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THE IMPACT OF WAR-RELATED EVENTS ON INDIVIDUAL DONATIONS: EVIDENCE FROM UKRAINE

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The views stated in this thesis are those of the author and not necessarily those of the

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Abstract

How is charitable giving affected by war-related events? This thesis takes the war in Ukraine as a case study to investigate donation behavior in both empirical and experimental settings. As such, the analyses presented in this work are two-fold. First, 2.08 million transactions made to the "Come Back Alive" charity fund are analyzed to unveil correlations between war-related events and donation trends. Second, an experiment involving 166 participants is conducted to determine causal relationships between reading a news article on a war-related topic, induced emotions, and donation allocation and monetary values. Transactions analysis revealed that emotionally intense negative events and certain holidays led to increased giving to the charity fund, while experimental results indicated that an article topic and individual factors like country of origin, age, and gender were more influential for donations allocation than emotions expected to be elicited by articles. No effect of emotions on the monetary value of charitable giving was found. The results of this study contribute to the understanding of donation behavior during war and inform the development of effective strategies for charitable organizations.

Keywords: individual donations, war-related events, emotions, cause donated to, donations decision-making.

Introduction

The ongoing full-scale invasion of Ukraine by Russia has resulted in a significant loss of life, with over 50 000 Ukrainians being killed in defense of their home (Gutierrez M., 2023). This number could be notably higher, had Ukrainians and people around the world not provided over 2.46 billion euros of help by the end of spring 2023, supplying vital military, medical, and humanitarian aid, saving lives, and fostering unity (Zharikova A., 2023).

Understanding the driving forces behind such charitable giving, uncovering the factors that influence donation behavior, and determining which causes are supported is crucial for charity organizations to enhance the relevance and success of fundraising campaigns. Additionally, this understanding would contribute to the development of behavioral economics, serving as one more piece of the puzzle in explaining charitable giving behavior.

Prior research has touched on the general effects of war on mood and behavior, motivations for charitable giving, and the influence of emotions on behavior. However, there is limited study on donation trends in Ukraine, a novel landscape to investigate the issue. Specifically, little is known about the types of events and emotions that drive donations, how they impact their value and allocation, and whether certain events trigger spikes in charitable giving. Thus, the main research question of the thesis addresses this literature gap: how do emotions caused by war-related events impact the value and allocation of individual donations in support of Ukraine?

To answer these questions, this thesis first analyzes donations to the largest Ukrainian charity fund, 'Come Back Alive,' encompassing 2.08 million transactions and serving as preliminary research to identify general donation patterns. The results revealed that specific events, such as Russia's terrorist attacks and certain holidays, led to the highest spikes in donations. Further, an online experiment is conducted, involving 166 participants exposed to different news articles describing war-related events, and then asked to report their donation decisions in terms of monetary amount and cause donated to. The findings indicate that article topics and individual factors play a more important role in chosen donation cause than the emotions elicited by articles and that there was no effect of treatment on the monetary value of charitable giving.

Through the analysis of the "Come Back Alive" fund dataset and the online experiment, this thesis offers valuable insights into the factors that drive charitable giving behavior during times of war and offers meaningful knowledge contributions to charity funds.

Background information and literature review

The thesis's literature review is structured into several sections, each contributing crucial information to address the research question. The first section delves into the impact of war on donation trends in Ukraine, emphasizing the initial surge, subsequent decline, and spikes in donations on certain days. Next, an overview of the instruments used to raise funds is provided, focusing on notable fundraising campaigns. The third section examines the literature on the effect of war on mood and behavior, including the prevalence of negative emotions among Ukrainians and the war effect on pro-social behavior. Lastly, the introduction of the two-dimensional model framework sets the stage for the experiment's design, aiming to elicit emotions expected to influence donation behavior in distinct ways.

1.1.   War effect on donation trends in Ukraine

This part of the literature review explores the impact of war on donation trends, offering a general understanding of the donation dynamics across the country, the most popular charity funds, and donation causes. This comprehensive overview serves to provide context to the research question in regard to how war influences charitable giving.

The impact of the war on donation trends in Ukraine has been notable: at the beginning of the war, the amount of donations drastically increased (Dudko & Mironenko, 2022) but later has been decreasing (Opendatabot, 2022, Karmanska, 2022) with some spikes around emotionally intense war-related events (Opendatabot, 2022). During the beginning of 2022, 86% of Ukrainians became benefactors, a 19% increase from 2021 and a 26% increase from 2019 (Karmanska, 2022; Zagoriy, 2022). According to the Zagoriy Foundation, the average donation amount per benefactor in the period of 4 months of war has increased ninefold: from 1042 UAH in 2021 to 9730 UAH in 2022 (Zagoriy, 2022).

Notably, during periods of massive shelling of civilian infrastructure, there was increased support for the Armed Forces. In October 2022 alone, donations to the three most popular charity funds in Ukraine (United24, "Come Back Alive," and the Prytula Fund) reached around 1.5 billion UAH (Opendatabot, 2022). After the first major bombing of the energy infrastructure from October 10 to 16 2022, the number of donations per week to the United24 fund increased by 36%. The next week's (17 to 23 October) shelling increased support for the Armed Forces by 280% in comparison to the week before October 10 (the closest week without massive shelling) (Opendatabot, 2022). The United24 fund experienced the highest amount of donations

in July in the week from July 4 to 10. Another spike in donations to the United24 fund was from July 4 to 10. On that week Ukrainians donated UAH 1.86 billion — that's 83% of all revenues in July, this likely followed the tragedy of the shelling of a shopping center in Kremenchuk (Opendatabot, 2022).

During the six months of operation of the United24 charity fund, 83% of the transferred funds were directed to the Armed Forces of Ukraine account, 11% were allocated for medical aid, and 6% were designated for humanitarian aid (Opendatabot, 2022).

At the beginning of 2022, donations were primarily directed at the state account of the Armed Forces, personal bank cards, transferred through volunteers, and charity funds (Zagoriy, 2022). The three biggest Ukrainian charity funds and their respective contributions collected from the beginning of the war until the end of June 2022 are Come Back Alive (3.8 billion UAH), United24 (1.8 billion UAH), and Serhiy Prytula Foundation (1.8 billion UAH) (Karmanska, 2022)

1.2. Overview of instruments used to raise funds

Having explored the general donation trends in Ukraine, it becomes essential to delve deeper into the mechanisms facilitating these contributions. This section discusses the most prominent fundraising campaigns and charity fund representatives' strategies for mobilizing support. By analyzing these aspects, we get a clearer picture of the main causes people are willing to support, thus getting valuable information for answering the research question.

Many charity funds are organizing donation campaigns to raise funds for specific purposes. Some noteworthy campaigns include 'People's Bayraktar,' 'For Revenge,' and 'Shakhed Catcher'. The 'People's Bayraktar' campaign was launched in June 2022 by the 'Serhiy Prytula's Foundation' and made it a leader across charity funds on collected amount. In just three days, the campaign collected 600 million UAH (around 15 million EUR), with 366 million UAH collected on the first day alone for the purchase of The Bayraktar drone (Karmanska, 2022). Most contributions were below 100 UAH (2,5 euros), reflecting the involvement of Ukrainian individuals (Petrushko, 2022). The funds raised were used to purchase the drone and a satellite, with the drone manufacturer being impressed by the fundraising campaign and deciding to give three drones for free. Similar gatherings were held in other countries: Lithuania, Poland, etc.

As of September 22 2022, funds were collected for 8 drones. The main purpose of the campaign was to unite people and emphasize the importance of small donations.

Another famous campaign, a 'Shahed catcher', was launched in October 2022, a month of frequent attacks on Kyiv by Iranian Shahed-136 kamikaze drones. The aim was to purchase Shahed Hunter systems, which make drones vulnerable to air defense. The initial goal of 100 million UAH was reached in the first eight hours. In total 150 million UAH was raised.

On October 10, 2022, following a day of massive shelling in Ukraine, the 'For Revenge' fundraising campaign was launched to acquire RAM II UAV drones. Over four million UAH was received within half a day, exceeding the previous day's total donations. By the evening of that day, Ukrainians had donated over 227 million UAH to charitable foundations and volunteers for the purchase of drones (Karmanska, 2022).

According to the interviews of charity fund managers and people who organize successful fundraising campaigns, the relevance of the moment, context, and purpose of collection are among the most important factors for success. "The relevance of the moment is the best. The one who started collecting for revenge earlier than others on October 10 collected the best of all" says Serhiy Prytula Foundation representative in the interview to Forbes (Mironenko, 2022). Yaroslava Gres, the United24 projects manager, confirms that people get involved when something scary or encouraging happens: "On August 29, a counteroffensive was announced - donations increased by 2.5 times. The release of Azov citizens is a three-fold increase. The shelling of Ukraine on October 10 is all-out" (Mironenko, 2022). Oleg Horokhovsky, the Monobank cofounder, adds that any collection is valid for a maximum of three days. He also adds that Pareto's law works in fundraising: 20% of donors collect 80% of funds. It is important to offer something interesting to big patrons' (Mironenko, 2022).

"It takes emotion to get hooked. Ukrainian rage helped the Serhiy Prytula fund to collect "For revenge". The sense of gratitude was useful in Ihor Lachenkov's "For Izyum and Ukrainian flags" fundraising campaign, which he launched during the counteroffensive." – says Valeriy Shelupets, another cofounder of Monobank (Mironenko, 2022).

The purpose and context of the collection are also important. Serhiy Prytula Foundation once launched a humoristic fundraising campaign to buy a history textbook for Elon Musk, which

was launched in response to his contradictory Twitter post about the "peace plan" between Ukraine and Russia and brought the fund 2 million UAH (50 000 euros) (Mironenko, 2022).

1.3. The effect of war on mood and behavior

To answer the research question on how emotions elicited by war events affect charitable giving, it is essential to complement empirical information on popular donation causes and trends in Ukraine with theoretical insights into the impact of war on mood and behavior. This section aims to understand the types of emotions commonly elicited by war and the prevailing moods in Ukraine since the beginning of the invasion to provide context for interpreting donation behavior. By combining this theoretical understanding with empirical data, the section offers the first hypothesis on the correlation between war-induced emotions and the monetary amount of individual donations.

According to a survey conducted by Gradus Research Company (Gradus, 2022) in April 2022, 44% of Ukrainian respondents suffered losses during the war. Among them, the majority declare the loss of work (64%) and money (57%); around 14% of respondents have lost a relative, friend, or acquaintance. The mood of the majority of Ukrainians as of April 2022 was dominated by negative emotions like tension, anger, fear, and fatigue. About 35% of respondents reported being hopeful (Gradus, 2022). The level of stress among Ukrainians is also at the highest in the last 2 years of measurement: 87% of respondents report being stressed. More women report being stressed (90%) as compared to men (84%).

Evidence suggests that exposure to war violence is associated with symptoms of depression and distress (lack of desire to engage with people, avoidance of traumatic triggers, difficulties in relationships, hopelessness, etc.) (Ehlers & Clark, 2000). However, surprisingly, according to Bauer et al (2016) despite the negative impact of violence, research shows an overall increase in cooperation, prosocial behavior, and community participation on the local level among affected individuals. War affects behavior also in experimental laboratory games: people exposed to war-related violence tend to make decisions aiming to benefit others (e.g. altruistic giving). Increased local cooperation might partially explain why some post-war countries experience fast economic and social recoveries (Bauer et al., 2016).

This prosocial behavior in response to war violence aligns with evolutionary biology findings that claim that parochial altruism is an evolved response to external threats (Bauer et al., 2016).

However, it could be the case that after experiencing war violence people favor one's own group rather than social action in general.

Studies conducted by Bauer et al. (2014) in Sierra Leone and the Republic of Georgia examined the effect of war on altruistic behavior. The research found that individuals exposed to conflict-related violence in Sierra Leone were less selfish and more averse to inequality. However, the effect was found only towards ingroup members. A similar study conducted in the Republic of Georgia, following the conflict with Russia in 2008, showed that children who were more affected by the war, compared to less affected participants, displayed less selfish behavior towards their in-group members (classmates), but not towards out-group members (Bauer et al., 2014).

A study conducted by Gneezy & Fessler (2011) in Israel, using Ultimatum and Trust games, revealed that people living in a country with ongoing war had an increased willingness among senior citizens to reward cooperation and punish noncooperation. This might be relevant for studying donation behavior in Ukraine because ongoing war might create additional stimuli for punishing non-altruistic behavior.

However, it is important to acknowledge the limitations when attributing a causal effect of experienced violence on pro-social behavior. It is possible that individuals who are already more cooperative are more likely to participate in collective actions such as civil defense, making them more susceptible to becoming victims of war (Bauer et al., 2016).

It is also important to consider that two main reasons why people donate to charity are that they have been asked and asked by someone they care about (Castillo et al., 2014). Additionally, Bekkers and Wiepking (2011) find that the social context in which decisions on charitable contributions are made is one of the most important factors in determining the outcomes of charitable giving decisions. If war reduces social distance among group members, it can lead to increased pressure to donate and a higher number of donation requests. Consequently, during times of war, the common motivations to donate, such as being asked by someone they care about, may become even stronger for ingroup members. These motivations behind donations suggest the amplification effect of donating: as more people contribute to a charity fund or project, they encourage others to donate as well. Thus, peaks of donations on certain days are expected, however, these peaks would be reflecting not only the importance of the cause to individuals but also the influence of social interactions.

Based on the literature and evidence presented above, the following hypothesis can be proposed:

H1: *There is a positive correlation between the intensity of emotions caused by war-related events and monetary amount of individual donations in the following few days.*

1.4. Theoretical framework

After exploring which emotions are likely to be elicited during the war in the preceding section, this final part of the literature review introduces frameworks that elucidate the impact of emotions on decision-making, focusing on the valence and approach-withdrawal motivations frameworks. These frameworks are then applied to propose a hypothesis and three sub-hypotheses, aimed at understanding how specific emotions can impact the monetary value and allocation of individual donations and addressing the research question.

Emotions are commonly classified by positive vs negative valence. Positive moods are associated with higher confidence about a social encounter, optimism, cooperation, and less risky purchase decisions when compared to neutral and negative moods (Chuang & Lin, 2007; Loewenstein & Lerner, 2003). Conversely, negative emotions are associated with lower confidence, more effortful processing, vigilance, and a focus on negative consequences (Forgas et al., 1990). However, recent studies have shown the limitations of a valence framework and demonstrated contradictory effects on decision-making of emotions with the same valence (Harlé & Sanfey, 2010). For example, disgust and sadness, both negatively valenced emotions, had different effects on the endowment effect (Isen & Daubman, 1984).

An alternative to the valence model that can be more useful in analyzing the influence of emotions on decision-making is an approach-withdrawal motivation tendencies model. Approach-withdrawal model is rooted in evolutionary theories and proposes that the emotional system can be subdivided into aversive/appetitive behavior, which corresponds to defensive/approach (exploration) behavior (Harlé & Sanfey, 2010; Lerner et al., 2004). Factor analyses of emotional experience support two-dimensional structure: valence and approach-withdrawal motivation (Feshbach & Jones, 1957). Recent neurophysiological findings suggest that frontal EEG asymmetry reflects these broad motivational tendencies rather than emotional valence alone (Tellegen et al., 1999). Approach-based emotions (amusement, happiness, etc) are associated with greater left frontal activity, and withdrawal-based emotions (disgust,

sadness, etc.) — with right frontal activity (Davidson, 2003). The visual representation of the model is represented in Figure 1.
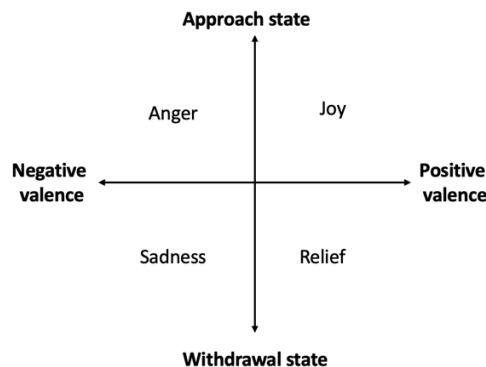

Figure 1. Two-dimensional model of emotional valence and approach-withdrawal motivation.

Anger, as a negative valence approach emotion, is expected to motivate individuals to engage in social exchange and may lead to higher monetary amounts of donations compared to low-energy emotions. One more mechanism through which anger could positively affect willingness to donate is that anger is known for decreasing risk aversion and there is some evidence that donors give less when there is a greater risk that their donation will have less impact (Exley, 2015). Additionally, anger is associated with a desire for revenge and pleasure in punitive action in response to injustices (Petersen, 2003). This suggests a potential association between donating to weapons and experiencing anger, as Ukrainians, who may perceive more injustices, are more likely to donate to weapons compared to foreigners.

Sadness, a negative valence withdrawal emotion, may not typically lead to proactive actions when compared to approach states. However, experienced violence or exposure to sad news articles can foster cooperation and increase altruism, potentially increasing donations, even though sadness is a withdrawal state emotion. Sadness can also positively influence donated amounts by impacting risk perception, as sad individuals tend to favor high-risk/high-reward options (Raghunathan & Pham, 1999). This is because sadness primes an implicit goal of reward replacement (while, for instance, anxiety primes an implicit goal of uncertainty reduction).

Positive withdrawal-based emotions are more difficult to identify because there are no positive emotions that motivate withdrawal from offending stimuli. Serenity or relief could be chosen as positive withdrawal-based emotions, since they evoke a calm and inward-focused state, decreasing the desire to approach emotionally salient events (Harlé & Sanfey, 2010). This

research focuses on relief, which is associated with preceding negative emotions and is relevant to war-related events. Joy, as a positive approach-based emotion, is expected to result in higher donations compared to withdrawal-based emotions. Positive emotions are also likely to increase donations to humanitarian and rebuilding causes due to their optimism.

Based on the discussions in this section, the following hypotheses and sub-hypotheses are proposed:

H2: The monetary amount donated to the specific cause positively correlates with the intensity of corresponding specific emotion.

Sub-hypotheses:

H2.1: Negative emotions lead to higher monetary amounts donated to the defense and weapons cause, compared to positive emotions.

H2.2: Positive emotions lead to higher monetary amounts donated to the rebuilding, medical and humanitarian aid causes, compared to negative emotions.

H2.3: Approach state emotions lead to higher monetary amounts of donations, compared to withdrawal state emotions.

Charity fund transactions analysis

Until recently, the scarcity of individual-level data from countries experiencing conflict hindered systematic exploration of war's impact on pro-social and donation behavior. However, Ukraine's advancements in the IT sector have generated numerous datasets containing donations to charity funds, providing a novel landscape to investigate donation behavior. Among these datasets, one comprising over 2 million transactions to the 'Come Back Alive' fund offers a chance to examine the correlation between emotionally intense war-related events and the monetary value of individual donations in the subsequent days. Understanding this potential association and identifying events leading to the highest spikes can form the basis for an experiment that will be conducted to establish causal relationships between specific war events and individual donation values and allocation. Thus, this part of the thesis serves as an initial illustration of charitable giving trends, shedding light on the influence of war-related events on the dynamics, frequency, and average monetary value of donations.

The "Come Back Alive" foundation was chosen for analysis as it is the biggest Ukrainian charity fund providing competent assistance to the military. The foundation's objective, as stated on its website, is to enhance the effectiveness of the Defense Forces, save military lives, and systematically counter the enemy (https://savelife.in.ua/en/about-foundation-en/). It is the first charity organization in Ukraine to receive a license for the purchase of military goods and the first fund in the world to purchase a UAV (Bayraktar drone). The fund is also often mentioned in foreign media (Fortune, Time, The Economist, Forbes, Bloomberg, MIT Technology Review, etc.) Since 2014, the Foundation has raised over UAH 6.6 billion (USD 175 million) for the purchase of equipment that saves military lives (thermal imaging optics, quadcopters, vehicles, etc.), projects to support veteran entrepreneurship and sports rehabilitation.

With 68% of the fund's donors being individuals ("Come Back Alive" website, 2022), "Come Back Alive" provides a valuable dataset for examining the impact of war events and associated emotions on individual donations. The fund has transparent and open reporting (can be found at this link), providing detailed real-time records of every donation and expenditure. For the analysis, all income transactions from February 24, 2022, to the end of March 2023 were extracted, resulting in a dataset of 2.08 million transactions. Each transaction includes information such as date, time, source, amount (UAH), currency, and comment.

2.1. Methodology and dataset description

For analysis of the transactions to charity fund Power BI data visualization tool has been used, as it can work with large datasets. The variables of interest are the daily monetary amount of donations, average values of transactions, and the count of transactions. Influence variables include date and war-related events on specific dates.

The original dataset contains 2.08 million transactions for the time period of February 24, 2022, until the end of March 2023. It contains donations from both businesses and individuals originating from different countries. To refine the dataset, duplicates were removed, and only donations with the range of 10 to 5000 UAH (0.25 to 122 EUR) were kept. This selection was because the donations under 10 UAH might not represent complete donations, arising from cashback or a percentage of other transactions. Focusing on transactions under 5000 UAH is more likely to capture individual donations made on the day the decision to donate was taken, as larger business donations typically occur at a later stage. These chosen thresholds are somewhat arbitrary, but they aim to increase the proportion of individual donations in the dataset for analysis. The refined dataset contains 1 553 980 donations, and, as expected, has a much smaller sum of donations: UAH 1.11 billion compared to original UAH 6.34 billion. The average monetary amount of donation has also decreased from UAH 3050 to only UAH 715.

Donation sources include banks operating in Ukraine (Privat, Oschad, Universal, Кредит Дніпро), and online payment systems (Solidgate Card, Fondy). Most of the donations come through Ukrainian banks and most transactions are made in Ukrainian hryvnia, followed by US dollars and euros. Even though a number of donations in hryvnia accounts for 95% of all transactions, the grand total of donations sum in hryvnia is only 87% due to the low average donation monetary value (UAH 657).

2.2. Results and discussion

Figure 2 illustrates the dynamics of all transactions from the beginning of the full-scale invasion until the end of March 2023, with the Y-axis representing the count of transactions per day and the X-axis indicating the timeline. Most of the donations occurred during the beginning of the full-scale invasion, peaking on February 24 and remaining high until early March. More information on the dynamics of the number of transactions, sum of donations, and average values of transactions is provided in figures 10, 11, and 12 of Appendix A.
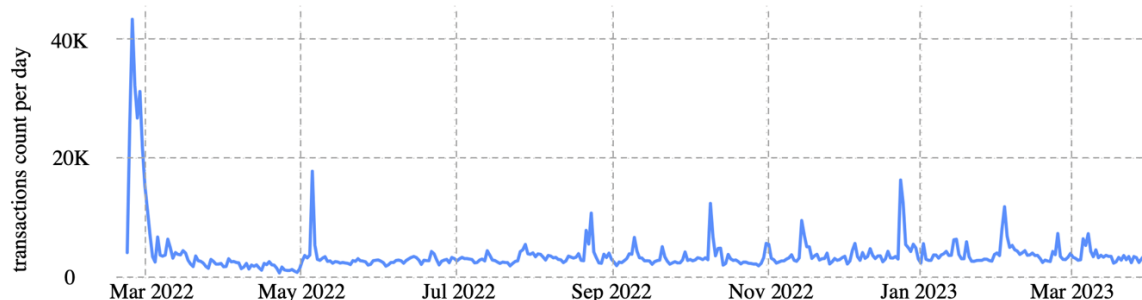
Figure 2. Dynamics of donations for the time period since the beginning of full-scale invasion (February 24) until March 31 2023. Y-axis: transactions count per day. X-axis: timeline.

Table 1 shows descriptive characteristics of donations and events that happened on the top 14 days with the greatest sum of donations. However, the initial weeks of the full-scale invasion (from February until March 2022) have been excluded from this analysis because that period has the greatest number of events and donations, making it difficult to disentangle which particular events and emotions led to high donations. Thus, the focus of this analysis is on the time period from April 2022 to April 2023 to observe more pronounced peaks in donations and better understand the effect of war events. Since some events do not happen in one day and donations are not necessarily transferred immediately, dates that are close to each other and have high sums of donations are analyzed together.

date	event description	event type	valence	sum UAH, rounded to millions	avg. amount UAH
May 6 2022	May 6: Evacuation of civilians from Mariupol and russians fire on evacuation vehicle, killing 1 person ; 5 towns liberated in Kharkiv Region ; Russians launch double missile attack on the outskirts of Odesa	terrorism, cities liberation	negative and positive	27,6	1523
May 7 2022				6	1110
Dec 24 2022	Christmas	holiday	positive	12,3	748
Dec 25 2022				7,6	608
Oct 10 2022	Oct 9: Zaporizhya missile strike, 12 civilians killed; Oct 10: 100+ missiles launched from Russia all over Ukraine, 16 civilians killed during Oct 9 and 10	terrorism	negative	11	874
Aug 22 2022	Aug 22: Russian fighter jet hits Odesa	holiday, terrorism	positive, negative	9,4	1166
Aug 23 2022	Aug 24: Independence day of Ukraine			5,5	976
Aug 24 2022				8,6	786
Nov 15 2022	About ten million Ukrainians are without electricity; Russia launches 100 missiles on Ukraine, outdoing 10 October attack; Russian missiles hit residential buildings in central Kyiv, killing at least 1 civilian ; Russians retreating from Kherson oblast	terrorism	negative	6,5	667
Feb 2 2023	Feb 2: Missile attack on Kramatorsk: 2 killed, 8 hospitalised	terrorism	negative	5,3	637
Feb 3 2023				6	508
Feb 24 2023	Anniversary since the beginning of full-scale invasion	anniversary	negative	6	797
Mar 6 2023	Mar 6: Russian soldiers execute Ukrainian PoW after he says "Glory to Ukraine", Russia launches 15 Shahed UAVs on Ukraine overnight, with 13 shot down, Ukraine conducts limited tactical withdrawal of troops from Bakhmut	terrorism	negative	6	899
Mar 7 2023				5	900

Table 1. Descriptions of event and donations information on dates with the highest sum of donations for the time period of beginning of April 2022 until the end of April 2023.

The most common event type among dates with the greatest sums of donations is terrorism attacks, it is followed by certain holidays. It is important to keep in mind that these are donations for mostly military purposes and the dynamics of other causes donated to could be different.

It also could be the case that on the dates with event type 'terrorism,' the average monetary amount of donations is higher, compared to event type 'holiday'. However, further research is needed to answer this question since it is necessary to account for the fact that the average donation amount is decreasing over time and analyzed events are happening in different time periods. This is out of the scope of this research.

2.3. Limitations

There are several limitations to consider in this analysis. First, the generalizability of the findings may be limited as the dataset focuses on donations made to the "Come Back Alive" fund, which collects money for military purposes and may not represent the broader landscape of charitable donations. Second, given the nature of war, significant events occur almost daily, making it challenging to objectively identify the most important events on the days with spikes in donations (Table 1) and compare their significance to events on other days. Besides, it is difficult to disentangle the impact of multiple events and identify the precise cause of increased donations. For example, on November 15, 2022, both positive (Russia's retreat from Kherson) and negative (missile strikes) significant events occurred, further complicating the analysis. Finally, the analysis did not account for the overall decrease in donations over time since the beginning of the full-scale war. To accurately compare donation sums per day, it would have been necessary to consider this declining trend. Additionally, factors such as inflation and the loss of income among Ukrainians were not explicitly incorporated into the analysis. Inflation could potentially affect donations in foreign currencies relative to the local currency (UAH), while a decline in income may contribute to lower average values of donations among Ukrainians. These limitations should be acknowledged to ensure a comprehensive understanding of the findings and to provide context for future research or practical applications.

Experiment

The earlier phase of the research delved into the dataset of transactions made to the charity fund, exploring the overall donation patterns and their connection to war-related events. This second part of the research zooms into the behavioral aspects of charitable giving decisions to understand how emotions impact the monetary amounts of transactions and to identify which emotions are associated with specific causes chosen for donation. This section tests Hypothesis 2 and its sub-hypotheses, which are repeated for convenience here:

H2: The monetary amount donated to the specific cause positively correlates with the intensity of the corresponding specific emotion.

Sub-hypotheses:

H2.1: Negative emotions lead to higher monetary amounts donated to the defense and weapons cause, compared to positive emotions.

H2.2: Positive emotions lead to higher monetary amounts donated to the rebuilding, medical and humanitarian aid causes, compared to negative emotions.

H2.3: Approach state emotions lead to higher monetary amounts of donations, compared to withdrawal state emotions.

3.1. Methodology and experimental design

The emotions chosen to be induced to test these hypotheses include joy (positive valence, approach state), relief (positive valence, withdrawal state), anger and fear (negative valence, approach state), sadness and disgust (negative valence, withdrawal state). These emotions were chosen based on their relevance to war-time news reading and their allocation on positive/negative and high energy/low energy scales in the circumplex model. The four events chosen to induce these emotions are missiles and rackets shelling of Ukraine no 10.10.2022 (further referred as 'Ukraine shelling'), Mariupol Drama theater bombing on 16.03.2022 (referred as 'Drama theater'), 'Kherson liberation' on 09.11.2022, and release of POWs on 22.09.2022. These events have been chosen because they represent common types of significant events that happen at wars and each of these events induces a different combination of negative/positive feelings and approach/withdrawal state.

Although both the liberation of Kherson city and the release of POWs are positive events that can induce a wide range of emotions, the study assumes that Kherson's liberation is associated primarily with joy due to the energetic celebration of liberation by residents, while the release of POWs is associated more with relief due to the preceding stress and active protests against the execution of prisoners by Russia.

Negative events like the shelling of Ukraine and the theater bombing in Mariupol are expected to evoke negative emotions such as sadness, disgust, fear, and anger. The shelling of Ukraine is assumed to induce fear and anger due to its impact on a larger number of people, increased danger for Ukrainian citizens, greater financial loss, and the demonstration of Russia's destructive capabilities. Fear is often associated with anger, thus it is assumed that these two different feelings might be evoked by the same event. The theater bombing in Mariupol is expected to evoke withdrawal state negative emotions like sadness and disgust, as it resulted in a higher number of deaths (600), including children, and can be perceived as even more morally aversive. It is also assumed that the theater bombing may cause less fear compared to shelling, as it primarily affects people in one location rather than the entire country. A unipolar scale ranging from 0 to 7, with 0 representing no emotion and 7 representing the strongest feeling, was used to measure the intensity of 6 chosen emotions.

The experimental design employed in this study aims to investigate the relationship between war-related events, induced emotions, and donation decisions. The primary objective was to test hypothesis 2 and its sub-hypotheses. To achieve this, an online experiment was conducted with a 2×2 design considering positive/negative valence and approach/withdrawal states, as well as emotions associated with these states.

At the beginning of the experiment, participants were given necessary information about the study and told that it is anonymous and voluntary. Then they were randomly presented with one of four articles, each describing a war-related event derived from the popular Ukrainian online news magazine 'Ukrainska Pravda.' Each of the articles was aimed to induce different emotions so that the first one is associated with approach state negative emotions (anger and fear), second – approach state positive emotion (joy), third – withdrawal state negative (sadness and disgust), and fourth – withdrawal state positive emotion (relief).

After reading the article, participants were asked to report on a unipolar scale from 0 to 7 how much they experience each of the following emotions: anger, fear, joy, sadness, disgust, and

relief. The question they were asked is: "Please estimate how much you experience each of emotions at this moment (0 – do not experience at all, 7 -experience strongly)". This scale was chosen because many other studies that assess emotional induction use unipolar Likert scales (Davidson et al., 1990; Harmon-Jones et al., 2016) where the lowest numbers represent an absence of emotional reaction and higher numbers the most intense feeling of that emotion. In this research, 8-point Likert scale ranging from 0 to 7 is used because it has been used in more recent studies to assess emotional induction (Harmones-Jones et al., 2016) and it is quite intuitive to understand for participants.

Next, participants were asked to allocate 100 euros across four options of donation: 'Defense and weapons, 'Medical and humanitarian aid', 'Rebuilding', and 'Keep the money for yourself'. This allocation of funds reflected their intended distribution of resources among these causes.

Lastly, to motivate respondents to think carefully about their choice, one participant was randomly selected from the entire pool, and the money was donated according to their chosen allocation.

The slider format was used for measuring emotions, as it is moderately more reliable and allows respondents to quickly capture and express their emotional state, as stated by Marcus et al. (2015). The survey screenshots and articles for each treatment group are presented in Appendix B, while a visualization of the experimental design is presented in Figure 3.

	High energy level / Approach Expected higher donated amount	Low energy level / Avoidance Expected lower donated amount
Positive valence Expected cause donated to: humanitarian, rebuilding	Emotion: joy Event: Kherson liberation	Emotion: relief Event: Release of POWs
Negative valence Expected cause donated to: defence	Emotion: anger, fear Event: Ukraine shelling	Emotion: sadness, disgust Event: Drama theater bombed

War-related event ⟶ Individual emotional reaction (valence, energy level, mood) ⟶ Amount and cause donated to (defence, humanitarian, rebuilding, keep)
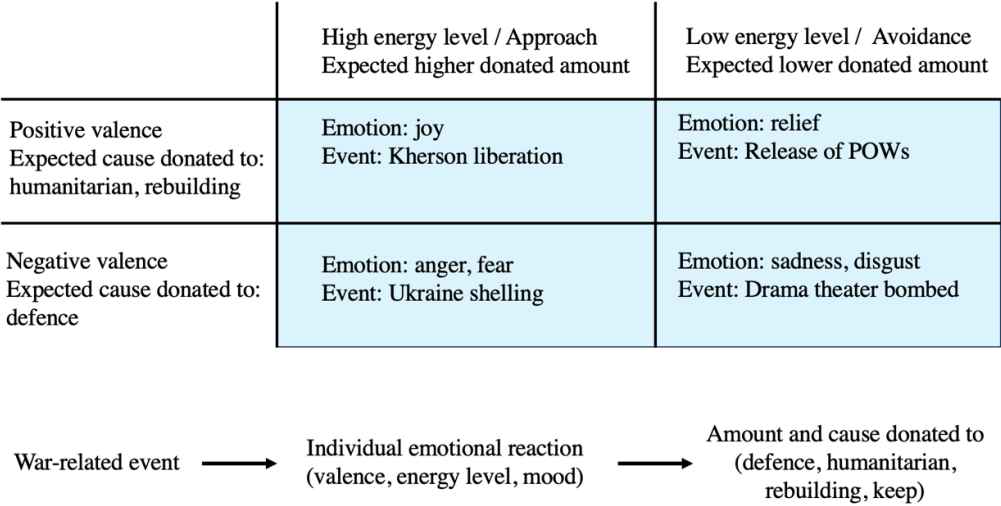
Figure 3. Visualization of experiment design with two-dimensional framework for estimating emotional response to selected articles.

The experimental design used a between-subjects approach and randomization was done using the Qualtrics platform, ensuring an equal distribution of subjects across the four treatment groups. The survey was done in English and Ukrainian languages and took approximately 5 minutes (median duration is 266 seconds). Ethical approval was obtained before conducting the survey, and participants were informed that the survey is anonymous. Subjects were offered a chance for compensation of 100 euros, which they could distribute among four options: three chosen donation causes and an option to keep the money to themselves. The distribution was based on the choice of one randomly selected participant.

Respondents were recruited online by reaching out to fellow students and posting the survey in local Ukrainian and European Facebook groups. Even though the sample was not completely random, it included individuals from diverse nationalities, genders, and age groups. Only individuals over the age of 18 were eligible to participate.

Further, methods for analyzing the experiment results are discussed. Hypothesis H2 is tested by exploring the correlation between each treatment's target emotions rate and donation values to the corresponding cause. Sub-hypotheses H2.1, H2.2, and H2.3 are tested by three t-tests that estimate the effect of treatment type on charitable giving to the prespecified cause. Next, as a robustness check, t-tests comparing mean donations under each treatment separately versus donations under three other treatments are conducted. Finally, hypotheses are also tested with the use of an OLS regression with monetary values of donations to each cause as dependent variables and treatment as influence variables, controlling for age, gender, and country of origin. Before doing the regression, a country-of-origin variable was converted to binary, indicating if the respondent is from Ukraine or not. This was done because being a foreigner or Ukrainian is expected to influence the choice of donation cause. The 'Drama theater' article is a reference category for other treatment groups in this regression.

Finally, before moving on to the findings section, assumptions of the tests employed are discussed briefly here. Welch's t-test is an appropriate test to use for the analysis discussed above because it is robust to violations of the equal variance assumption. To use this test data within each sample must be independent, which is the case for this study, since the experiment has a between-subjects design. Pairwise t-tests assume that the data within each treatment group are independent and approximately normally distributed, which should also hold for the data from this experiment. Finally, OLS regressions have an assumption of homoscedasticity, a

linear relationship between the dependent variable and the explanatory variables, and no perfect multicollinearity among the explanatory variables. All these assumptions should hold for regressions performed in the study.

3.2. Results and discussion

A. Sample description

An experiment involved 166 participants from diverse age groups and countries, ensuring good generalizability of the results. Among respondents, there were 80 men (48%), 83 women (50%), and 3 participants who chose not to disclose their gender. The mean age of the respondents was 33.03, with a standard deviation of 12.04 and a range of 18-64. Most of the respondents were from Ukraine (104), followed by Germany, Italy, and the Netherlands. In terms of current residence, Ukraine had the highest number of respondents (69), followed by the Netherlands, Germany, and Finland. A total of 29 different countries of origin and 20 countries of residence were reported.

The distribution of responses among treatments was not equal due to only completed responses being recorded and some participants not finishing the survey. The "Drama theater" and "Kherson liberation" treatments had 39 observations each, the "Release of POWs" treatment had 42 observations, and the "Ukraine shelling" treatment had 46 observations. Detailed summary statistics by treatment can be found in Table 8 of Appendix C.

A. Emotional induction by treatment

Before delving into the effect of treatment on donation cause, it is important to assess the emotional induction efficacy. Across all treatments, emotions with the highest reported average ratings were sadness and anger, while relief had the lowest mean score (Figure 4).

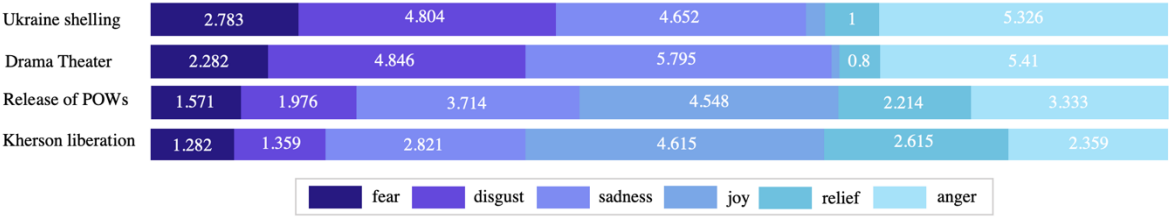|	fear	disgust	sadness	joy	relief	anger
Ukraine shelling	2.783	4.804	4.652	1		5.326
Drama Theater	2.282	4.846	5.795	0.8		5.41
Release of POWs	1.571	1.976	3.714	4.548	2.214	3.333
Kherson liberation	1.282	1.359	2.821	4.615	2.615	2.359

Figure 4. Average rate of each induced emotion (on a scale from 0 to 7) by treatment group represented as a share relative to other induced emotions within the treatment.

As predicted, the mean score for negative emotions was higher under negative events treatments 'Drama theater' and 'Ukraine Shelling' (4,48 out of 7), compared to positive treatments (2,31 out of 7). This difference is statistically significant at a 1% level and was tested using Welch's t-test. Similarly, the average rate of positive feelings of joy and relief was higher for positive treatments 'Kherson liberation' and 'Release of POWs' (3,49 out of 7), compared to negative treatments (0,58 out of 7), and is significant at 1% level (Figure 5).
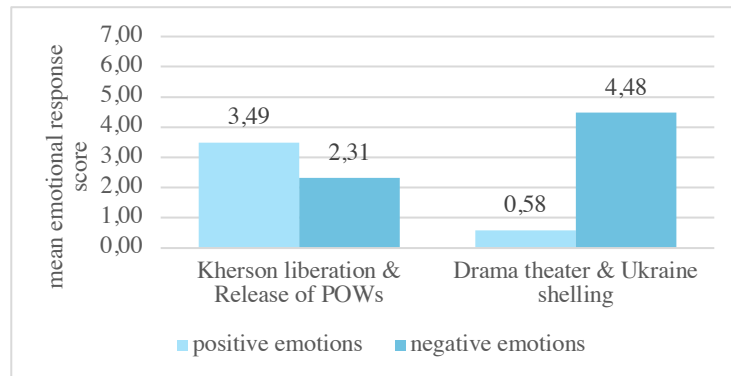

Figure 5. Mean positive/negative emotions rate for positive events treatment (Kherson liberation & Release of POWs) and negative events treatment (Drama theater & Ukraine shelling). Positive emotions: joy and relief. Negative emotions: anger, fear, disgust, sadness. Emotions were measured on a scale from 0 to 7. N = 166 respondents. T-tests revealed that both differences for positive and for negative emotions rates are statistically significant at 1% level.

Contrary to predictions, approach state emotions (joy, anger, fear taken together) had, on average, higher scores under withdrawal-inducing treatments, compared to other treatments (p = 0.06, Welch's t-test). The difference in mean scores of low-energy emotions (relief, sadness, disgust) under approach versus withdrawal states treatments was not statistically significant (p = 0.28). Thus, emotional induction by the motivational state was not successful (Figure 6).
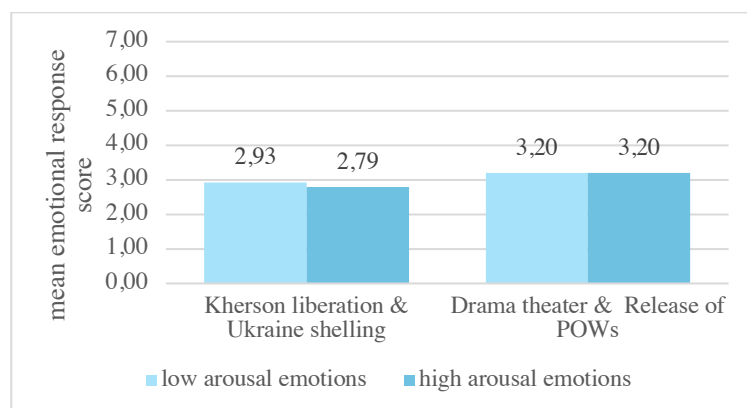
Figure 6. Mean scores of low/high arousal emotions under high-energy level treatments (Kherson liberation & Ukraine shelling) versus low-energy treatments (Drama theater & Release of POWs). High arousal emotions: joy, anger, and fear. Low arousal emotions: relief, sadness, and disgust. Emotions were measured on a scale from 0 to 7. N = 166 respondents. T-tests revealed that the difference in mean scores for low arousal emotions is not statistically significant. The difference in mean scores for high arousal emotions is statistically significant at 10% level.

Since every treatment had an a priori intuition as to which emotion it would elicit most strongly, pairwise t-tests examining whether each article's target emotion had a higher score than the other five nontarget emotions were conducted. Results showed that only the 'Kherson liberation' treatment successfully induced its target emotion joy, with its scores being higher than the scores of any other non-target emotion at a 1% significance level.

Other treatments had several emotions, including non-target ones, induced at the same time: 'Release of POWs' induced joy and sadness the most, but its target emotion relief had a lower rate than other non-target emotions. Articles about negative events induced a mix of sadness, anger, and disgust, but none of the articles induced exclusively its target emotions. Results are presented in Table 9, Appendix C.

C. The effect of treatment on donation decisions

The primary focus of the experiment is to discern the differences in average amounts donated to each cause depending on the treatment group (Figure 7), serving to answer H2 and its sub-hypothesis. On average, across all treatments, 43% of the money was donated to defense, 30% to medical and humanitarian aid, 18% to rebuilding, and 9% was kept by participants to themselves.
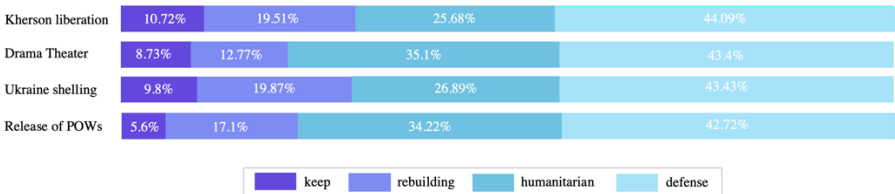
Figure 7. Average amounts donated to each cause by treatment group.

Hypothesis H2 posited a positive correlation between the monetary value of donations to a specific cause and the intensity of corresponding emotions. It was expected that positive emotions would lead to increased charitable giving to rebuilding and humanitarian aid, while negative — to defense and weapons. To test these expectations, Pearson's correlation coefficients between each treatment's target emotions rate and the monetary amounts donated to the described causes were estimated (Table 2). Donations to defense under 'Ukraine shelling' treatment were found to have a weak negative correlation of -0.25 with rates of fear (p-value = 0.092) and a similar positive correlation of 0.25 with rates of anger (p-value = 0.094). The disgust rate exhibits a negative correlation of -0.37 (p-value = 0.022) with donations to defense

under 'Drama theater' treatment. There was no statistically significant correlation between positive emotions and donations to rebuilding and humanitarian aid. These results do not provide sufficient evidence to support Hypothesis H2, indicating that there is no strong positive correlation between the target emotions and the monetary amount of donations to specific causes in this study.

		positive emotions		negative emotions			
		joy	relief	fear	anger	sadness	disgust
rebuilding and humanitarian aid	Kherson liberation	-0.23	-	-	-	-	-
	Release of POWs	-	0.17	-	-	-	-
defense and weapons	Ukraine shelling	-	-	-0.25*	0.25*	-	-
	Drama theater	-	-	-	-	0.02	-0.37**

Table 2. Pearson's correlation between donation values and treatments' target emotions rate. *** p<0.01, ** p<0.05, * p<0.1

According to H2.1, negative emotions lead to higher monetary amounts donated to the defense and weapons cause, compared to positive emotions. A Welch's t-test was employed to see if a difference in the mean monetary value of donations to defense under positive events treatments (44.56 euros) versus giving to defense under negative treatments (43.45 euros) is statistically significant. Results revealed that the difference is not statistically significant (p = 0.84). H2.2 states that positive emotions lead to higher monetary amounts donated to the rebuilding, medical and humanitarian aid causes, compared to negative emotions. To validate this hypothesis one more test was conducted, comparing the mean monetary value of donations to rebuilding, medical and humanitarian aid under positive treatments (47.31 euros) versus mean donations to the same causes under negative treatments (49.58 euros). T-test showed no statistically significant difference in donations (p = 0.69). Thus, both tests did not provide any evidence in support of hypotheses H2.1 and H2.2. Average donated amounts to discussed causes are represented in Figure 8.
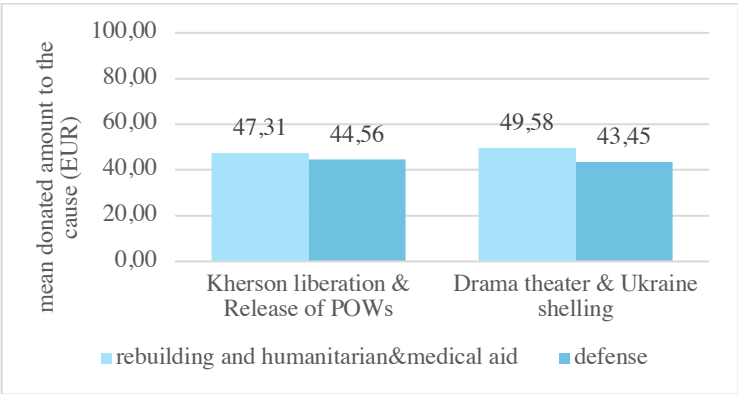

Figure 8. Mean donated monetary amounts (in euros) to rebuilding, humanitarian, and medical aid and mean donations to defense under positive events treatments versus negative events treatments. N = 166 respondents. T-tests revealed that the differences in mean monetary amounts of donations are not statistically significant. P-

value corresponding to the difference in donations to rebuilding, humanitarian, and medical aid is equal to 0.695. P-value corresponding to comparison of donations to defense is equal to 0.843.

H2.3 states that approach emotions lead to higher monetary amounts of donations, compared to withdrawal emotions. Since respondents had to distribute 100 euros between donation options and keeping money to themselves, the higher value of 'keep' means less money was allocated to charitable giving. To validate hypothesis H2.3, mean monetary values allocated to the 'keep' option were compared under treatments that were expected to induce approach emotions (10.49 euros) versus treatments that had to induce withdrawal emotions (7.11 euros). Welch's t-test revealed that the difference in means is not statistically significant, p-value equal to 0.3347. This result also gives no evidence in support of hypothesis H2.3. Mean monetary values allocated to 'keep the money for yourself' are represented in Figure 9.
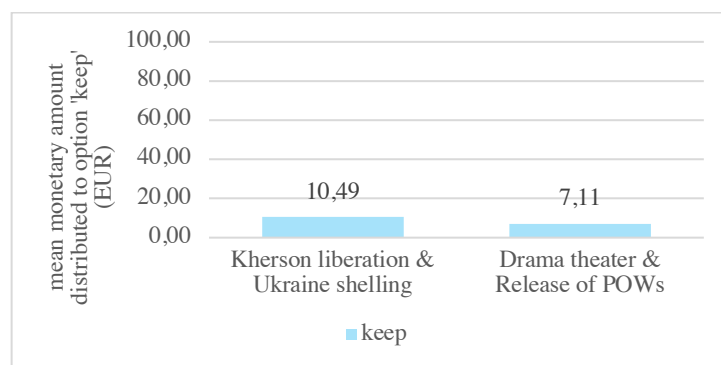

Figure 9. Mean monetary amounts (in euros) distributed to the option 'keep money for yourself' under approach-motivation treatments (Kherson liberation & Ukraine shelling) versus withdrawal states treatments (Drama theater & Release of POWs). N = 166 respondents. T-test showed that the difference in means is not statistically significant, p-value = 0.3347.

Complete t-tests results of donations comparison under positive versus negative treatments, and under low-energy versus high-energy treatments are depicted in Table 3. As discussed above, the test showed that the emotional valence of treatment did not have any significant effect on the allocation of money. However, Welch's t-test revealed that exposure to withdrawal-state-inducing articles ('Drama theater', 'Release of POWs') increased giving to humanitarian and medical aid, compared to other articles, by 7.7 euros; p-value equal to 0.07. This seems to happen mostly at the cost of lower giving to rebuilding; aid to this cause under withdrawal treatments decreased by 5.2 euros, compared to other treatments (although this effect is not statistically significant, p-value = 0.12). Since emotional induction did not occur as expected, this effect cannot be attributed to the motivational state of induced emotions. However, such allocation could be chosen rather due to the needs articles are associated with, rather than solely due to the emotions they induce. 'Ukraine shelling' and 'Kherson liberation' articles could remind participants of rebuilding funds needs after liberation and extensive infrastructure

damage, while 'Drama theater' and 'Release of POWs' could emphasize humanitarian and medical aid needs due to their focus on people. Relating these findings back to the literature review and background information, it goes in line with charity fund managers' statements that the relevance of the moment and context of a fundraising campaign are the most important factors for success (Mironenko, 2022).

		withdrawal states articles (Drama theater + Release of POWs) vs approach states articles (Ukraine shelling + Kherson liberation)						
	mean Drama theater + Release of POWs	mean Ukraine shelling+ Kherson liberation	differ.	95% CI lower	95% CI upper	t	df	p-value
defense, weapons	43.08	44.86	-1.78	-12.83	9.27	-0.31	161.76	0.751
humanitarian, medical	34.67	26.99	7.68*	-0.68	16.05	1.81	161.45	0.07
rebuilding	15.03	20.2	-5.17	-11.61	1.27	-1.59	141.39	0.11
keep money	7.11	10.49	-3.38	-10.27	3.52	-0.97	157.31	0.33

		positive articles (Kherson liberation + Release of POWs) vs negative articles (Ukraine shelling + Drama theater)						
	mean Kherson liberation + Release of POWs	mean Ukraine shelling+ Drama theater	differ.	95% CI lower	95% CI upper	t	df	p-value
defense, weapons	44.56	43.45	1.11	-9.98	12.21	0.2	163.64	0.843
humanitarian, medical	30.79	30.68	0.11	-8.32	8.54	0.03	163.51	0.979
rebuilding	18.78	16.62	2.1	-4.39	8.7	0.65	163.33	0.516
keep money	8.31	9.32	-1.01	-7.94	5.93	-0.29	162.43	0.775

Table 3. Results of t-tests, comparing average donation to certain cause between approach/withdrawal articles treatment and between positive/negative articles treatments. *** p<0.01, ** p<0.05, * p<0.1.

Further, t-tests comparing mean donations under each treatment separately versus donations under three other treatments are conducted (Table 10, Appendix C). It was found that 'Drama theater' treatment is associated with decreased donations to rebuilding by 6.4 euros, compared to other treatments, at a 5% significance level.

Next, this study focuses on OLS regressions with monetary values of donations to each cause as dependent variables and treatment as influence variables, controlling for age, gender, and country of origin (Table 4). Formula. Results indicate that 'rebuilding' is the only cause affected by treatments: 'Kherson liberation' and 'Ukraine shelling', when compared to 'Drama theater', increase donations to rebuilding by 8.49 and 7.92 euros respectively at 10% significance level, ceteris paribus. Since 'Kherson liberation' is a positive-valence event and 'Drama theater' — is negative, this finding goes in line with H2.2.

With regard to the control variables, it was found that gender, age, and country of origin have significant effects on charitable giving. The value of 'rebuilding' cause is affected by both gender and origin: being male (compared to female) and Ukrainian (compared to other countries of origin) decreases giving to rebuilding by 8.28 and 11.05 euros respectively, with effect

significant at 1% level, ceteris paribus. The 'Keep money to yourself' option is only influenced by age: each additional year is associated with a decrease in the value of 'keep' by 0.38 euros, 5% level significance, ceteris paribus. Donations to humanitarian and medical aid are affected only by the country-of-origin variable: being Ukrainian decreases giving by 29.48 euros, compared to another origin (1% significance level). 'Defense and weapons' cause was influenced by two variables: each additional year of age increased donations to defense by 0.45 euros, while being Ukrainian (compared to other nationalities) — by 36.3 euros, both results significant at 1% level. To conclude, the results of OLS regression presented in Table 4 did not show any evidence in support H2.1 and H2.3. Country of origin, age, and gender variables influenced most of the donation causes, while treatment variables impacted only the monetary value of the rebuilding cause, with high-energy treatments increasing donations to rebuilding.

Dependent variable: monetary value of donation to one of the causes				
	keep money	hum., medical aid	defense, weapons	rebuilding
Kherson liberation	2.609	-7.761	2.272	8.494*
	(5.137)	(5.287)	(6.88)	(4.649)
Release of POWs	-4.93	2.191	-3.501	4.494
	(5.105)	(5.287)	(6.88)	(4.649)
Ukraine Shelling	1.009	-7.566	-0.996	7.921*
	(4.917)	(5.093)	(6.628)	(4.478)
age	-0.377**	-0.105	0.452**	0.003
	(0.163)	(0.168)	(0.219)	(0.148)
gender: male	-1.667	-2.78	7.387	-8.281**
	(3.649)	(3.772)	(4.908)	(3.316)
gender: prefer not to say	-4.007	5.032	-13.47	10.709
	(13.485)	(13.968)	(18.175)	(12.281)
country origin: Ukraine	5.783	-29.48***	36.303***	-11.052***
	(4.057)	(4.192)	(5.455)	(3.686)
constant	18.913***	57.293***	3.643	22.965***
	(6.501)	(6.732)	(8.76)	(5.919)
Observations	166	166	166	166
Multiple R-squared	0.04408	0.309	0.3249	0.1156
Adjusted R-squared	0.001455	0.2784	0.295	0.07646

Table 4. OLS regressions with monetary values of donations to certain causes as dependent variable. Influence variables: treatment, age, gender, country of origin. Reference category for treatments: Drama Theater. Reference category for gender: female. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

D. The effect of emotions on donation decisions

Having now examined the effects of each treatment on donations, it follows to investigate how specific emotions affect charitable giving, regardless of what treatment induced them. The link between emotions and chosen allocation of donations is explored using an OLS regression, with donation value as the dependent variable and emotions as the explanatory variable of interest, controlling for gender, age, and country of origin (Table 11, Appendix C).

It was found that only one emotion influenced charitable giving: each additional unit of fear, on a scale from 0 to 7, increased donations toward the 'rebuilding' cause by 2.16 euros (5%

significance level, ceteris paribus). This does not go in line with discussed literature and could happen because the 'Ukraine shelling' treatment has the highest rates for both fear (2.783 compared to 2.006, on average) and 'rebuilding' donations (19.87% compared to an average of 17.46%), alluding to treatment's characteristics that the experimental design did not account for to influence these variables. For example, it makes sense to donate to rebuilding after being reminded about the infrastructure damage and at the same time it causes fear.

Since country of origin and gender had a significant impact on charitable giving, the effect of these two variables on donations is discussed in Appendix D.

3.3. Limitations

While interpreting the results of the experiment several limitations should be considered. First, since the experiment was conducted during a time of ongoing war in Ukraine, the real-world events happening on the days of the experiment may have influenced respondents' donation decisions. This limitation is partially addressed by the survey being done in a more stable period (April-May 2023) compared to the initial stages of the war and by controlling for emotional response. Second, because the experiment offered a predefined set of donation categories, some participants might have preferred other causes of donations and could choose to keep the money to themselves to give them later to another cause. However, the experiment offered the three most common causes, so this should correspond to most participants' preferences. Third, social desirability bias may have influenced participants' donation decisions. This limitation was addressed by ensuring individuals that their responses are anonymous and by using neutral wording to avoid bias towards certain choices. The house money effect also could have made respondents more altruistic compared to a scenario where they would believe that they already own 100 euros. This could make donation choices biased in terms of magnitude, but the effect of treatment on a sign (increase/decrease) and on the choice of donation cause would still be valid if the house money effect is at play. Finally, participants' donation choices could be influenced more by rational reasoning (such as the urgency of investing in defense and weapons during a counteroffensive or giving to rebuilding cause after reading about infrastructure damage) or by unaccounted characteristics of treatments, rather than solely by emotional responses. However, even though this experimental design did not allow for causal inference about the emotions impact on donation decisions, it can estimate how particular types of events affect charitable giving, which is sufficient to answer the research question.

Conclusion

This study investigated the impact of war-time events and associated emotions on charitable giving behavior. First, through a charity fund transactions analysis, it was found that emotionally intense negative events and holidays correlated with higher amounts of donations, supporting hypothesis H1, which states that emotionally intense war events positively influence charitable giving. This first investigation shed light on the overall donation patterns.

Next, an experiment was conducted to explore how reading articles about diverse war events influenced donation values and the causes chosen. It revealed contradictory findings to hypothesis H2 and its sub-hypotheses, as it did not reveal significant differences in donations between treatments with negative and positive emotions or between approach and withdrawal motivations treatments (Welch's t-test). An OLS regression also showed mixed results regarding H2 and its sub-hypotheses, making it challenging to come to a single conclusion. Yet, another observation was made: individuals tend to donate more to the cause that appears to be immediately related to the content of the article ('Drama theater' and 'Release of POWs' treatments, when compared to 'Ukraine shelling' and 'Kherson liberation', were associated with increased giving to the humanitarian and medical aid at the cost of decreased donations to rebuilding). Besides, individual characteristics like age, gender, and country of origin had stronger effects on donation decisions than treatments. Country of origin played a crucial role as it had the biggest effect size: being Ukrainian, compared to originating from another country, decreased giving to rebuilding and humanitarian help, while increasing donations to defense. Being older was associated with a greater total value of donations while being female (compared to male) with increased donations to rebuilding.

Overall, individual factors and article content were more influential for donation decisions than induced emotions. While no causal relationship between discrete emotions and charitable giving was established, this study offers valuable insights for further research by identifying factors influencing donation behavior and can inform the development of effective strategies for charitable organizations during times of war.

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Appendix

A. Additional information on 'Come Back Alive' transactions analysis

source	% of total transactions through the source	% of total monetary amount through the source	avg. amount, UAH
Privat	65.06%	51.93%	571
Solidgate Card	20.36%	23%	808
Oschad	8.50%	11.82%	994
Fondy	5.34%	12.65%	1695
Universal	0.73%	0.58%	566

Table 5. Summary statistics of transactions to 'Come back alive' fund by source.

currency	% of total transactions in the currency	% of total monetary amount in the currency	avg. amount, UAH
UAH	95.98%	87.27%	657
USD	2.56%	6.53%	1824
EUR	2.18%	5.54%	1818
PLN	0.22%	0.46%	1459

Table 6. Summary statistics of transactions to 'Come back alive' fund by currency. Only currencies with over 0.1% of total transactions are depicted.

country code	% of total transactions with country code	% of total monetary amount in the currency	avg. amount, UAH
UKR (Ukraine)	84%	65.64%	544
USA	2.42%	6.64%	1915
POL (Poland)	2.07%	2.7%	907
DEU (Germany)	1.67%	4.19%	1745
GRB (Great Britain)	1.46%	3.2%	1527

Table 7. Summary statistics of transactions to 'Come back alive' fund by country code extracted from IBAN in transaction comments. Only country codes with over 1% of transactions are depicted.
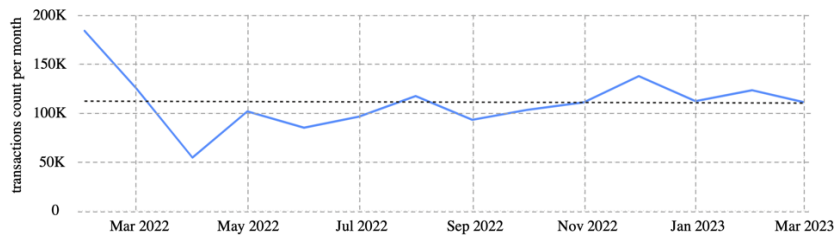
Figure 10. Dynamics of donations: count of transactions to 'Come back alive' fund since the beginning of full-scale invasion (February 24 2022) until March 31 2023 aggregated by month.
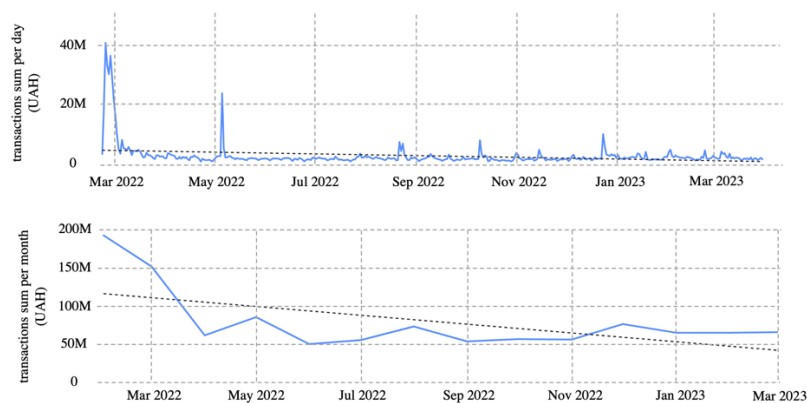
Figure 11. Sum of transactions to 'Come back alive' fund in Ukrainian hryvnas since the beginning of full-scale invasion (February 24 2022) until March 31 2023 aggregated by day and by month.
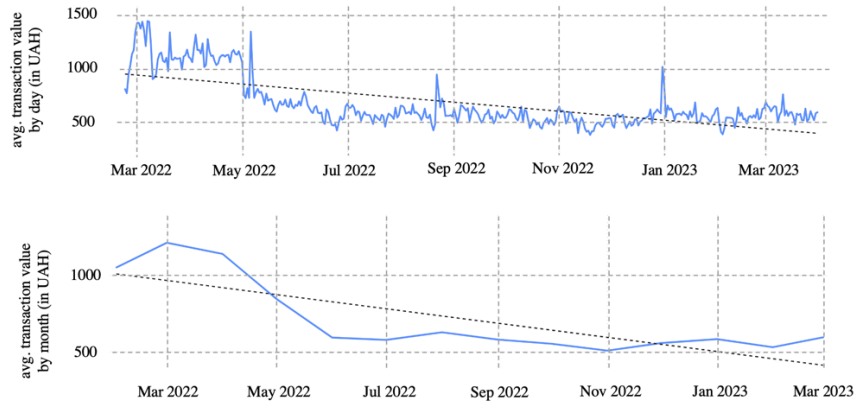
Figure 12. Average transaction monetary value aggregated by month and day. Time period: February 24 2022 until March 31 2023. Black line is the trendline.
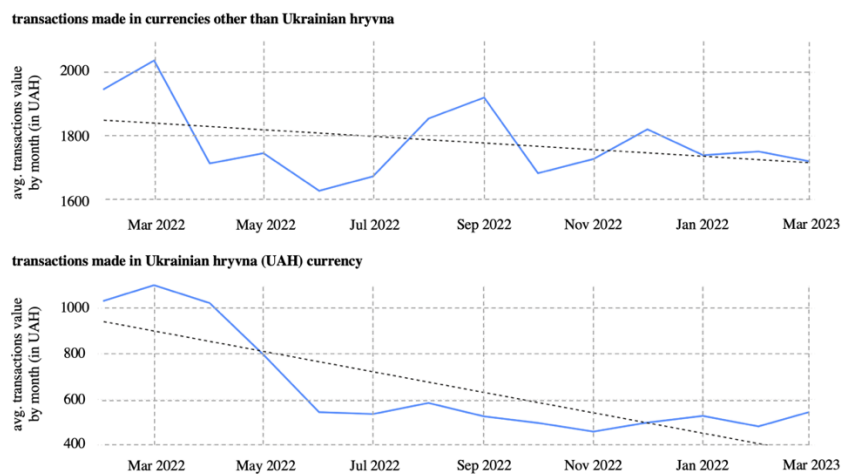
Figure 13. Average transaction monetary value comparison between a subset of transactions made in Ukrainian hryvna and a subset of transactions made in other currencies, aggregated by month. Time period: February 24 2022 until March 31 2023. Black line is the trendline.
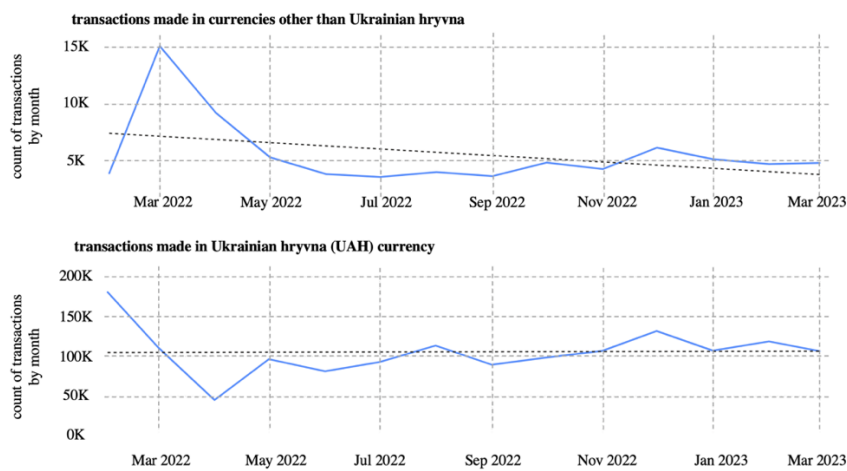
Figure 14. Transactions number comparison between a subset of transactions made in Ukrainian hryvna and a subset of transactions made in other currencies, aggregated by month. Time period: February 24 2022 until March 31 2023. Black line is the trendline.

B. Experimental instructions

Welcome to the survey for my Master Thesis!

Your participation is greatly appreciated. It's anonymous, voluntary, and will take around 5 minutes. The survey is conducted by Mariia Poretskova, a student of Erasmus University Rotterdam. The results will contribute to the behavioural economics science and help Ukraine.

If you have questions, please contact 559967mp@eur.nl.

To participate, you must be over 18 years old and agree to the consent form below.

I consent to participate in this survey and I am 18+ y.o.

→

In the the following question you will be presented with a description of an event based on articles from Ukrainian independent news magazine Ukrainska Pravda. Please read carefully and answer the questions that will follow.

←   →

One of these 4 articles is presented to the respondent:

1. Russians drop heavy bomb on Mariupol Drama Theater, where hundreds seek shelter

On 16 March, Russian forces dropped a heavy bomb on the Mariupol Drama Theatre, a shelter for hundreds who lost their homes in the war. Families with small children were hiding in the theatre, according to officials and the military personnel. About 600 people were killed as a result of the strike inside and outside of the building.

Satellite images show that there were inscriptions in large letters displaying the word "Children" for aviation pilots in front of and behind the building of Mariupol Drama Theatre. Since the inscription is easy to notice even from the satellites, it is obvious that it was seen by fire adjusters and pilots of Russian aircraft.

On 29 August, it was reported that Russian occupiers in Mariupol were "restoring" the Drama Theatre in order to cover up the murder of nearly 600 civilians. During the so-called reconstruction of the Mariupol Drama Theatre, Russian occupiers are covering the area with chlorine and pouring concrete over the dead bodies of victims in order to hide them.

215 defenders of Ukraine released from captivity

On 21 September, as part of prisoner swap with the Russian occupiers, Ukraine succeeded in freeing 215 Ukrainian defenders, including 10 foreigners. Among those who have been freed, 108 were Azov fighters. The group of released individuals also included border guards, policemen, marines, national guardsmen, members of the territorial defence, customs officers, and civilians.

Mykola Kushch and Kostiantyn Nikitenko, whom the occupiers had wanted to execute, were set free as well. Mariana Mamontova, a paramedic who was pregnant when she was captured, was also released. As part of the exchange, 10 foreigners who defended Ukraine were also freed, including those who had been "sentenced" to death by Russian occupiers.

This is the biggest exchange of prisoners of war since the beginning of the Russian full-scale invasion. The defenders of Mariupol were taken to Russian-controlled territory between May 16th and 20th, with Russia claiming that a total of 2,439 fighters had left the Azovstal bunkers.

Nineteen people have been killed and 105 injured as a result of Russian missile strikes on Ukraine on October 10

On the morning of October 10, several explosions rang out in the Kyiv city centre. As a result of the Russian attack, 6 people were killed and 50 were injured. Explosions also rang out in other cities in Ukraine: Dnipro, Khmelnytskyi, Zhytomyr and Lviv.

"This is the second attack on this scale since 24 February. From the point of view of critical energy infrastructure, this must be the largest such attack in modern history. As of now, 1,300 cities, towns and villages continue to experience power outages." - Minister of Internal Affairs of Ukraine

Russian troops used 84 cruise missiles and 24 unmanned aerial vehicles against peaceful cities in Ukraine. Over 70 facilities, including residential buildings, hospitals, and educational institutions, were damaged in the attack. Putin hints that morning attack on Ukraine is revenge for Crimean Bridge explosion.
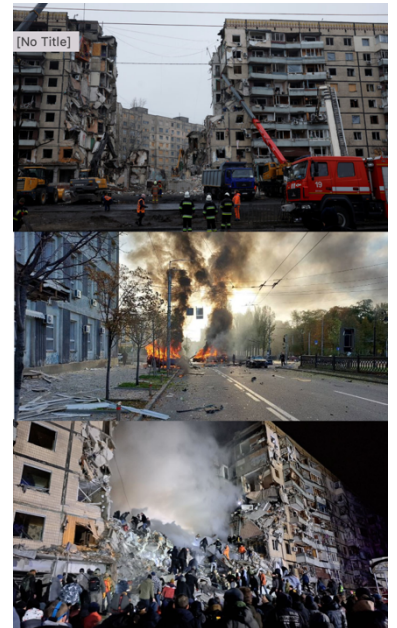
Ukrainian Defence Forces are already in Kherson city

Kherson was captured at the beginning of the war, and it was the only regional center controlled by Russia since a full-scale invasion. When it was captured, hundreds of people went to the streets for pro-Ukrainian rallies, threw themselves at enemy tanks, and unarmed, chased Russian convoys.

On 9 November 2022, Commander-in-Chief of the Russian occupying forces, announced that Russian troops were leaving Kherson. On the evening of 11 November, a moving video from the city of Kherson was posted, showing hundreds of Ukrainians who had come to the city centre with Ukrainian flags.

Quote from Zelenskyy: "Today is a historic day - we are retaking the southern part of our country. The people of Kherson have been waiting, and they never gave up on Ukraine. Hope in Ukraine is always justified - Ukraine always takes back what is hers". The President added that despite all the occupiers' threats, repressions and abuse, Kherson residents had kept their faith in Ukraine. And even though the city has not yet been completely cleared of the invaders' presence, the people of Kherson themselves are already removing Russian symbols and every trace of the occupiers from their streets and buildings.
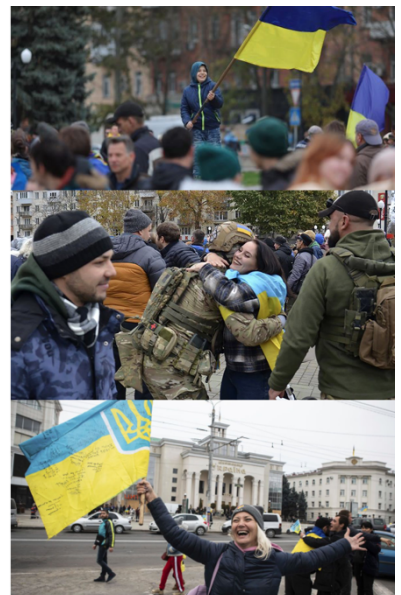
Please estimate how much you experience each of emotions at this moment (0 — do not experience at all, 7 — experience strongly).
*If you want to choose 0, you still have to click on slider to select it.

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Anger

Fear

Joy

Sadness

Disgust

Relief

Thank you for reading the article and answering questions!

As a reward you have the chance to decide how to distribute 100 euros: ranging from keeping it, or donating it all to Ukraine. Write the monetary amount (in euros) in each corresponding cell. It must sum up to 100 euros. After the survey, I will randomly choose one participant and distribute the money according to their choice. Donations will go to a reliable governmental fund United24.

Keep money for yourself	
Donate for defence and weapons	
Donate for humanitarian and medical aid	
Donate for rebuilding	

Last few simple questions!

In which country do you currently live?

What is your country of origin?

What is your age?

What is your gender?

Male

Female

Non-binary / third gender

Prefer not to say

← →

You can leave your email if you decided to keep some of the money for yourself so that I can contact you to transfer it (if you're randomly selected)

→

Thank you for participation in the survey!

All responses are confidential and data collected will only be used for academic purposes. If you have any questions, please contact 559967mp@eur.nl

← →

C. Experiment summary statistics and statistical tests

	Kherson liberation	Drama theater	Ukraine shelling	Release of POWs	all treatments
age	33.74	33.56	33.09	31.81	33.03
gender: male	53.85%	48.72%	58.69%	30.95%	48.19%
gender: female	46.15%	48.72%	36.95%	69.04%	50%
country live: Ukraine	43.59%	43.59 %	39.13%	40.48%	57
country origin: Ukraine	58.97%	58.97%	60.87%	71.43%	62.65%
donations:					
keep	10.72%	8.73%	9.80%	5.6%	8.72%
defence & weapons	44.09%	43.4%	43.43%	42.72%	43.45%
humanitarian & medical aid	25.68%	35.1%	26.89%	34.22%	30.36%
rebuilding	19.51%	12.77%	19.87%	17.1 %	17.46%
emotions:					
joy	4.615	0.1282	0.3696	4.548	2.367
relief	2.615	0.7949	1	2.214	1.639
anger	2.359	5.41	5.326	3.333	4.145
fear	1.282	2.282	2.783	1.571	2.006
sadness	2.821	5.795	4.652	3.714	4.253
disgust	1.359	4.846	4.804	1.976	3.289
N	39	39	46	42	166

Table 8. Summary statistics across treatments

Kherson liberation			**Release of POWs**		
Pairwise Comparison	Emotional intensity score	t-values	Pairwise Comparison	Emotional intensity score	t-values
joy vs anger	4.62 vs 2.36	4.27 ***	relief vs anger	2.21 vs 3.33	-2.08
joy vs fear	4.62 vs 1.28	7.12 ***	relief vs fear	2.21 vs 1.57	1.36
joy vs sadness	4.62 vs 2.82	3.38 ***	relief vs sadness	2.21 vs 3.71	-2.71 *
joy vs disgust	4.62 vs 1.36	6.94 ***	relief vs disgust	2.21 vs 1.98	0.44
joy vs relief	4.62 vs 2.62	3.75 ***	relief vs joy	2.21 vs 4.55	-4.44***
N	39			42	
Ukraine shelling			**Drama theater**		
Pairwise Comparison	Emotional intensity score	t-values	Pairwise Comparison	Emotional intensity score	t-values
anger vs sadness	5.33 vs 4.65	1.52	sadness vs anger	5.79 vs 5.41	0.9
anger vs fear	5.33 vs 2.78	6.3 ***	sadness vs fear	5.79 vs 2.28	8.72 ***
anger vs disgust	5.33 vs 4.8	1.16	sadness vs relief	5.79 vs 0.79	12.51***
anger vs joy	5.33 vs 0.37	14 ***	sadness vs disgust	5.79 vs 4.85	2.08
anger vs relief	5.33 vs 1	10.8 ***	sadness vs joy	5.79 vs 0.13	19.23***
Pairwise Comparison	Emotional intensity score	t-values	Pairwise Comparison	Emotional intensity score	t-values
fear vs sadness	2.78 vs 4,65	-4.41 ***	disgust vs anger	4.85 vs 5.41	-1.13
fear vs anger	2.78 vs 5.33	-6.3 ***	disgust vs fear	4.85 vs 2.28	5.36 ***
fear vs disgust	2.78 vs 4.8	-4.69 ***	disgust vs relief	4.85 vs 0.79	8.52 ***
fear vs joy	2.78 vs 0.37	7.33 ***	disgust vs sadness	4.85 vs 5.79	-2.08
fear vs relief	2.78 vs 1	4.72 ***	disgust vs joy	4.85 vs 0.13	12.04***
N	46			39	

Table 9. Pair-wise t-test results. Pairwise comparison of target emotions with non-target emotions by treatment. *** p<0.1, ** p<0.05, * p<0.1. N = number of observations. Bonferroni correction is applied to all p-values within each treatment.

		Drama theater						
	vs Ukraine shelling + Kherson liberation + Release of POWs							
	mean	mean not	differ.	95% CI	95% CI	t	df	p-value
	Drama theater	Drama theater		lower	upper			
defense, weapons	43.46	44.15	-0,69	-12.80	11.42	-0.11	73.22	0.91
humanitarian, medical	35.15	29.38	5.77	-4.35	15.89	1.14	62.19	0.259
rebuilding	12.8	19.2	-6.4 **	-12.6	-0.17	-2.04	96.50	0.044
keep money	8.74	8.86	-0,12	-8.23	8	-0.03	65.16	0.978
		Ukraine shelling						
	vs Drama theater + Kherson liberation + Release of POWs							
	mean	mean not	differ.	95% CI	95% CI	t	df	p-value
	Ukraine shelling	Ukraine shelling		lower	upper			
defense, weapons	43.43	44.2	-0.77	-14.09	12.56	-0.11	72.48	0.909
humanitarian, medical	26.89	32.21	-5.32	-14.64	4.00	-1.13	83.75	0.26
rebuilding	19.87	16.84	3.03	-5.16	11.22	0.74	67.67	0.462
keep money	9.8	8.45	1.35	-6.60	9.31	0.34	78.65	0.736
		Kherson liberation						
	vs Drama theater + Ukraine shelling + Release of POWs							
	mean	mean not	differ.	95% CI	95% CI	t	df	p-value
	Kherson liberation	Kherson liberation		lower	upper			
defense, weapons	46.54	43.21	3.33	-10.46	17.12	0.48	59.47	0.631
humanitarian, medical	27.1	31.85	-4.75	-14.35	4.85	-0.99	67.73	0.327
rebuilding	20.59	16.78	3.81	-5.27	12.89	0.84	51.92	0.404
keep money	11.32	8.09	3.23	-6.31	12.77	0.68	51.27	0.5
		Release of POWs						
	vs Drama theater + Ukraine shelling + Kherson liberation							
	mean	mean not	differ.	95% CI	95% CI	t	df	p-value
	Release of POWs	Release of POWs		lower	upper			
defense, weapons	42.72	44.42	-1.7	-14.16	10.77	-0.27	74.99	0.787
humanitarian, medical	34.22	29.56	4.66	-5.50	14.84	0.92	66.24	0.36
rebuilding	17.1	17.87	-0.77	-7.21	5.68	-0.24	98.66	0.814
keep money	5.6	9.93	-4.33	-11.22	2.54	-1.25	96.3	0.21

Table 10. Results of Welch two-sample t-test, comparing average donation amount to certain cause under one treatment to average donations to the same cause under three other treatments. *** p<0.01, ** p<0.05, * p<0.1. H0: difference in means = 0. HA: two-sided.

	Dependent variable: monetary value of donation to one of the causes			
	keep money	hum., medical aid	defense, weapons	rebuilding
joy	-0.884	0.033	0.741	0.401
	(0.828)	(0.867)	(1.103)	(0.752)
relief	1.197	-0.087	-1.587	0.267
	(0.814)	(0.853)	(1.085)	(0.74)
anger	0.697	-1.586	-1.392	0.342
	(1.045)	(1.088)	(1.383)	(0.943)
fear	1.066	-0.048	-1.646	2.163**
	(1.183)	(1.236)	(1.571)	(1.071)
sadness	-0.691	1.379	1.674	-1.077
	(0.979)	(1.029)	(1.308)	(0.891)
disgust	-0.524	0.436	0.39	-0.363
	(1.034)	(1.085)	(1.379)	(0.94)
age	-0.286*	-0.168	0.367	0.102
	(0.168)	(0.177)	(0.224)	(0.153)
gender: male	-0.562	-4.713	7.847	-6.396*
	(3.749)	(3.933)	(5)	(3.408)
gender: prefer not to say	-4.111	4.125	-10.054	9.806
	(13.646)	(14.347)	(18.236)	(12.43)
country origin: Ukraine	5.838	-27.223***	34.964***	-10.372***
	(4.393)	(4.574)	(5.814)	(3.963)
constant	14.728*	54.975***	7.872	22.362***
	(8.829)	(9.28)	(11.795)	(8.04)
Observations	166	166	166	166
Multiple R-squared	0.05845	0.2983	0.3459	0.1282
Adjusted R-squared	-0.002689	0.2531	0.3037	0.07191

Table 11. OLS regression with monetary values of donations to certain causes as dependent variable and emotions scores, age, gender, country of origin as influence variables. *** p<0.01, ** p<0.05, * p<0.1

D. The effect of gender and country of origin on donation decisions

Since country of origin and gender had a significant impact on charitable giving a Welch's t-test was conducted comparing means of donated amounts to the cause between Ukrainians and non-Ukrainians (Table 12) as well as between female versus male samples (Table 13). It was found that Ukrainians donate to defense and weapons 39.62 euros more, compared to non-Ukrainians, while they give 29.55 euros less to humanitarian and medical cause and 9.95 euros less to rebuilding, with all differences in means being significant at a 1% level. Comparison of donations between genders revealed that females, on average, donate 6.32 euros more to rebuilding, compared to males, at a 10% significance level.

Because country of origin seems to play a crucial role in donation decision as it has the biggest effect size, OLS regressions estimating the effect of treatments on donated amounts and controlling for age and gender within a subset of Ukrainians and a subset of non-Ukrainians have been conducted (Tables 14 and 15). The effect of treatment on donations was found only in the subset of non-Ukrainians: 'Kherson liberation', compared to 'Drama theater', decreases donations to humanitarian aid by 18.35 euros (10% significance level), while increasing donations to rebuilding by 20.23 euros (5% level significance). Furthermore, 'Ukraine shelling', when compared to 'Drama theater', increases donations to rebuilding by 13.49 euros (10% significance level).

An OLS regression within a subset of males, estimating the effect of treatments, age, and country of origin on charitable giving is presented in Table 16. Results show that within this subsample 'Kherson liberation' and 'Ukraine shelling' treatments decrease donations to humanitarian and medical aid by 15.59 euros and 16.91 euros respectively, when compared to 'Drama theater' treatment. Both effects are significant at a 5% level. Besides, having Ukraine as a country of origin, compared to other countries, decreases donations to humanitarian aid by 31.6 euros at a 1% significance level. However, Ukraine as a country of origin has the opposite effect on donations to weapons and defense: it increases the amount by 37.48 euros and the effect is significant at a 1% level. Finally, 'Ukraine shelling' increases donations to rebuilding by 12.81 euros, compared to 'Drama theater' at a 5% significance level, while each additional year of age also increases donations to rebuilding by 0.34 euros at a 10% significance level.

| | origin Ukraine | | | | | | | |
| | vs origin not Ukraine | | | | | | | |
	mean Ukraine	mean not Ukraine	differ.	95% CI lower	95% CI upper	t	df	p-value
defense, weapons	58.79	19.17	39.62***	30.59	48.66	8.66	155.57	5.627e-15
humanitarian, medical	19.7	49.25	-29.55***	-37.45	-21.63	-7.4	105.99	3.327e-11
rebuilding	13.96	23.91	-9.95***	-16.53	-3.36	-2.99	129.76	0.003355
keep money	9.38	7.89	1.49	-5.41	8.41	0.43	141.21	0.6688
	live Ukraine							
	vs live not Ukraine							
	mean Ukraine	mean not Ukraine	differ.	95% CI lower	95% CI upper	t	df	p-value
defense, weapons	60.28	32.41	27.87 ***	17.44	38.3	5.28	145.98	4.532e-07
humanitarian, medical	20.09	38.31	-18.22 ***	-25.95	-10.5	-4.66	163.14	6.534e-06
rebuilding	13.68	20.52	-6.84 **	-13.54	-0.14	-2.02	135.82	0.04557
keep money	10.09	7.93	2.16	-5.08	9.4	0.59	130.8	0.5559

Table 12. Results of Welch two-sample t-test, comparing average donation amount between people who live/originate from Ukraine versus not Ukraine. *** p<0.01, ** p<0.05, * p<0.1. H0: difference in means = 0.

| | female vs male | | | | | | | |
	mean female	mean male	differ.	95% CI lower	95% CI upper	t	df	p-value
defense, weapons	42.92	45.82	-2.9	-14.15	8.35	-0.51	158.86	0.611
humanitarian, medical	31.02	30.28	0.74	-7.85	9.34	0.17	156.71	0.864
rebuilding	20.52	14.2	6.32*	-0.18	12.81	1.92	157.11	0.057
keep money	9.17	8.43	0.74	-6.33	7.81	0.21	158.69	0.837

Table 13. Results of Welch two-sample t-test, comparing average donation amounts between female and male. *** p<0.01, ** p<0.05, * p<0.1. H0: difference in means = 0.

Dependent variable: monetary value of donation to one of the causes for subsample of Ukrainians				
	keep money	hum., medical aid	defense, weapons	rebuilding
Kherson liberation	-2.223	-1.489	15.465	-0.818
	(7.088)	(6.339)	(9.79)	(6.284)
Release of POWs	-9.12	2.987	0.641	3.463
	(6.748)	(6.035)	(9.32)	(5.983)
Ukraine Shelling	-2.814	-6.321	7.406	3.132
	(6.822)	(6.1)	(9.422)	(6.048)
age	-0.442**	-0.106	0.525*	-0.011
	(0.197)	(0.176)	(0.272)	(0.175)
gender: male	-3.699	-4.372	3.888	-5.779
	(4.914)	(4.395)	(6.787)	(4.357)
gender: prefer not to say	-8.599	12.262	-26.854	17.246
	(17.924)	(16.029)	(24.755)	(15.891)
constant	31.358***	26.446***	32.647**	14.862*
	(9.577)	(8.565)	(13.228)	(8.491)
Observations	104	104	104	104
Multiple R-squared	0.06049	0.05634	0.1011	0.0502
Adjusted R-squared	0.002381	-0.002032	0.04555	-0.008551

Table 14. OLS regression with monetary values of donations to certain causes as dependent variable and treatments, age, and gender as influence variables for the subset of Ukrainians. *** p<0.01, ** p<0.05, * p<0.1.

Dependent variable: monetary value of donation to one of the causes for subsample of non-Ukrainians				
	keep money	hum., medical aid	defense, weapons	rebuilding
Kherson liberation	11.937	-18.348*	-12.503	20.226***
	(7.999)	(10.163)	(9.523)	(7.235)
Release of POWs	2.053	-0.243	-4.69	3.181
	(8.401)	(10.924)	(10.235)	(7.776)
Ukraine Shelling	7.637	-11.143	-9.99	13.487*
	(7.289)	(9.489)	(8.891)	(6.755)
age	-0.327	0.071	0.158	0.073
	(0.352)	(0.456)	(0.427)	(0.324)
gender: male	3.472	-2.973	9.361	-9.162*
	(5.69)	(7.308)	(6.848)	(5.203)
gender: prefer not to say	10.964	-14.425	3.582	5.501
	(21.957)	(28.564)	(26.765)	(20.334)
constant	8.848	57.305***	16.669	17.309*
	(10.364)	(13.49)	(12.64)	(9.604)
Observations	62	62	62	62
Multiple R-squared	0.06404	0.08242	0.07682	0.2137
Adjusted R-squared	-0.03995	-0.01768	-0.0239	0.128

Table 15. OLS regression with monetary values of donations to certain causes as dependent variable and treatments, age, and gender as influence variables for the subset of non-Ukrainians. *** p<0.01, ** p<0.05, * p<0.1.

Dependent variable: monetary value of donation to one of the causes for subsample of males				
	keep money	hum., medical aid	defense, weapons	rebuilding
Kherson liberation	6.782	-15.586**	5.368	-0.064
	(7.638)	(7.754)	(10.438)	(5.642)
Release of POWs	3.023	-1.538	-8.115	7.353
	(8.671)	(8.938)	(12.033)	(6.504)
Ukraine Shelling	5.69	-16.908**	-0.812	12.811**
	(7.088)	(7.308)	(9.838)	(5.318)
age	-0.334	0.022	0.197	0.336*
	(0.245)	(0.252)	(0.339)	(0.183)
country origin: Ukraine	2.011	-31.6***	37.477***	-12.698
	(6.036)	(6.179)	(8.319)	(4.497)
constant	14.005	57.399***	18.512	4.92
	(9.191)	(9.442)	(12.712)	(6.871)
Observations	80	80	80	80
Multiple R-squared	0.03919	0.3655	0.299	0.1806
Adjusted R-squared	-0.02661	0.3227	0.2516	0.1252

Table 16. OLS regression with monetary values of donations to certain causes as dependent variable and treatments, age, and country of origin as influence variables for the subset of males. *** p<0.01, ** p<0.05, * p<0.1.