an important part of pro-environmental behaviour by individuals and thus for sustainability. After the task, participants were asked to fill in two short questionnaires about their perceived impact and their motivation to choose sustainable products. Each topic consisted of four statements (e.g. “I think that the sustainable choices I make, have an impact on the environment” or “I am motivated to live sustainably”; see Appendix 1) and participants were instructed to rate the strength of their agreement on a 7-point Likertscale from 1 (completely disagree) to 7 (completely agree). Afterwards participants had to fill in some demographic data such as gender, age and whether they were

currently students at Utrecht University. The collected statistical data about demographics and the questionnaires were analysed using SPSS (version 23).



Figure 2. Example task, choosing the most sustainable product

Procedure

The researchers asked students at the Utrecht University campus to participate in the experiment and took each participant after consent to the lab to complete the experiment. The experiment was in Dutch and would take a maximum of 10 minutes. Beforehand Qualtrics randomly determined which condition the participant would belong to. In the shared experience condition, participants were told prior to starting the experiment that the researcher would wait outside for questions, because there was another participant doing the same experiment in the room next to this one at the same time. In the social proximate condition, a confederate (one of the other researchers) waited outside the lab and approached the recruiting researcher when she entered the lab together with a participant. The confederate then asked the researcher if they were running the experiment on sustainable behaviour and that she had made an appointment through E-mail. The researcher would then ask the participant and the confederate to wait a few minutes, because she had to quickly set up the other computer now that there were two participants. The confederate and the participant then spent a few minutes together to 'break the ice', in which the confederate would start a conversation with the participant, asking questions like "what are you studying right now?" and "what is your name?". In the neutral condition, participants were brought to the lab and did not get any extra information about other participants nor did they meet anyone.

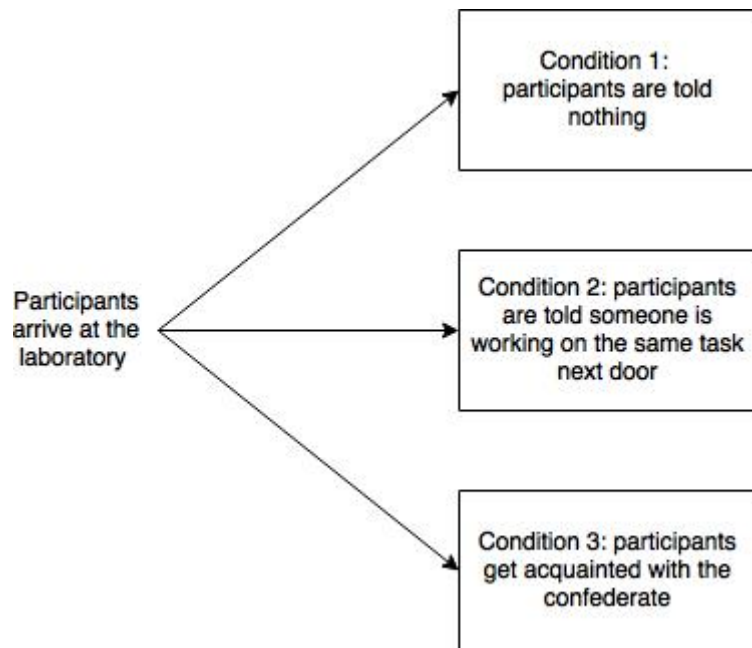


Figure 3. The three different experimental conditions in which the participants were randomly divided.

Pre-test

Before officially starting the experiment, we pre-tested our experiment. We asked 9 students to fill in the experiment, while ignoring the experimental conditions. We asked them to look for faults, such as whether the pictures of the products and the questionnaires about impact and motivation were clear enough. At their suggestions, we deleted a few pictures which turned out to be unclear. There were no problems with the questionnaires about impact and motivation. Additionally, to check if the pre-test was reliable, we analysed the reliability of the two short questionnaires. The Cronbach's Alpha of impact was sufficiently reliable, with $\alpha = .765$ ($M = 20.050$, $SD = 4.047$) and the Cronbach's Alpha of motivation was also sufficiently reliable with $\alpha = .830$ ($M = 21.30$, $SD = 4.190$) (Evers, Lucassen, Meijer & Sijtsma, 2009).

Results

First, the descriptive statistics were conducted to check if there were any notable remarks. The demographic characteristics (mean scores and standard deviations) of the participants are shown in table 1.

Table 1

Descriptive statistics of the participants

	Neutral	Shared experience	Socially proximate	Total
Number of participants	56	53	43	152
Age (years)				
Mean (<i>SD</i>)	21.730 (2.901)	21.66 (3.530)	21.230 (2.147)	21.570 (2.947)
Sex (N (%))				
Male	21 (37.500)	14 (26.415)	13 (30.233)	48 (31.579)
Female	35 (62.500)	39 (73.585)	30 (69.767)	104 (68.421)
Occupation student (N (%))	55 (98.2)	51 (96.2)	41 (95.3)	96.700

Secondly, a reliability analysis was conducted of the questionnaires impact and motivation. The Cronbach's Alpha of impact was sufficiently reliable, with $\alpha = .763$ ($M = 20.090$, $SD = 4.030$) and the Cronbach's Alpha of motivation was also sufficiently reliable with $\alpha = .831$ ($M = 21.32$, $SD = 4.195$) (Evers, Lucassen, Meijer & Sijtsma, 2009).

Then we tested the relationship between impact and motivation using a Pearson correlation with an alpha-level of .05. The result showed that there is a significant positive relationship between motivation and impact, $r = .593$, $p < .001$. This is a large effect size (Field, 2013).

This result is consistent with the expectation that people who feel their actions have more impact will be more motivated than people who feel their actions have less impact (hypothesis 1).

The One-way ANOVAs revealed no significant relationship between sharing an experience and impact, $F(2, 151) = 1.533, p = .219$, nor for motivation, $F(2, 151) = 1.757, p = .176$.

This means that the participants of the shared experience condition and the socially proximate condition did not report higher levels of impact ($M_{neutral} = 4.938, SD = .956$; $M_{sharedexperience} = 4.930, SD = 1.012$; $M_{socialproximate} = 5.250, SD = 1.054$) nor higher levels of motivation ($M_{neutral} = 5.210, SD = .962$; $M_{sharedexperience} = 5.255, SD = 1.164$; $M_{socialproximate} = 5.581, SD = .988$) than participants who were assigned to the neutral condition, as seen in figure 4. These results are inconsistent with our expectations and hypotheses 2a and 2b are rejected, since relationship A of figure 1 was not found, conducting a mediation analysis would be uninformative.

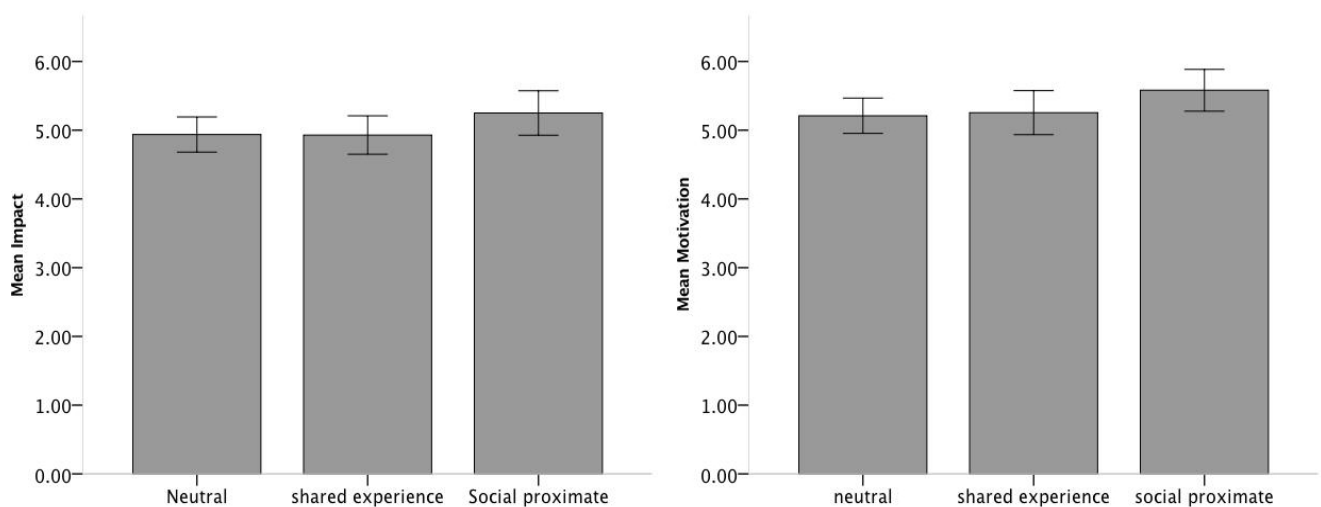


Figure 1. Participants who shared the experience and were socially proximate did not differ on their mean score on perceived impact (left graph) and motivation (right graph) in comparison to participants in the neutral condition.

note: Error bars represent 95% confidence intervals.

We did an additional analysis to see if there are differences in gender. The Univariate analysis of Variance revealed that there was a significant relationship between gender and motivation, $F(1,151) = 17.409, p < .001, \eta^2 = .107$ (medium large effect). On average,

women scored higher on motivation than men ($M_{\text{women}} = 5.577$, $SD = .098$; $M_{\text{men}} = 4.841$, $SD = .147$). There was also a significant relationship between gender and impact, $F(1,151) = 8.926$, $p = 0.003$, $\eta^2 = .058$. (medium effect). On average, women scored higher on impact than men ($M_{\text{women}} = 5.194$, $SD = .097$; $M_{\text{men}} = 4.675$, $SD = .144$). Furthermore, there was no interaction effect between gender and condition on impact, $F(2,151) = .897$, $p = .410$, nor an interaction effect between gender and condition on motivation, $F(2,151) = .255$, $p = .775$. So both men and women did not report higher levels of impact and motivation in the shared experience condition and the socially proximate condition in comparison to the neutral condition.

Discussion

In line with our expectations, people who feel that their sustainable actions have more impact, will be more motivated towards pro-environmental behaviour. However, contrary to our expectations, our findings indicate that people sharing the experience of working on a sustainable goal did not differ on their feeling of impact and motivation compared to people who did not share the experience. Additionally, co-experiencers who got to know the confederate beforehand did not differ on their perceived impact and motivation from co-experiencers who did not get acquainted with the confederate. This is in contrast to prior research which indicated that sharing an experience can amplify the perceived impact and motivation of working on the same task (Boothby et al., 2014; Boothby et al., 2016). There are different explanations for these results.

First of all, the prior research that we based our experiment on stretched the importance of creating a connection between the two co-experiencers. It seems that across these studies, the amplification effect occurs in situations when the other person could possibly be of further importance to the participant, for example a possibility of future interaction (Boothby et al., 2016). It seems that getting shortly acquainted with each other beforehand or telling the participants that there is another person doing the same experiment next door, as we did in our research, is not enough to create this feeling of connectivity or psychological proximity when participants are physically apart when doing the task. It seems that when participants do not directly see that they share the experience, they quickly forget that they are sharing it, and so the amplification effect does not occur. This is in line with some of the results of Boothby et al. (2016) and the research from Carr and Walton (2014) mentioned in the introduction, from which we can infer that it is important to remind participants of the fact that they are sharing the experience. Therefore, for future research we suggest that this can be accomplished by for example connecting participants through a live-feed or giving them cues or hints in the middle of the experiment that they are not doing it alone.

Secondly, even after doing the pre-test, a lot of participants commented on some of the choices between the products in the task. For example, a few choices were between biological and non-biological products. Participants indicated that they believed that biological products are not by definition more sustainable than non-biological products and they would have rather chosen neither option than one or the other. The fact that they could not choose such an option could have lowered participants' feeling of impact, perhaps even

overriding the occurrence of the amplification effect. This ambiguity could have threatened the face-validity of our research, since the first impression of some of the participants about the task was vague (DeVon et al., 2007). The perceived impact and motivation of participants could have been influenced by this uncertainty about the products and not by the amplification effect of a shared experience, as we wanted to measure. The ambiguity of sustainable products is in line with the academic discussion in which it is still unclear what qualifies as sustainable behaviour (Moisander, 2007). The perplexity of information about sustainability creates considerable barriers in favour of pro-environmental behaviour, because it is hard for individuals to know what is truly sustainable, as is seen in the comments by the participants about sustainable products in our experiment. Therefore, it will be better for future research if the participants are either given a clear definition of sustainability beforehand or given the option to fill in neither. This way participants will feel more confident in their choices and it will not result in a possibility of lowered perceived impact.

We additionally note that we could have strengthened the perceived impact of participants by including a clear collective goal related to sustainability to be pursued. For example, instructing the participants before starting the task that they were going to make a shopping list of the most sustainable products, thereby giving them a clear purpose throughout the task. This is in line with previous research suggesting that specific and challenging goals motivate people whereas ambiguous goals do not (Ordóñez, Schweitzer, Galinsky, & Bazerman, 2009). Now, we feel that in our research the task was insufficiently related to an activated clear goal, which made the choices of the actual task feel less meaningful and could have influenced the answers on the questionnaires about impact and motivation.

Interesting to note is that in our research we only looked at whether the experience would be amplified in a positive way, but an experience can also be amplified in a negative way. For example, eating chocolate that you do not like will make you dislike the chocolate even more when someone else is also eating chocolate next to you (Boothby et al., 2014). This means that a negative feeling towards sustainable behaviour can also be amplified when the experience is shared. For example, when participants believe climate change does not exist and therefore feel that the fuss around environmental problems is annoying, they would most likely feel that their choices are meaningless and would not feel motivated towards sustainable behaviour. According to Boothby et al (2014) these negative feelings would be amplified when they share the experience of working on a sustainable task with someone else, because their perceptions of the other's thoughts and feelings would be intricately linked

with their own perceptions. Consequently, such participants would most likely score significantly lower on perceived impact and motivation when the experience is shared compared to unshared. However, in contrast to prior research, we did not find an effect of amplification for either positive or negative feelings.

In addition to the suggested hypotheses, we found a difference in men and women with regard to the perceived impact on sustainability. On average, women scored higher on the impact and motivation questionnaires compared to men regardless of condition. An explanation for this can be found in previous research which shows that women are more concerned about sustainability and pay more attention to sustainability labels than men (Grunert, Hieke & Wills, 2014), such as a fairtrade label as seen in figure 2. For further research, it might be interesting to see whether this effect would also occur in combination with the amplification effect, making women perhaps the primary target for interventions directed at buying sustainable products.

To conclude, the current research explored whether sharing an experience of working on a sustainable task could make sustainable actions feel more meaningful, thereby increasing the motivation towards sustainability. Though perceived impact was positively related to motivation, we did not find any evidence for the amplification of shared experiences. Still, we stress the importance of further investigation into the amplification effect with the discussed limitations in mind. People share a lot of experiences in everyday life without communicating with each other. Therefore, we believe that the amplification effect of shared experiences could be an interesting tool to change people's lifestyle in favour for pro-environmental behaviour and thereby contributing to solving current environmental problems.

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Appendix 1.

Questionnaire impact:

Geef in onderstaande stellingen aan in hoeverre jij het met de stelling eens bent.

	Helemaal mee oneens	Mee oneens	Een beetje mee oneens	Niet mee oneens/niet mee eens	Een beetje mee eens	Mee eens	Helemaal mee eens
Ik denk dat de keuzes die ik net gemaakt heb, duurzamer waren dan de andere optie.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik denk dat de duurzame keuzes die ik maak impact hebben op het milieu.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik denk dat mijn keuzes een verschil kunnen maken voor het klimaatprobleem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik heb het gevoel dat ik een bijdrage lever aan het verhelpen van het klimaatprobleem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Questionnaire motivation:

Geef in onderstaande stellingen aan in hoeverre jij het met de stelling eens bent.

	Helemaal mee oneens	Mee oneens	Een beetje mee oneens	Niet mee oneens/niet mee eens	Een beetje mee eens	Mee eens	Helemaal mee eens
Ik ben gemotiveerd om duurzaam te leven.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik vind het belangrijk om stil te staan bij het milieu.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik ben bereid om duurzame producten te kopen, ondanks dat ze duurder zijn.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ik wil meer nadenken over het milieu bij mijn keuze voor producten.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix 2. Informed Consent

Beste participant,

Allereerst bedankt voor het deelnemen aan dit onderzoek!

Het doel van dit onderzoek is om verder inzicht te krijgen in de kennis van mensen over duurzame producten. In de taak die je zo voorgelegd krijgt, moet je een keuze maken tussen twee producten. Kies het product waarvan jij denkt dat deze het meest duurzaam is. Daarna volgt een korte vragenlijst en een aantal vragen over wat demografische gegevens. We zullen je niet vragen om je naam of andere identificeerbare gegevens in te vullen. Het experiment zal ongeveer 5-10 minuten in beslag nemen.

Er zijn verder geen risico's bij het deelnemen aan dit onderzoek. Je zult niet onder druk worden gezet om een antwoord te geven en er zal geen oordeel worden geveld over je antwoorden. Je mag alle tijd nemen die je nodig hebt om de vragen te beantwoorden.

De persoonlijke gegevens zullen strikt vertrouwelijk behandeld worden. Om wetenschappelijke transparantie mogelijk te maken, zullen de anonieme resultaten van dit onderzoek eventueel gebruikt worden door derde partijen.

Als je verder nog vragen hebt over dit onderzoek, kun je contact opnemen via experimentduurzaamheid@gmail.com

Veel succes!

Het onderzoeksteam

Appendix 3. Syntax

Make new variable for problem cases -> exclude problem -> 1 is yes, 0 is no

Data -> select cases -> if statement, only include if 1

```
DATASET ACTIVATE Dataset_1
COMPUTE filter_$=(Probleem=0).
VARIABLE LABELS filter_$ 'Probleem=0 (FILTER)'.
VALUE LABELS filter_$ 0 'Not Selected' 1 'Selected'.
FORMATS filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE.
```

Capital letters condition change into small letters.

condition 'blank' = neutral (notation by researcher)

Condition 'no' = niet ontmoeten

```
RECODE Q57 ('neutraal'=1) ('niet ontmoeten'=2) ('ontmoeten '=3) INTO Conditie.
EXECUTE.
```

D1 = Gender -> change measure to nominal

D2 = age -> change type to numeric

D3 = Student UU -> change measure to nominal

```
DESCRIPTIVES VARIABLES=D1 D2 Conditie D3
/STATISTICS=MEAN STDDEV MIN MAX.
```

```
FREQUENCIES VARIABLES=Conditie D1 D2 D3
/HISTOGRAM NORMAL
/ORDER=ANALYSIS.
```

```
DATASET ACTIVATE DataSet3.
```

```
CROSSTABS
```

```
/TABLES=D1 BY Conditie
```

/FORMAT=AVALUE TABLES

/CELLS=COUNT

/COUNT ROUND CELL.

CROSSTABS

/TABLES=D2 BY Conditie

/FORMAT=AVALUE TABLES

/CELLS=COUNT

/COUNT ROUND CELL.

COMPUTE Impact=(S1_1+S1_2+S1_3+S1_4)/4.

EXECUTE.

COMPUTE Motivation=(S2_1+S2_2+S2_3+S2_4)/4.

EXECUTE.

DESCRIPTIVES VARIABLES=Impact Motivation

/STATISTICS=MEAN STDDEV MIN MAX.

FREQUENCIES VARIABLES=Impact Motivation

/HISTOGRAM NORMAL

/ORDER=ANALYSIS.

RELIABILITY

/VARIABLES=S1_1 S1_2 S1_3 S1_4

/SCALE('ALL VARIABLES') ALL

/MODEL=ALPHA

/STATISTICS=DESCRIPTIVE SCALE CORR

/SUMMARY=TOTAL.

RELIABILITY

/VARIABLES=S2_1 S2_2 S2_3 S2_4

/SCALE('ALL VARIABLES') ALL

```
/MODEL=ALPHA
/STATISTICS=DESCRIPTIVE SCALE CORR
/SUMMARY=TOTAL.
```

CORRELATIONS

```
/VARIABLES=Impact Motivation
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.
```

ONEWAY Impact BY Conditie

```
/CONTRAST=1 -1 0
/CONTRAST=0 1 -1
/CONTRAST=1 0 -1
/STATISTICS DESCRIPTIVES HOMOGENEITY
/MISSING ANALYSIS.
```

ONEWAY Motivation BY Conditie

```
/CONTRAST=1 -1 0
/CONTRAST=0 1 -1
/CONTRAST=1 0 -1
/STATISTICS DESCRIPTIVES HOMOGENEITY
/MISSING ANALYSIS.
```

UNIANOVA Impact BY D1 Conditie

```
/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/PLOT=PROFILE(D1*Conditie)
/EMMEANS=TABLES(OVERALL)
/EMMEANS=TABLES(D1) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(Conditie) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(D1*Conditie)
/PRINT=ETASQ DESCRIPTIVE HOMOGENEITY OPOWER
/CRITERIA=ALPHA(.05)
/DESIGN=D1 Conditie D1*Conditie.
```

UNIANOVA Motivation BY D1 Conditie

```
/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/PLOT=PROFILE(D1*Conditie)
/EMMEANS=TABLES(OVERALL)
/EMMEANS=TABLES(D1) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(Conditie) COMPARE ADJ(BONFERRONI)
/EMMEANS=TABLES(D1*Conditie)
/PRINT=ETASQ DESCRIPTIVE HOMOGENEITY OPOWER
/CRITERIA=ALPHA(.05)
/DESIGN=D1 Conditie D1*Conditie.
```

* Chart Builder.

GGRAPH

```
/GRAPHDATASET NAME="graphdataset" VARIABLES=Conditie MEANCI(Impact,
95)[name="MEAN_Impact"
LOW="MEAN_Impact_LOW" HIGH="MEAN_Impact_HIGH"] MISSING=LISTWISE
REPORTMISSING=NO
/GRAPHSPEC SOURCE=INLINE.
```

BEGIN GPL

```
SOURCE: s=userSource(id("graphdataset"))
DATA: Conditie=col(source(s), name("Conditie"), unit.category())
DATA: MEAN_Impact=col(source(s), name("MEAN_Impact"))
DATA: LOW=col(source(s), name("MEAN_Impact_LOW"))
DATA: HIGH=col(source(s), name("MEAN_Impact_HIGH"))
GUIDE: axis(dim(1), label("Conditie"))
GUIDE: axis(dim(2), label("Mean Impact"))
GUIDE: text.footnote(label("Error Bars: 95% CI"))
SCALE: linear(dim(2), include(0))
ELEMENT: interval(position(Conditie*MEAN_Impact), shape.interior(shape.square))
ELEMENT: interval(position(region.spread.range(Conditie*(LOW+HIGH))),
shape.interior(shape.ibeam))
END GPL.
```

* Chart Builder.

GGRAPH

```
/GRAPHDATASET NAME="graphdataset" VARIABLES=Conditie MEANCI(Motivation,  
95)[name="MEAN_Motivation" LOW="MEAN_Motivation_LOW"  
HIGH="MEAN_Motivation_HIGH"] MISSING=LISTWISE  
REPORTMISSING=NO  
/GRAPHSPEC SOURCE=INLINE.
```

BEGIN GPL

```
SOURCE: s=userSource(id("graphdataset"))  
DATA: Conditie=col(source(s), name("Conditie"), unit.category())  
DATA: MEAN_Motivation=col(source(s), name("MEAN_Motivation"))  
DATA: LOW=col(source(s), name("MEAN_Motivation_LOW"))  
DATA: HIGH=col(source(s), name("MEAN_Motivation_HIGH"))  
GUIDE: axis(dim(1), label("Conditie"))  
GUIDE: axis(dim(2), label("Mean Motivation"))  
GUIDE: text.footnote(label("Error Bars: 95% CI"))  
SCALE: linear(dim(2), include(0))  
ELEMENT: interval(position(Conditie*MEAN_Motivation), shape.interior(shape.square))  
ELEMENT: interval(position(region.spread.range(Conditie*(LOW+HIGH))),  
shape.interior(shape.ibeam))  
END GPL.
```

SORT CASES BY Conditie.

SPLIT FILE LAYERED BY Conditie.

FREQUENCIES VARIABLES=D3

```
/ORDER=ANALYSIS.
```

DESCRIPTIVES VARIABLES=D2

```
/STATISTICS=MEAN STDDEV MIN MAX.
```