Faculty of Environmental and Behavioral Economics

(Dr. Christoph Bühren and Blanca Tena Estrada)

An Experiment on Warm Glow Perception in Crowding Out and Matching

Seminar: Quantitative Methods of Experimental Economics

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Authors:	Master Program:
Xana Ashburner (35925639)	Behavioral Economics & Governance
Aidai Elbekova (35928429)	Behavioral Economics & Governance
Jane Weinfurtner (35872548)	Behavioral Economics & Governance

Table of Contents

List of Abbreviations

Non-Governmental Organization	NGO

Positive Affectivity Negative Affectivity Schedule	PANAS
Linear Mixed Model	LLM
Restricted Maximum Likelihood	REML
United Nations International Children's Emergency Fund	UNICEF

Figures & Tables

1. Introduction

This paper will aim to analyze whether a connection between warm glow and crowding out, as well as matching, can be established. This will be done through an experiment conducted at the University of Kassel with a select group of students from the Quantitative Methods in Experimental Economics course plus additional participants given an equivalent online survey.

Warm glow is described as the implicit utility a person feels merely from the act of giving (Null, 2011). This sense of accomplishment and pride from warm glow is irrespective of the output that comes from their giving, for example, if a person donated ‘x’ amount to a charity, whether they experience a sense of warm glow or not is independent from the output that the charity can create with the said donation. The crowding out effect is a phenomenon in which when the state and or government spending directly affects the spending behavior of the public (Balcerzak & Rogalska, 2014). In the context of this paper, crowding out can be thought of as the decrease in the willingness to donate by private individuals because of the known spending of the government/state/researcher on a certain public good or NGO.

To explore the connection between warm glow and crowding out this paper will start with a literature review of authors finding that warm glow can be measured from the amount individuals give and how this effect differs under varying circumstance (Crumpler & Gossmann, 2008).

This will be followed by a description of how the experiment was done by use of a survey randomly given to participants, group A and B, with two varying orders of questioning that participants were unaware of. Following this the two central hypotheses explored by this paper will be laid out. Briefly they are -

H1: Topping up subjects' donations will lead to significantly lower donation amounts (lower warm glow).
H2: Matching subjects' donations will lead to significantly higher donation amounts (higher warm glow).

An analysis will take place next and will investigate descriptive statistics to establish preliminary relationships between warm glow, donations, and other variables. This starts with an examination of treatment details and group dynamics. The study consisted of 46 participants with mean

average donation amounts for the 3 rounds being 5.98, 4.76 and 5.78 respectively. In closing a regression was run and we can confirm a strong negative relationship between warm glow and crowding out only with the crowding out variable and donation amount.

2. Main Part

2.1 Literature Review & Theory

Crumpler & Gossmann (2008) start their research by considering what could motivate people to give when they receive no direct benefit from the giving. They consider this from the viewpoint of pure altruists who receive utility from knowing there will be an increased utility in the welfare of the interested party they have given to (Crumpler & Gossmann, 2008). On the other hand, they also consider people are giving simply for the feeling of the warm glow effect in which individuals utility is risen simply by giving any amount (Crumpler & Gossmann, 2008). Evidence of warm glow giving is given by an econometric study that finds that $1 of government spending crowds out private donation by roughly $0.005 to $0.35 (Crumpler & Gossmann, 2008). Additional experiments found even greater crowing out when the experiment was run in a laboratory by up to 70% (Crumpler & Gossmann, 2008).

Eckel, Gossman & Johnston (2005) find a way to test warm glow and hypothesize that giving, by a third party, does cause crowding out but this is dependent on how much the donator is aware that their donation is partially put towards third party giving and if the donation was done from an altruistic point of view or for the gains of warm glow. Their experiment was set out as follows and ended with the results that giving is driven by impure altruism and the warm glow effect (Eckel et al., 2005). The participants in their experiment played a single dictator game comprising of 4 treatments in which were 2 allocations and 2 frames, where the frames are used to alter the participants discernment of the task (Eckel et al., 2005). The two frames were set as follows:

Frame 1: Participants were aware of the split to take place from their initial endowment between themselves and the charity. Put simply, they were told that their initial endowment was going to be taxed and the amount taxed is what would be donated (Eckel et al., 2005).

Frame 2: The participants are unaware of the tax taking place and are only told that their initial endowment is smaller by whatever amount the third party chooses to donate (Eckel et al., 2005). In this frame of the game the tax is implicit and concealed from the participants knowledge (Eckel et al., 2005).

Similarly, as Eckel et al. (2005) used framing to determine if the effect of warm glow would be different under the frames, this paper through its survey experiment also implements this technique of blind framing in which our participants were unaware that they would receive the experimental treatments in different orders. Eckel et al. (2005) did find evidence of warm glow motivations by their participants as in frame 1 where the tax was explicitly explained to the participants (Eckel et al., 2005). This is because compared to the second frame where they are unaware of the tax, the participants (with knowledge of the tax) get increased utility from knowing that the tax was used to fund something, they are more aware of their giving and feel it more as a 'loss' because they know it is happening and are able to extract utility from it and subsequently warm glow is evident (Eckel et al., 2005).

Research done by Bischoff & Krauskopf (2015) was also invaluable to this paper as the use of the PANAS survey was introduced. The purpose of the PANAS survey is to measure the change in effective state of a participant before and after their donation, the theory suggests that the changes in their effective state can also be equated to warm glow (Bischoff & Krauskopf, 2015). However, for the purpose of this paper, warm glow will be measured directly from the donation amounts participants decide on and the PANAS survey as well as a direct question will serve as a secondary source.

With the above literature to guide this paper to its goal of determining a connection between warm glow, crowding outthis paper will move on now to its defined research question and experimental design.

2.2 Research Question

This paper focuses on analyzing whether a connection between warm glow and crowding out can be established. Subject matter here is the observation whether topping up donations will decrease levels of warm glow leading to crowding out, while matching can increase subject's warm glow,

thus reversing crowding out. By doing so, the paper addressed the following question: How do mechanisms such as topping up or matching affect peoples' subjective emotional state and their willingness to donate to a good cause?

2.3 Experimental Design [JW1]

The experiment was designed with a within-subject design, consisting of Control, crowding out (treatment 1), and matching (treatment 2). Every subject made one decision during each treatment (see Appendix for instructions). The decision tasks always involved the following question: "You receive a 10 Euro endowment. Please decide how much you want to donate to UNICEF."

In the control treatment, the subject decides how much of the initial endowment they donate and keep. In treatment 1, the subject again makes the same decision. Here the experimenters top up the donated amount to always reach 10 Euros, independently from what a subject decides upon. In treatment 2, the subject repeats the same decision task. Here, the experimenters donate the equal amount a subject decides to donate to UNICEF children.

On top of having each subject undergo each treatment, we also split the subject pool in group A and B. Group A performed the experiment in order control, treatment 1, then treatment 2. The latter performed the experiment in the order control, Treatment 2, and Treatment 1. This switch of sequence was done to check whether the arrangement in which subjects received treatments had any influence on their donation habits and thus their perceived warm glow.

The experimental procedures were identical for all subjects and treatments: All subjects were involved in one session containing a control, treatment 1, and treatment 2. Each subject performed their experiment on their own without communication, while the entire game was performed in the lime survey app, which the students completed on their respective electronic devices. The entire session lasted about 25 minutes and to guarantee anonymity (randomization) throughout the experiment, the subjects drew a QR-code from an envelope, which contained 20 group A and 20 group B surveys and sorted them into their respective groups.

Due to financial constraints, one treatment from one student was chosen at random at the end of the experiment whose decision would then be paid out. This method ensures subjects still authentically made their decisions on the amount they chose to donate to UNICEF children. To

ensure all participants had knowledge of the UNICEF children foundation, the experiment included a neutrally framed introductory text about the organization's activities.

As current literature (Crumpler & Gossmann, 2008; Bischoff & Krauskopf, 2015) assumes a positive relation between donation amount and perceived warm glow in individuals, we set these equal in our experiment. Under this assumption, subjects donating higher amounts will experience larger emotional satisfaction (=warm glow) from that behavior, while subjects donating less experience lower emotional satisfaction (=warm glow). Nevertheless, personal factors such as preferences, morals, attitude towards the organization & emotional state on the day of the experiment can all influence the subject's sense of warm glow. To specifically counteract potential deviations between measured warm glow and donation amount, we introduce two different questions investigating the level of warm glow of subjects throughout the experiment, as well as a question investigating the subjects' personal perception towards UNICEF.

The first question type regarding warm glow follows Bischoff & Krauskopf's (2015) experiment on warm glow, where before and after each treatment, subjects fill out the Positive Affectivity Negative Affectivity Schedule (PANAS) survey (Watson, Clark, & Tellegen; 1988). PANAS is used to measure the affective states of the subjects right before and immediately after their donation decision. After each treatment, the subject (on top of filling out the PANAS) also answers a directly formulated question on the individual's level of perceived warm glow after respective donations.

Furthermore, individual attitudes towards UNICEF potentially influence their willingness to donate. Indvidual's opposing the action of UNICEF might be tempted in donated less, while subjects strongly in favor thereof will increase their donation. To account for this, a question regarding the subject's opinion on UNICEF is integrated at the end of the experiment.

The experiment took place during the Quantitively Methods of Experiment Economics Summer semester 2023 at the University of Kassel, Germany. As demographic data was collected at the beginning of the semester through the seminar leaders, this is not repeated in the experiment. Based on self-selected identification codes in the demographic questionnaire, we were able to match the data to our experiment (students were asked to fill in the same identifier).[1]

Furthermore, absentees from the seminar led to unequal and smaller than expected sample sizes. To counteract this, the survey was privately sent to students outside of the seminar.

2.4 Hypothesis

Considering the research question, two central hypotheses emerge, which will shed light on the potential impact of topping up, matching and warm glow. To test the influence of the treatments on warm glow, we turn to descriptive analysis & conduct a linear mixed-effects regression.

Treatment Effects Hypothesis:
H1: Topping up (treatment 1) subjects will lead to significantly lower donation amounts (= lower warm glow).
H2: Matching (treatment 2) subjects' donations will lead to significantly higher donation amounts (=higher warm glow).

Furthermore, we exploratorily look at the following two hypothesis:
H3: The order in which subjects receive treatment (treatment 1 or 2) significantly affects the level of donations and thus perceived warm glow.
H4: Women react significantly stronger to changes moving from one treatment to another in terms of donation levels (=warm glow)

2.5 Econometrics Model

The goal of this experiment is to investigate the relationship between treatment type, PANAS, warm glow & UNICEF perception, gender, treatment order, and interaction effect between the treatment & the order on the donation amount (=warm glow). To capture these relationships, we use the following extended linear mixed-effects model:

$$DonationAmount_{ij} = \beta_0 + \beta_1 X_{ij\text{Treatment}} + \beta_2 X_{ij\text{PANAS}} + \beta_3 X_{ij\text{WarmGlow}} + \beta_4 X_{ij\text{UNICEF}} + \beta_5 X_{ij\text{Gender}} + \beta_6 X_{ij\text{Order}} + \beta_7 (X_{ij\text{Treatment}} \times X_{ij\text{Order}}) + u_i + \epsilon_{ij}$$

Where:

$DonationAmount_{ij}$ represents donation amount for subject i under treatment condition j

β_0 intercept term, representing the average donation

β_1 - β_7 coefficients of the respective independent variables

u_i captures the random effect capturing the individual-specific intercept for subject i

ϵ_{ij} error term capturing unobserved factors affecting subject i's donation amount under treatment j

$X_{ij\text{Treatment}}$ treatment indicator

$X_{ij\text{PANAS}}$ PANAS change dummy

$X_{ij\text{WarmGlow}}$ direct question (warm glow) dummy

$X_{ij\text{UNICEF}}$ UNICEF perception dummy

$X_{ij\text{Gender}}$ gender dummy subject i and treatment j

3 Analysis

3.1 Descriptive Data

In this section we will investigate descriptive statistics to establish preliminary relationships between warm glow, donations, and other variables. We start with an examination of treatment details and group dynamics. The total number of respondents is 46 individuals in the study. The mean (average) donation amounts for the three games are 5.89, 4.76, and 5.78, respectively.

Table 1. Descriptive data for Control, Treatment 1 & Treatment 2

	Control	*Treatment 1*	*Treatment 2*
Mean	5.89	4.76	5.78
Std.Dev	3.06	3.38	3.33

Min	0.00	0.00	0.00
Median	5.00	5.00	5.00
Max	10.00	10.00	10.00
Skewness	0.10	0.28	-0.09
Kurtosis	-1.13	-1.22	-1.32
N.Valid	46.00	46.00	46.00

The histogram and variability measures reveal distribution insights for each treatment group. The control group shows almost symmetrical distribution with a skewness of 0.10, matching the bell-shaped histogram centered around 5. Treatment 1 exhibits a slightly right-skewed distribution (skewness of 0.28), aligning with the histogram's rightward shift towards higher values. Its negative kurtosis of -1.22 implies distribution with lighter tails and a less pronounced peak. Treatment 2 displays a nearly symmetric distribution (skewness of -0.09), consistent with the histogram's appearance.

Figure 1. Donation Amount Distribution

Moving forward, when analyzing the average donation amounts, we observe that the average donation in treatment 1 (crowding out) is slightly lower at €4.72 compared to the control group's average of €5.89. This finding aligns with established theories. In treatment 2 (matching), the average donation is €5.78, surpassing crowding out, yet not reaching the initial donation level.

Turning our attention to the PANAS survey results, they provide valuable insights into participants' emotional states. After the control treatment, there is a clear surge in warm glow, evident in the noticeable increase in affective states from 13.62 to 17.21. However, the trajectory shifts in subsequent rounds. After the second round of the donation game, emotions experience a dip, declining from 17.34 to 15.40. This decline is further accentuated after the third round, with emotions decreasing from 14.36 to 13.80. These emotional shifts give us a glimpse into the potential impact of our experimental treatments, even if they result in less favorable outcomes.

Figure 2. Average Donation Amount & Average PANAS Score

When examining PANAS results in terms of treatment order, we observe that both groups exhibit heightened emotional states after the control treatment, with group B displaying a more pronounced increase after each game. Group B's emotions follow an upward path after both treatments, highlighting the complex relationship between the order of treatments. For group A, however, both treatment 1 and 2 lead to a decline in affective states, suggesting a downward trend. The disparity among the groups highlights the importance of carefully considering the treatment order when constructing our regression models.

Figure 3. PANAS Score Grouped by Treatment Order

While PANAS surveys provide an indirect measure of warm glow, contrasting them with direct questions reveals varying trends. The coming together of these two measurement approaches is complex, indicating that the PANAS survey indirectly identifies warm glow feelings, but is also affected by factors like survey length and repetition. And it is worth including both measures in the final model to see the effect on donations.

Figure 4. PANAS Score vs Direct Warm Glow Question

3.2 Regression Analysis

For further analysis of our experiment, we calculated correlations between all variables to investigate potential relationships. Especially of interest here, is the relationship between the donation amount (=warm glow) and the PANAS or/ the “Direct Warm Glow” question. A positive association would indicate that donation amount (=warm glow) and our secondary sources of inquiring for perceived warm glow match and we can safely assume the level of donation amount reflect a subject’s truly perceived level of warm glow.

Most factors display a weak correlation, not exceeding the 0.3 threshold. The highest correlation is noted between the “Donation Amount” and “Direct Warm Glow" question (-0.24), which is in line with existing theory, but however fails in finding significant correlation between our assumption donation level (=warm glow) and self-reporting warm glow. Nevertheless, overall

weak correlation scores could also mean that for our regression analysis we can include all intended variables without potentially running into multicollinearity issues.

Figure 5. Correlation Heatmap of Variables

Next, we refined the variables for the model. To capture the change in emotional state, we first calculated the overall total PANAS score and then determined the difference between scores before and after participants engaged in the game. After this we turned the results into a binary "PANAS Change Dummy." The improvement was indicated by 1, and 0 for decline. Similarly, for metric "Direct Warm Glow", we assigned a value of 1 for a positive response and 0 for a negative response. We also converted “Gender” and perception for “UNICEF” into dummy variables to make sure they were appropriately integrated into the model. For the “Donation Amount”, our core metric, we used it directly without any additional transformation.

Figure 6. Model Output

We decided to perform a Linear Mixed Model (LMM) with Restricted Maximum Likelihood (REML) due to the structure of data - individual subjects going though rounds of game with two different orders of treatment (UCLA, Statistical Methods and Data Analysis; Moffatt, 2020). The fitness of the model is acceptable, measured by REML criterion converging to a value of 4670.5.

The intercept was estimated at 7.05891, which shows Donation Amount when all independent variables are at their reference levels. The coefficients for treatment variables show a negative relationship. For treatment 1(crowding Out) 1.30328 , and matching was equal to -0.14754. However, only treatment 1(crowding Out) is statistically significant (t value is -9.127).

For PANAS and direct warm glow question we observe limited influence, as the coefficients are very low 0.03004 and 0.07051, respectively. UNICEF and gender exhibited coefficients of -0.98362 and -0.95007. Unfortunately, all these variables also showed no statistical significance.

Overall, our analysis shows a strong negative relationship only with the crowding out variable with donation amount. This supports our initial hypothesis, indicating that introducing additional monetary support for donations can negatively impact the donation amount. However, on the other hand our second hypothesis on matching donations was not confirmed, as treatment 2 (matching) did not result in statistically significant results. Other supporting variables related to gender and attitude towards UNICEF are also not significant.

4. Conclusion

This paper attempted to investigate the relationship between donation (=warm glow) and crowding out in the laboratory and finds partial confirmation of their hypothesis. Topping up (treatment 1) individual donations lead to a decrease in average donation and reinstates the existence of the crowding out effect. Simultaneously, matching (treatment 2) increases donation amount compared to topping up (treatment 1), returning the average donation amount slightly below the initial donation amount in a controlled setting (however not significant).

Returning to the theory, the results in treatment 1 is in line with current literature (Bischoff & Krauskopf, 2015; Crumpler & Grossman, 2008) and reiterates the existence of the crowding out

effect found in the economic and political landscape, where government subventions in the private and public sector leads to a decreased willingness of private individuals/firms to pay/donate for public goods or NGOs.

Throughout the experiment, we stumbled over a few complications arising from a combination of flawed experimental design and limited resources, which led to difficulties in the data collection, challenging the internal validity of this paper. First, this paper does not offer any insight into the optimal size for the treatments, as no power analysis was used. Second, the extensive duration of the PANAS survey (performed a total of six times) and therefore of the overall experiment perhaps lowered subjects' willingness to participate until the end and potentially skewed the data. Third, matching student data identifiers with the demographic survey was not fully possible, thereby limiting possible analysis involving demographic data and the influence thereof on donation behavior. Last, a multitude of wrongly filled-in test questions are found in the data, thereby instigating that instructions were confusing and at least not fully understood. Due to the already small size in the analysis, wrongly answered test questions did not lead to the removal of the respective treatment data. Considering the previous aspects, the necessary question arises of how sensible the analysis is and if the measured relationship (or the lack thereof) found in the experiment between donation behavior (=warm glow), matching and crowding out can be assumed.

While the current experiment exhibits flaws and yielded only partial significance, this does not stand for the general importance for further research in the sphere of warm glow, donation habits and crowding out research. Comprehending what and how these areas are interconnected will lead to better understanding of what influences human behavior and motivates altruistic tendencies.

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Appendix

Survey

Start by filling in the unique identification code that you set at the beginning of the semester, this will ensure anonymity during the experiment.

Your identification code contains the first two letters of your mother's name and the last two digits of your father's year of birth.

Example: Mother's name Amy and Father's year of birth 1970 -> id: HE79

In case you chose another identification code, please use that.

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A Survey in Quantitative Methods of Experimental Economics

Welcome to the survey by the Fullhouse Group!

With our survey, we want to record what importance donation decisions have for you. The survey takes about XX minutes in total.

As part of the survey, we invite you to participate in a donation game. With a little luck, you can win up to 20 Euros at the end of the experiment.

In a sequence of three rounds, you are asked to decide how much you want to donate from an initial endowment. Based on the selected amount, the rest will be given to the following organization: United Nations International Children's Emergency Fund (UNICEF).

On the next two pages, you will find the general instruction and overview of the United Nations International Children's Emergency Fund (UNICEF) and their activities. Please take your time to read the information.

_____new page

General Instructions

Today you will be participating in an economic experiment, earnings from the experiment will be paid out in “Euros” at the end of the experiment. The game does not partner you with any other participants.

At the end of the game, one participant will be randomly chosen and paid according to the decision they made in the according treatment. Therefore, the game and the decisions are not hypothetical. Depending on the size of your chosen donation, you will keep the rest of the payoff.

Each participant receives 10 Euros as their initial endowment, which will be renewed at each round.

For this experiment, you will be asked to donate “X Euros” from your 10 Euro endowment in each round towards the United Nations International Children's Emergency Fund. You will be asked to do so under a different set of parameters each time.

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Background Information

Founded in 1946, the United Nations International Children’s Emergency Fund is dedicated to promoting children’s rights and well-being. The program focuses on health and nutrition, education, child protection, water, sanitation, hygiene, and social inclusion, while simultaneously aiming to reduce child mortality rates and improve overall access to healthcare services, immunizations, and nutrition.

UNICEF strives to ensure every child has access to education, improving educational systems, training teachers, and providing learning materials.

Furthermore, the organization provides access to sanitation facilities, clean water access, and hygiene practices. Among the organization’s highest priorities is children's protection, preventing violence, exploitation, abuse, and neglect.

By partnering with local governments and through the hands of civil society, organizations, and communities, UNICEF aims to positively impact children’s lives around the globe.

[picture]

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Instructions for Round 1 (Control)

You receive a 10 Euro endowment. Please decide how much you want to donate to UNICEF. Whatever amount you do not donate, you keep it for yourself. Please make your decision without communicating with any of your peers.

You can decide to split the 10 Euros in any way you see fit. For example, you can choose to split the 10 Euros equally between yourself and UNICEF, keep the entire amount, donate the entire amount, or keep a certain portion for yourself and donate the rest.

If you decide to keep 3 Euros from the 10 Euro endowment. How much do you keep and how much will be donated to UNICEF?

2	3	7

If you decide to keep 6 Euros from the 10 Euro endowment. How much do you keep and how much will be donated to the UNICEF Germany foundation?

6	7	10

If you decide to keep 10 Euros from the 10 Euro endowment. How much do you keep and how much will be donated to the UNICEF Germany foundation?

0	4	10

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Pre-Survey

Please now complete the survey below without communicating with any of your peers.

On a scale of 1 to 5, where 1 represents "Not at all" and 5 represents "Extremely," please rate the following statement:

"How much did you experience each of the following emotions in the past week?"

Please rate the extent to which you felt:

=> see PANAS Survey from above

_____new page

Game (Control)

You receive a 10 Euro endowment. Please decide how much you want to donate to UNICEF. Remember: Whatever amount you do not donate, you keep for yourself. Please make your decision without communicating with any of your peers.

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Post Survey for 1

Please now complete the survey below without communicating with any of your peers.

On a scale of 1 to 5, where 1 represents "Not at all" and 5 represents "Extremely," please rate the following statement:

"How much do you experience each of the following emotions right now?"

Please rate the extent to which you feel:

=> see PANAS Survey from above

“Warm glow” [Direct question]:

How would you describe your overall emotional state or feelings now, after donating to UNICEF?

a) Much more positive

b) Slightly more positive

c) No significant change

d) Slightly more negative

e) Much more negative

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Instructions for Round 2 (Treatment 1)

You receive a 10 Euros endowment. Please decide how much you want to donate to UNICEF. Whatever amount you donate, the experimenters will be matched, in a decreasing pay scale.

For example: If you choose to donate 4 Euros, the experimenters will top up 6 Euros to reach the full 10 Euro donation. The final donation will always sum to 10 Euros.

Please make your decision without communicating with any of your peers.

You can decide to split the 10 Euros in any way you see fit. For example, you can choose to split the 10 Euros equally between yourself and UNICEF, keep the entire amount, donate the entire amount, or keep a certain portion for yourself and donate the rest.

First Test Question: If you decide to keep 5 Euros from the 10 Euro endowment. How much will the experimenters donate?

5	4	9

Second Test Question: If you decide to keep 3 Euros from the 10 Euro endowment. How much will the experimenters donate?

5	7	10

Third Test Question: If you decide to keep 10 Euros from the 10 Euro endowment. How much will the experimenters donate?

1	4	10

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Pre-Survey

Please now complete the survey below without communicating with any of your peers.

On a scale of 1 to 5, where 1 represents "Not at all" and 5 represents "Extremely," please rate the following statement:

"How much did you experience each of the following emotions in the past week?"

Please rate the extent to which you felt:

=> see PANAS Survey from above

_____ new page

Game

You receive a 10 Euro endowment. Please decide how much you want to donate to UNICEF. Remember: whatever amount you do not donate, you keep for yourself. Any donation will be topped up to 10 Euros by the experimenters and go to UNICEF. Please make your decision without communicating with any of your peers.

_____ new page

Post Survey for 1

Please now complete the survey below without communicating with any of your peers.

On a scale of 1 to 5, where 1 represents "Not at all" and 5 represents "Extremely," please rate the following statement:

"How much do you experience each of the following emotions right now?"

Please rate the extent to which you feel:

=> see PANAS Survey from above

Warm glow [direct question]:

How would you describe your overall emotional state or feelings now, after donating to UNICEF?

a) Much more positive

b) Slightly more positive

c) No significant change

d) Slightly more negative

e) Much more negative

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Instructions for Round 2 (Treatment 2)

You receive a 10 Euros endowment. Please decide how much you want to donate to UNICEF. Whatever amount you donate, the experimenters will match, in with the equal amount. Please make your decision without communicating with any of your peers.

You can decide to split the 10 Euros in any way you see fit. For example, you can choose to split the 10 Euros equally between yourself and UNICEF, keep the entire amount, donate the entire amount, or keep a certain portion for yourself and donate the rest.

First Test Question: If you decide to keep 2 Euros from the 10 Euro endowment. How much will the experimenters donate?

Experimenter donates

8	2	10

Second Test Question: If you decide to keep 7 Euros from the 10 Euro endowment. How much will the experimenters donate?

Experimenter donates

6	1	7

Third Test Question: If you decide to keep 3 Euros from the 10 Euro endowment. How much will the experimenters donate?

Experimenter donates

3	8	7

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Pre-Survey

Please now complete the survey below without communicating with any of your peers.

On a scale of 1 to 5, where 1 represents "Not at all" and 5 represents "Extremely," please rate the following statement:

"How much did you experience each of the following emotions in the past week?"

Please rate the extent to which you felt:

=> see PANAS Survey from above

_____ new page

Game:

You receive a 10 Euro endowment. Please decide how much you want to donate to UNICEF. Remember: Remember: whatever amount you do not donate, you keep for yourself. Any donation will be matched by an equal amount by the experimenters and go to UNICEF. Please make your decision without communicating with any of your peers.

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Post-Survey:

Please now complete the survey below without communicating with any of your peers.

On a scale of 1 to 5, where 1 represents "Not at all" and 5 represents "Extremely," please rate the following statement:

"How much do you experience each of the following emotions right now?"

Please rate the extent to which you feel:

=> see PANAS Survey from above

Warm glow [direct question]:

How would you describe your overall emotional state or feelings now, after donating to UNICEF?

a) Much more positive

b) Slightly more positive

c) No significant change

d) Slightly more negative

e) Much more negative

_____ new page

How would you describe your overall perception of UNICEF and their activities?

a) Very Positive

b) Slightly positive

c) Neutral

d) Slightly negative

e) Very negative

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Experiment Complete.

The experimenters will now allocate your respective earnings from each round and one lucky participant will be drawn. The chosen subject will receive an e-mail.

Thank you for your time!

Affidavit

Hiermit versichere ich, dass ich die vorliegende Arbeit selbstständig angefertigt und keine anderen als die angegebenen Hilfsmittel benutzt habe. Alle Stellen, die dem Wortlaut oder dem Sinn nach anderen Werken entnommen sind, habe ich in jedem einzelnen Fall unter genauer Angabe der Quelle (einschließlich des Internets sowie anderer digitaler Informationsquellen) als Entlehnung kenntlichgemacht. Dies gilt auch für eingefügte Zeichnungen, bildliche Darstellungen, Skizzen und Ähnliches. Keinen Teil dieser Arbeit habe ich bei einer anderen Stelle zur Erlangung einer Studien- und/oder Prüfungsleistung eingereicht. Ich nehme zur Kenntnis, dass die nachgewiesene Unterlassung der Herkunftsangabe als versuchte Täuschung bzw. als Plagiat gewertet und mit entsprechenden Maßnahmen geahndet wird.

Ort, Datum: Kassel, 31.08.2023

Unterschrift:
Aidai Elbekova
Jane Weinfurtner
Xana Ashburner

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[1] Unfortunately, multiple identifiers deviated in the experiment from the initial survey, thus preventing not all subjects' results from being able to be matched to their respectable data. Similar issues occurred throughout all treatments in which test questions were introduced previous a respective treatment to check the subjects' comprehension. A multitude of test questions carry wrong answers, which leads to believe that the instruction was not clearly understood.

2.2 Research Question [JW1]

This paper's focus is to analyze whether a connection between warm glow and crowding out, as well as matching, can be established. We are interested in seeing whether crowding out will decrease levels of warm glow, while matching can increase subject's warm glow. By doing so, the paper addressed the following question: How do mechanisms such as crowding out and matching affect peoples' subjective emotional state and their willingness to donate to good cause?