Essays on Experimental Economics in the Naturalistic Contexts of Forced Migration and Civil War

Asylum, Flight, and Socio-Economic Values: Evidence from lab-in-the-field Experiments among Adults and Minors

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Caminante, son tus huellas
el camino y nada más;
Caminante, no hay camino,
se hace camino al andar.
Al andar se hace el camino,
y al volver la vista atrás
se ve la senda que nunca
se ha de volver a pisar.
Caminante no hay camino
sino estelas en la mar.

Wayfarer, the only way
Is your footprints and no other.
Wayfarer, there is no way.
Make your way by going farther.
By going farther, make your way
Till looking back at where you've
wandered,
You look back on that path you may
Not set foot on from now onward.
Wayfarer, there is no way;
Only wake-trails on the waters.

Antonio Machado (1875 - 1939)
Spanish poet exiled in France during
the Spanish Civil War.

To Cosmo.

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Contents

Chapter 1. Introduction

In his seminal discussion, Roth (1995) classifies experimental economics in three different categories depending on what is the purpose of the experiments and to whom they are addressed. The category 'speaking to theorists' is implemented by researchers who test the predictive power of formal theories and establishes a dialogue between experimentalists and theorists. The second category 'searching for facts' aims at studying variables that cannot yet be included in existing theories. In this way,, experimentalists engage in a dialogue among themselves. The last category 'whispering in the ears of princes' is mainly motivated by behavioral consequences of specific changes in the organization of markets and societies enabling experimentalists to deliver policy implications to policymakers. This dissertation falls under the second and third categories, insofar as its first and foremost aim is searching for facts that contribute to the debate of what shapes economic preferences within the specific environment of social conflict and the experience of war, while also aiming at being a preliminary guide for policy implications regarding refugees. This includes the integration of refugees in host countries, the reconciliation and reconstruction of post-war society in Syria, and the special attention refugee minors may need in exile that goes beyond school attendance programs.

This dissertation came into being navigating in a natural setting between experimental economics and behavioral economics. Its leitmotiv is the idea that drawing a topographic map of human nature in a naturalistic environment is often a requirement for a deeper understanding of many economic problems. It addresses key questions about behavioral concepts by means of both lab and lab-in-the-field experiments to combine "standardized, validated paradigms from the lab and [...] relevant populations in naturalistic settings" (Gneezy and Imas, 2017). Through the study of empirical behavioral regularities, my co-authors and I mainly deliver a 'material model', i.e. "a model not composed of theory, but rather composed of elements of the real world" to put it in the words of Schmidt (2009). For this pur-

pose, details of previous experiments are systemically varied to get to the root cause of the observed behavioral regularities. The main motivation lies in contributing to the growing stream of literature on the consequences that experiencing civil war violence may have when it comes to economic preferences (Voors et al., 2012; Bauer et al., 2016; Blattman, 2009).

This cumulative dissertation consists of five independent essays.[1] They all have in common the implementation of experiments to study prevalent behavioral concepts, such as trust, altruism, risk-seeking, cooperation, peer punishment, and honesty. More precisely, my co-authors and I search for facts that hint to possible links between these behavioral traits among migrants - in this case Syrian refugees - and the experiences of war, social conflict, and asylum in a naturalistic environment, by implementing paradigms validated in the lab. This dissertation starts by contributing to the literature on the behavioral effects of key aspects of environmental factors related to migration that are relevant for the hosting societies. Finally, it adds to the literature on the behavioral effects of the individual experience of civil war and child employment for society as a whole. Chapters 2 and 3 address different aspects of the new environments Syrian refugees are living in, such as the social networks they build in Germany, or the living conditions in the refugee camp in Jordan, and how these can shape economic preferences. Chapter 4 adds to the literature on the universal preference for honesty by comparing data from refugees and non-refugees in Germany, Jordan, and Syria. Chapter 5 incorporates elicited beliefs to the analysis of how economic preferences for altruism and cooperation, and peer-punishment mechanisms are affected by war victimization. Finally, Chapter 6 focuses on the early development of economic preferences of refugee minors and how they can be shaped by the burden of family light work they have to bear in exile.

Chapter 2 puts forward the question of how the way in which Syrian refugees participate in social networks in their new environment in Germany is linked with different levels of trust and trustworthiness in experimental games. Social networks figuratively describe relations between individuals as a web of interpersonal connections

[1] The essay titled "A Sense of No Future in an Uncertain Present: Altruism and Risk-Seeking among Syrian Refugees in Jordan" has been accepted in the *Journal of Refugee Studies* and will be published soon. The essay titled "An Experimental Study on Preferences for Truth-telling among Refugees and Non-refugees in Syria, Jordan, and Germany" was submitted to the *Journal of Behavioral and Experimental Economics* and my co-authors and I are currently working on the changes following the 'revise & resubmit' recommendation of the reviewers. Finally, the essay with the title "No Man is an Island - Trust, Trustworthiness, and Social Capital among Syrian Refugees in Germany" is currently under peer-review at the *Journal of Immigrant & Refugee Studies*.

that bounds individuals together and have unintended consequences on the actions of individuals (Scott, 1988). They may foster trust and trustworthiness between individuals and facilitate the exchange of resources within societies (Coleman, 1988), but they may also create distrust between groups. This essay adds to the literature on social networks focusing on the specific population of refugees. These social networks may arise exclusively among refugees – bonding social networks, or between hosts and refugees – bridging social networks (Granovetter, 1973). Results suggest that there is a link between bonding networks and co-ethnic solidarity. This effect is significantly smaller with refugees engaged in bridging networks, and also with those refugees who are involved in both bonding and bridging networks. Staying in a refugee camp seems to be a key barrier for the proliferation of social networks between hosts and refugees, and a crucial factor hampering integration efforts into the German society.

Chapter 3 studies the importance of contextual aspects for the behavior of individuals in a situation of high uncertainty about the future due to the ongoing war in Syria. More specifically, this essay analyses environmental factors related to the living conditions in refugee camps that may shape preferences for risk and altruism among Syrians who fled the Syrian civil war and live as refugees in Jordan. These economic preferences are crucial for the economic development of societies by determining how we consume, save, and invest (Voors et al., 2012). Results show that Syrian refugees who have the feeling of having no future are significantly less likely to behave altruistically compared to other refugees. Likewise, the sense of having no future has a significant and positive correlation with higher risk-taking in lotteries that offer gains. Overall, it seems that the sense of hopelessness regarding the future is mainly connected with events experienced in the new host country rather than in Syria. In sum, findings demonstrate that the living conditions in exile not only shape the economic preferences of refugees but also influence their confidence in their future.

Chapter 4 extends the line of research on the universal preference for honesty (Abeler et al., 2019) by studying this economic preference with the implementation of a mind game (Kajackaite and Gneezy, 2017) among refugees and non-refugees in Germany, Jordan, and Syria. In this game, lying may be individually appealing. Individuals facing such circumstances find themselves in a trade-off between sustaining a self-image of being an honest person and the payoffs of lying, taking the likelihood of being caught and its associated costs into consideration. There is transnational

empirical evidence of a universal preference for truth-telling (Abeler et al., 2019). Yet, there is also empirical evidence that this preference is lower in environments in which tax evasion and corruption are widespread in society (Gächter and Schulz, 2016). In other words, it seems that the preference for truth-telling is influenced by one's environment. Findings indicate that overall, the behavior of refugees is remarkably similar to that of non-refugees regarding truth-telling when taking the average number of reported matches into account. Yet, there is a noteworthy difference in the frequency and pattern of truth-telling over rounds. First, a higher amount of refugees tend to refrain from telling the truth at a higher frequency (4,5 and 6 times). Second, after having lied once, refugee participants resort to a 'no-return' pattern (participants do not report a 'no-match' after having reported their first match) significantly more often than the non-refugee participants. The high frequencies of reported successes are associated with higher age and gender, while a longer stay in the host country is linked to a lower likelihood of showing those behavioral patterns.

Chapter 5 asks whether the experience of war affects economic preferences for altruism and cooperation, and peer-punishment mechanisms among refugees by incorporating elicited beliefs to the analysis. Economic preferences for cooperation and their enforcement through peer punishment play an important role in the smooth-functioning of societies (Ostrom, 1990). This essay contributes to this line of research by posing the question of whether having experienced violence affects the preferences for cooperation and altruism, and peer-punishment mechanisms among war victims forcibly displaced across borders. Results show that economic preferences and punishment may underlie different mechanisms regarding how they are affected by war: while war victimization does not coincide with cooperation or altruism it does coincide with antisocial punishment. More precisely, cooperators who don't believe that others will cooperate show higher levels of antisocial punishment when they have been victimized by war. In other words, the main - and most exploratory - finding shows that participants who cooperate but follow the motto 'expect the worst and you will never be disappointed' decrease their threshold for antisocial punishment, possibly triggered by such victimization.

Chapter 6 contributes to the study of what shapes the development of economic preferences among minors. More specifically, this last essay raises the question of how the burden of engaging in caregiving to family members is linked to the economic preferences of Syrian minors living as refugees in Lebanon. The first decades in life

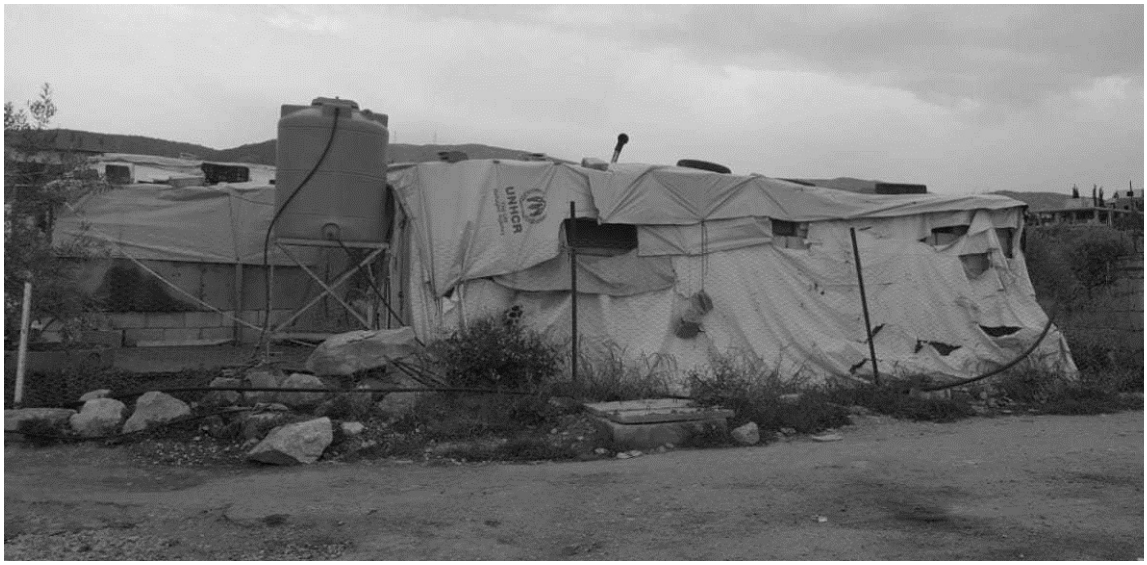
are crucial stages for the development of behavioral traits such as the preference for altruism and the willingness to cooperate with others (Fehr et al., 2008). Although refugee children face more threats to their social development and are more likely to be employed than the average child, there is a lack of empirical evidence of how the refugee humanitarian crisis is affecting child development. The burden of contributing to the household can have a negative effect on the development of behavior that is socially desirable (Becker, 2007; The Children's Society., 2020). The empirical findings in this essay underpin this conjecture: children who are caregivers at home share less with others when it comes at a personal cost and cooperate less than those who are not taking care of other family members in the household. Finally, covariates of being a caregiver highlight the multifaceted and context-specific nature of family light work as it coincides with less leisure time (and, hence, having fewer Lebanese friends) as well as with undertaking house chores, and reporting an economic loss due to the war.

In sum, this dissertation analyses with the curious mind of an experimentalist behavioral concepts in order to contribute to a deeper understanding of what shapes economic preferences that influence decision-making mainly in a naturalistic setting characterized by war, social conflict, and displacement. By doing this, my co-authors and I show phenomena in the data collected that are partly puzzling. Nevertheless, it is worth mentioning at this point that we are aware of the drawback entailed by the specific setting, in which our study has been conducted, which makes a generalization to other environments and populations as well as a replication of the results difficult. Moreover, we acknowledge at this point the possibility of the existence of self-selection among our samples, specifically regarding background information and traits which are likely to affect behavior. The Syrian samples presented in this dissertation very likely left their home country under very specific circumstances that may differ even among their own peers. Yet, keeping in mind the current global refugee and migration crisis, the questions posed by our study remain relevant for the development of society as a whole in our globalized world and sets a milestone by pointing the way to policy recommendations that wish to rely on empirical evidence.

Figure 1.1: Refugee Camp in Jordan

Figure 1.2: Refugee Camp in Jordan

Figure 1.3: Refugee Tent in Lebanon



Chapter 2. No Man is an Island - Trust, Trustworthiness, and Social Capital among Syrian Refugees in Germany[1]

Abstract

We analyze possible links between both trust and trustworthiness among Syrian refugees in relation to two different forms of social networking. Our results show that Syrians who engage in bonding networks show higher levels of trust and (un)conditional trustworthiness when interacting with a Syrian compared to a German participant. In turn, the negative discrimination refugees display towards Germans decreases regarding trust and conditional trustworthiness, and vanishes regarding unconditional trustworthiness, for refugees engaged in bridging networks. Newly arrived Syrian refugees tend to engage in bonding networks, whereas the length of stay and having a private home coincide with more bridging networks.

Keywords: bonding, bridging, refugees, traumatic experience, trust, trustworthiness, social capital, experiments.

JEL Codes: C93; D91; J15; Z13.

[1]This chapter is co-authored by Nora El-Bialy, Andreas Nicklisch, Lamis Saleh, and Stefan Voigt.

2.1 Introduction

Socialization is a key process in the integration of migrant populations into their new societies. When migrants form ties to other subjects in the new hosting society, they possibly are initiating a process of adopting values and norms of that society. Yet other types of socialization can also be a major jeopardy for societies. If migrants socialize almost exclusively with other migrants who speak the same language or originate from the same area, segregation and parallel societies may emerge (Bisin and Verdier, 2011). This can happen if migrants socialize exclusively among their peers, and do not invest themselves into integrative activities with the members of the local population. Consequently, it can be said that not all social networks are created equally: people's behavior will reflect the type of social networks that they belong to.[2] Social networks may foster trust and trustworthiness between individuals and facilitate the exchange of resources within societies (Coleman, 1988),[3] but they may also create distrust between groups. To a degree, analyzing refugees' social network usage along with their accompanying trust and trustworthiness levels towards Germans can be used to make predictions regarding the degree to which the integration of refugees – and migrants in general – is likely to be successful.

Social networks have attracted attention as a crucial element in our understanding regarding the adaptation of newcomers to a host country (Allen, 2010; Elliott and Yusuf, 2014). After migration, members of social networks may provide each other accommodations, job information, information on social services, and emotional support (Boyd, 1989). Social networks that refugees join in the host country

[2] As Scott nicely summarizes, the metaphorical use of 'social networks' was made popular in classical German sociology - by Weber, Tönnies, and Simmel - in order to describe social relations as a web of interpersonal connections that bounds individuals together and have unintended consequences on individuals' actions (Scott, 1988).

[3] Coleman emphasizes the importance of social capital for the formation of human capital. Specifically, he finds a positive correlation between social networks inside and outside the family, and remaining in high school until graduation.

are likely to be a key element in facilitating their adaptation to the new socioeconomic environment. These may arise exclusively among refugees – bonding social networks, or between hosts and refugees – bridging social networks. The distinction between bonding and bridging networks builds on the influential work of Granovetter (1973).[4] Putnam et al. (2000) expand on the difference between bonding and bridging social networks. Broadly defined, bonding networks refer to within-group connections, and bridging networks denote connections between groups. Bonding social networks may create in-group favoritism and they may also, by contrast, create out-group antagonism, although this need not be the case. Additionally, bridging social networks may bridge divisions among different ethnic communities (ibid.). Exploring the potential links between involvement in social networks and individual behavior is the main motivation for this study.

To analyze the relationship between the kind of networks Syrian refugees form and belong to in Germany and the potential effect on behavior, we conducted experiments with Syrian refugees in Germany. We question how the way in which Syrian refugees participate in social networks in their new environment correlates with different levels of trust and trustworthiness in experimental games. To learn whether the identity of the interacting partner matters, we randomly apply two treatments: a Syrian participant playing with another Syrian participant and a Syrian participant playing with a German participant.

Our study contributes to the increasing literature on the behavioral effects of migration both for the releasing and the receiving country.[5] Khadjavi and Tjaden (2018)

[4]Granovetter distinguishes between strong and weak ties. Strong ties exist between members of a group with significant similarities that frequently interact with one another, for instance, family and close friends. Weak ties are characterized by distant social relationships and infrequent interactions; these are usually found between acquaintances.

[5]In our literature review, we consider both studies analyzing the behavior of, and the behavior towards, voluntary migration and forced migration (i.e., refugees). Quite a number of studies explore specific behavioral anomalies of refugees resulting from the experience of extreme violence, war, and flight (e.g., Bauer et al. (2016), El-Bialy et al. (2020), El-Bialy et al., (in press))

as well as Cettolin and Suetens (2019) have analyzed the behavior of subjects from the hosting nation towards migrants. Their findings show that the subjects from the hosting nation negatively discriminate against migrants from another country. Particularly, Khadjavi and Tjaden find that new arrivals to a public good setting are required to contribute over-proportionally for the benefit of the incumbent population. Cettolin and Suetens demonstrate that Dutch subjects are significantly less trustworthy towards refugees than towards other Dutch subjects. Unlike Dutch trustors, refugees' trustors suffer payoff-wise on average a loss when playing the trust game with a Dutch trustee.[6]

A study by Barr and Serra (2010) analyses to which degree migrants transfer behavioral norms from their home societies – particularly, the acceptance of corruption – to decisions made in their new habitat. The authors show that migrants are more likely to accept corruption if it is a generally accepted practice in their home country. Yet the effect decreases significantly with the length of time the migrants have spent in the United Kingdom.

We add to the extant literature by analyzing potential transmission mechanisms between the specific form of a social network and individual behavior. That is, we test whether refugees who form social ties with others of the same or similar nationalities show different forms of trust and trustworthiness than those refugees who hold primarily ties with members of the hosting nation. In a second step, we explore whether refugees form predominantly bonding or bridging ties based on specific aspects of their living conditions of in Germany (in particular).

Our results show that the decisions Syrians make in trust games is influenced by the type of social networks they are involved in. Overall, involvement in bonding

[6]However, Jeworrek et al. 2020 find that the willingness to give money to individual refugees increases significantly when those refugees are known to provide volunteer activities for their peers or members of the hosting nation.

networks among Syrians positively correlates with more trust, and higher levels of both unconditional (independent of how much the other player trusts in the first place) and conditional (dependent on how much the other player trusts in the first place) trustworthiness between the members, compared to involvement in bridging networks. However, this effect is almost exclusively caused by the fact that Syrians engaging in bonding networks discriminate positively against other Syrians. That is, they show higher levels of trust and conditional trustworthiness towards potential members of the bonding network than when interacting with members of the hosting nation. This effect is significantly smaller with refugees engaged in bridging networks, and also with those refugees who are involved in both bonding and bridging networks. Regarding unconditional trustworthiness, Syrians involved in bridging networks do not favor fellow Syrians when compared to their interactions with a German participant, while Syrians involved in bonding networks do so. This suggests that there is a link between co-ethnic solidarity and bonding networks that exists in early stages of the stay in the new environment: newly arrived Syrian refugees tend to engage in bonding - strengthening co-ethnic ties - whereas those having stayed longer in Germany tend to engage more in bridging. Moreover, residence in private houses is significantly correlated with bridging activities of refugees, while residence in refugee camps is not. Therefore, staying in a camp seems to be a key barrier for the proliferation of social networks between hosts and refugees, and a crucial factor hampering integration efforts into the German society.

The rest of the paper is structured as follows: In the next section, we present the hypotheses we propose to test. Section three describes the game. Section four explains how the refugees were recruited and the experiments conducted. Section five reveals the results of our experiment. Section six shares our conclusions.

2.2 Theoretical Framework and Hypotheses

The term 'social capital' has had quite a career over the last couple of decades. It has been used in various disciplines, but a generally agreed upon definition has yet to emerge. In this study, we rely on Lin's (2002) description of social capital as 'investment in social relations with expected returns'. Investing in social capital can have positive returns since it may help individuals to reach their goals more effectively. However, it has long been acknowledged that investing in social capital does not necessarily generate positive externalities on society (Coleman, 1988; Putnam et al., 2000). Negative consequences such as sectarianism, ethnocentrism, and corruption, as well as positive consequences such as cooperation, trust, and mutual support, are two sides of the same coin when it comes to social capital (Putnam et al., 2000). In recognition of this, social capital has been categorized into two main types (Putnam et al., 2000; Paxton, 2002): bonding social networks – exclusive networks that tend to reinforce homogeneous groups, and bridging social networks – inclusive networks that tend to include people from diverse social backgrounds. We utilize the contrasts between bonding and bridging networks to examine possible links to individual behaviors in different treatment scenarios among Syrian refugees in Germany.

Bonding networks have been characterized as a source of context-specific reciprocity and solidarity (Putnam et al., 2000). Migrants' social networks have been frequently considered as based on co-ethnic solidarity (Sensenbrenner and Portes, 2018; Sanders and Nee, 1996), and on high levels of trust that may increase the likelihood of exchange of resources (Coleman, 1988). We expect to find a link between refugees who engage in bonding networks and a positive discrimination towards fellow refugees, in terms of high levels of trust and trustworthiness between refugees. Social networks that bond refugees together can become a safety net for potentially traumatized

refugees upon arrival, which can help facilitate resilience in the host country (Hurlbert et al., 2000). Moreover, valuable information about sociocultural norms in the host country is likely shared through social networks among refugees. Being actively engaged in these social networks can help newly arrived refugees to adapt to the new environment. However, bonding capital may also have negative external effects for society, as it can exclude others from the expected returns (Van Staveren and Knorringa, 2007). Overall, it seems that refugees engaging in bonding networks positively discriminate against trustors from the same nationality. This implies:

Hypothesis 1: Refugee participants who engage in bonding networks show higher levels of trust and unconditional trustworthiness when playing with potential members of the bonding network than when playing with others

On the other hand, bridging networks can foster broader identities and general reciprocation (Putnam et al., 2000). Bridging networks arise out of volunteer interactions between individuals with different backgrounds. Reciprocity is a fundamental element for this way of networking, which can support collective action benefiting more members from all walks of society (Larsen et al., 2004). Inter-ethnic networks can be valuable to immigrants in many ways. Information related to the bureaucratic asylum process shared between hosts and refugees can be helpful for refugees. Additionally, having a wider social network with a high number of acquaintances facilitates immigrant participation in the host society and can be central to them accessing the labor market, as most employers are nationals (Heath et al., 2005). Bridging networks tend to rely to a much larger degree on mutual reciprocation, as its members have little in common *per se*. Therefore, we expect to find a strong link between engaging in bridging networks and conditional trustworthiness between refugees and hosts, hypothesizing that:

Hypothesis 2: Bridging networks are associated with higher levels of conditional (i.e., reciprocal) trustworthiness compared to bonding networks.

There is some conceptional ambiguity when classifying bonding and bridging networks, because many social networks can have characteristics of both bonding and bridging simultaneously. Groups that share a similar background are not completely similar in every aspect, and may create bridging networks, as group members may belong to different generations, different genders, or have different levels of education. Conversely, groups that engage in bridging networks may involve individuals with the same age, gender or level of education.

To classify social networks into bonding and bridging ones we rely on previous research. Religious associations are predominantly conceived as having characteristics of bonding networks (Paxton, 2002; Menahem et al., 2011). They can reaffirm ethnic identities and facilitate the practice of familiar religious rituals (Hirschman, 2004).[7] Being part of a minority religion is usually associated with bonding social capital (Allen, 2010). In this study, participating in activities related to mosques is considered as involvement in bonding social networks. In contrast, community, human rights, environmental, and peace associations are categorized as networks that connect individuals who belong to different groups – that is, as bridging networks (Paxton, 2002; Stolle and Rochon, 1998; Coffé and Geys, 2007). Accordingly, we include the following types of social networks to the category of bridging networks: youth clubs, sports clubs, student activities, neighborhood associations, and volunteer work.

[7]However, due to several contextual reasons, religious associations can also have a bridging aspect as they may connect refugees to the wider society. The religious backgrounds of refugees, the level of secularity in society, and the historical arrangements between state and religion are three important factors determining the bonding or bridging role of religious associations. In Western Europe, religious networks are mainly seen as creating bonding ties, while in the Unites States they play rather a bridging role (Foner and Alba, 2008).

2.3 The Game

We use a version of the trust game that is very similar to that proposed by Berg et al. (1995) to measure subjects' trust and trustworthiness. There are two players, a trustor and a trustee, both receiving an identical initial endowment of 150 points. The trustor can send any amount of points to the trustee between 0 and 150 points, in multiples of 50 points. On its way to the trustee, the amount is tripled. This means that the trustee receives 150, 300, 450, or 600 points. The trustee then decides how many points to keep and how many to send back – if any. Subjects complete the game in both roles, trustor and trustee. Importantly, the trustee's decision is collected implementing the strategy method, revealing the number of points that the trustee would send back if the trustor sent 0, 50, 100 or 150 points to the trustor. The payment is then made between a randomly formed pair of players, one in the role of the trustor, the other in the role of the trustee. Payoffs were determined by matching the trustor's decision with the corresponding decision from the trustee's set of decisions.

Conventional economic rationale tells us that no points should ever be sent, because the trustee is expected to keep all the points (s)he has received. That is anticipated by the trustor who, therefore, does not send any points. Therefore, amounts sent by the trustor are referred to as trust in the literature, whereas amounts sent back by the trustee are interpreted as trustworthiness. To learn whether the identity of the interacting partner matters for both trust and trustworthiness, we apply two treatment conditions: a Syrian participant playing against another Syrian participant and a Syrian participant playing the game against a German participant.[8]

[8]German participants were recruited to act as the counterparts for our Syrian participants under exactly the same conditions. However, throughout this paper we focus exclusively on the decisions of the Syrian participants.

Notice that relying on the strategy method allows us to distinguish two motives as to why trustees return points to the trustor. On the one hand, the trustee could be generally altruistic towards the trustor (perhaps the trustee is, for instance, inequality averse and tries to equalize endowments by sending the money). We refer to this case as unconditional trustworthiness, as the trustee will return some points irrespective of whether the trustor sent any points in the first place. On the other hand, the trustee may return points because he or she desires to reciprocate the trust of the trustor. We will denote this case as conditional trustworthiness: the trustee reciprocates the behavior of the trustor; in other words, the more points the trustor has sent the more points the trustee will return.

Reliance on the strategy method gives us five data-points for every participant (one when assuming the role of trustor and four when assuming the role of trustee, dependent on the four possible choices a trustor has in the first place) and enables us to separate unconditional from conditional trustworthiness. To do so, we run an individual ordinary least square estimation, with the four amounts sent back from the strategy method as dependent variables, and the four potential amounts sent by the trustor as independent variables. This procedure allows us to estimate a function consisting of an intercept and a slope of the amount sent. We interpret the slope as conditional trustworthiness (i.e., the share of a point of trust that is returned), while the intercept as our measure for the unconditional trustworthiness (i.e., the number of points that are transferred independently of the behavior of the interaction partner).

2.3.1 Experimental Procedure

The experiment underlying this study was conducted as a lab-in-the-field experiment between January 2017 and July 2018, in Germany.[9] The authors have used a similar approach elsewhere to analyze, among other things, the specific behavior of Syrian refugees in Jordan (see, El-Bialy et al., in press).

Today, most experimental economists rely on established laboratory structures for recruiting their participants. For a variety of reasons, those methods do not work for recruiting Syrian refugees. We have tried our best to replicate the volunteer recruitment process usually carried out with students at university campuses, in which recruiters hand out invitations for an academic study. Syrian participants were recruited via Syrian student assistants. Descriptive statistics regarding the refugee sample are contained in Table 2.A.I in the Appendix. German participants were invited to participate relying on the subject pool of a university's experimental laboratory for students, and for non-student citizens living in Hamburg (Bock et al., 2014). Descriptive statistics regarding the hosting society sample are contained in Table 2.A.II in the Appendix.

The instructions of the game were formulated in Arabic and written in a neutral way (see Appendix 2.E for English version). Semantic equivalence was ensured by having a group of native speakers translate the English version into Arabic, then having a second group translate it back into English. Anonymity was guaranteed throughout the sessions, and it was made clear that participants could exit the study at any time and that the post-experimental questionnaire was not compulsory.

[9] Our experimental setting has been approved by the ethics committee for experimental research at the University of Hamburg. The authors are happy to provide further details upon request. This experiment was part of a larger study. The other games inquired into (in this order): altruism, risk behavior, reciprocity, cooperation, and honesty. The study was conducted with Limesurvey. The open-source statistical software R was used for the analysis.

The experiment was followed by a post-experiment questionnaire with basic sociodemographic questions including age and gender, as well as questions related to participation in social activities in the host society. There were also questions related to post-traumatic-stress-disorder (PTSD) symptoms that people may experience after going through hurtful or terrifying events, which we denote here as 'distress level'. In the distress part of the questionnaire, subjects could rate potential feelings of unease (e.g., 'unable to feel emotions') on a four-point scale ranging from 'not at all' to 'a little' to 'quite a bit' to 'extremely'.[10]

The experiments were run in three different German cities - Hamburg, Stuttgart and, Leipzig.[11] In each location, facilitators with Syrian nationality contributed to the recruitment process by posting invitations to an academic study in reception centers, and also at places frequently visited by Syrians, such as German classes, Syrian restaurants, and universities. Additionally, we posted an invitational text on a social media group that we established in 2016 among Syrian refugees in Germany.[12] During the experiment, questions raised by the participants were answered in private. Every participant was assigned a different personal code used for claiming their payments. Points earned during the experiment were converted to Euros at a rate of 1 point to 0.01 Euro. The average duration of the trust game part of the experiment took about 10 minutes (a complete session lasted about 90 minutes), and average earnings in the trust game were 2 Euro (participants earned additional money in other parts of the experiment). At the end, these were handed out in sealed envelopes, and the specific amount received was kept confidential.

[10] See Appendix 2.D for the questions related to PTSD symptoms.

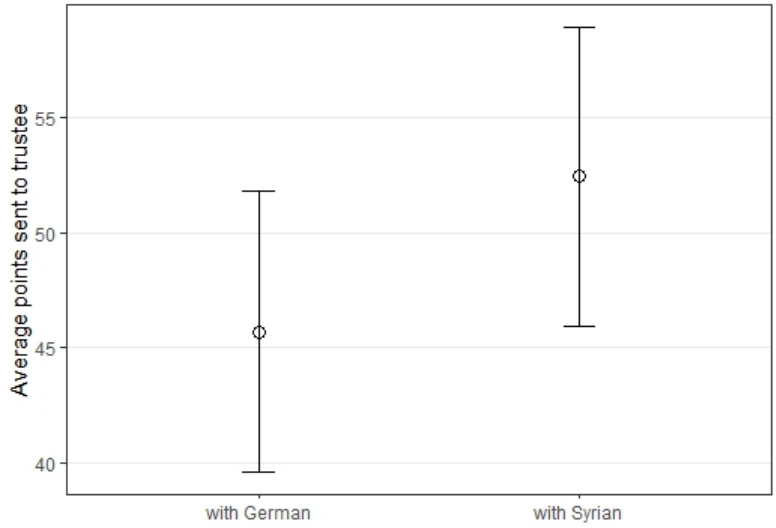
[11] Controls for the location of the experiments can be found in the Appendix in Tables 2.B.I - 2.B.II. Results remain robust overall. However, living in Stuttgart coincides with higher amounts of trust and conditional and unconditional trustworthiness compared to Leipzig.

[12] During the recruitment of Syrian refugees for our first pilot sessions in Germany, we realized that social networks were their main means of digital communication.

2.3.2 Results

As mentioned earlier, we implement a between-subjects treatment condition in which a Syrian participant either plays with another Syrian participant (N=82), or a German participant (N=70). Figure 2.1 shows trust results divided by our treatment condition. On average, Syrian trustors sent 45.7 points to a German trustee, compared with 52.4 points sent to a Syrian trustee. However, this difference in trust between treatment conditions is statistically insignificant (Wilcoxon rank sum test, p-value = 0.5937).

Figure 2.1: Trust

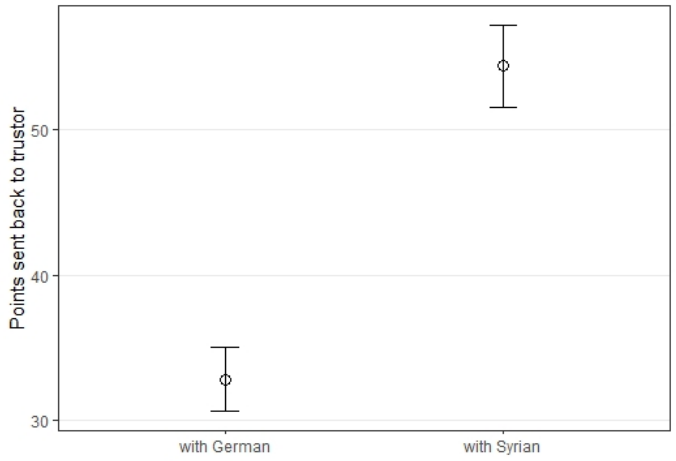


Figures (2.2a - 2.2b) show the second variable of the game, trustworthiness, measured by the values for the individual intercepts and slopes (i.e., the unconditional trustworthiness and the conditional trustworthiness, respectively) estimated in our regression analysis mentioned earlier. Figure 2.2a shows the average intercept (i.e., the amount the trustee sends on average independent of the amount received by the trustor). Syrians show on average an unconditional return of 32.9 points to a German trustor, while they return 54.4 points to a Syrian trustor. This difference

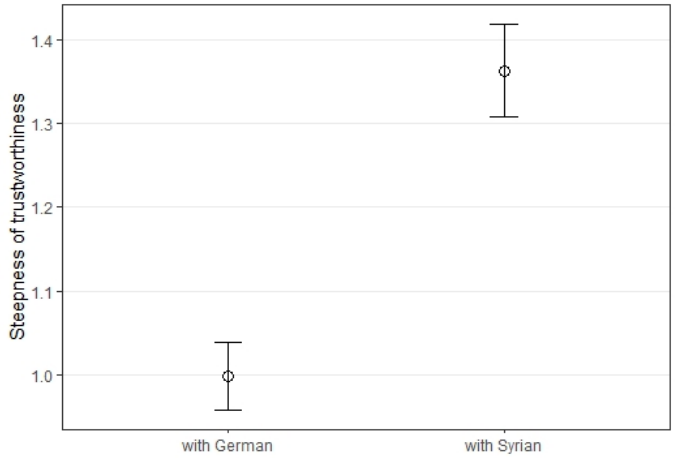
proves to be statistically significant (Wilcoxon rank sum test, $p - value = 0.0146$).

Figure 2.2b illustrates the average slope (i.e., the share of a point of trust that is returned conditionally on the behavior of the trustor). The slope estimate for Syrian participants who interact with a German participant in the game yields 0.999 on average, which is fairly close to 1, meaning participants will be returning the same amount of points that they received. This is a minor form of cooperation, since trustees keep all the surplus for themselves. Syrian trustees who play with another Syrian participant send back on average 1.36 of the amount of points received, meaning they are sending back some of the amount tripled by the experimenter. This treatment difference is also statistically significant (Wilcoxon rank sum test, p-value = 0.0441).

Figure 2.2: Trustworthiness



(a) Intercept



(b) Slope

Additionally, in the post-experimental survey we elicit whether participants engage solely in bonding or bridging networks, or in both.[13] In our sample, 15% of our participants are solely engaged in bonding networks (hereafter: *BonNet*), 19% participate in both bonding and bridging networks (hereafter: *BBNet*), and 66% are

[13] 17 participants did not answer the questions relating to social capital. We cannot distinguish between participants who do not engage in any kind of social capital and those who decided to leave the question unanswered due to unknown reasons. Because of this, we restrict our analysis to participants that actually engage in social networks. The percentages here indicated are calculated without taking these 17 observations into consideration.

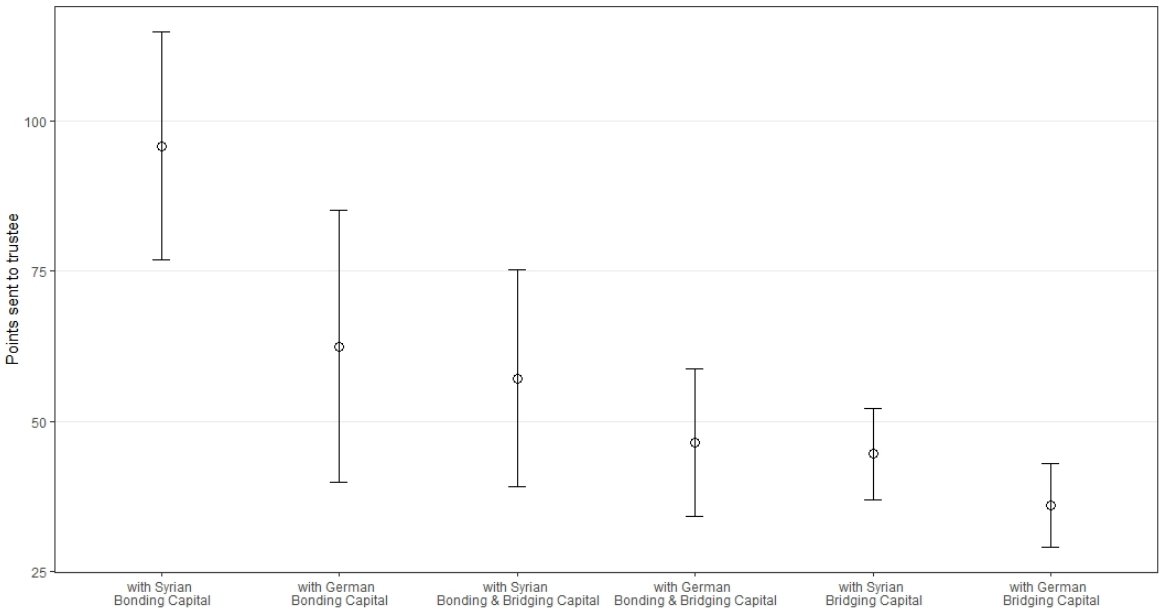
engaged exclusively in bridging networks (hereafter: *BriNet*).

Figure 2.3 shows the average number of points sent by Syrian trustors.[14] From left to right, we see the different ways in which Syrian participants engage in social networks: either exclusively through bonding, through both bonding and bridging, or through bridging only. Additionally, we add the treatment information of whether participants interacted with a Syrian or a German participant. Our between-subject experimental design allows us to see whether the identity of the receiver matters for the amount sent by the trustor, taking the different forms of participation in the two types of social networks into consideration. We find significant differences in trust levels across treatments.[15] Participating in bonding networks correlates with higher levels of trust towards other members of the 'bonded' group. Specifically, Syrian participants who engage in bonding networks send more points to another Syrian participant compared to those Syrians who participate in bridging networks when they interact with another Syrian (Wilcoxon rank sum test, $p - value = 0.01734$).

[14] See Figure 2.B.I in the Appendix for the distribution or trust depending on the social networks only.

[15] Wilcoxon rank sum test: *BonNet* with Syrian and *BonNet* with German: $p - value = 0.2916$; *BBNet* with Syrian and *BBNet* with German: $p - value = 0.8068$; *BriNet* with Syrian and *BriNet* with German: $p - value = 0.4684$.

Figure 2.3: Average of Points Sent by Trustor (Trust)



As mentioned before, to analyze possible links between social networks and trustworthiness, we unbundle the behavior of the trustee into two components, an unconditional and a conditional one.[16]

Figure 2.4 shows the values for the individual intercepts (i.e., the unconditional trustworthiness) estimated in our regression analysis. Syrians who engage in bonding networks display substantially higher levels of unconditional trustworthiness towards a fellow Syrian participant than those engaged in bridging networks (90 points versus 49 points). We interpret the high level of unconditional trustworthiness among Syrian participants who bond as co-ethnic solidarity. Treatment effects are visible, but only statistically significant for Syrians in bridging networks.[17] Syrian participants who engage in bonding networks send on average 90 points unconditionally to

[16]For the distribution of the total amount of points returned depending on the social networks see Figure 2.B.II in the Appendix.

[17]Wilcoxon rank sum test: *BonNet* with Syrian and *BonNet* with German: $p-value = 0.4612$; *BBNet* with Syrian and *BBNet* with German: $p-value = 0.6957$; *BriNet* with Syrian and *BriNet* with German: $p-value = 0.0306$. This significant difference appears in need of further clarification, yet it is likely that the non-parametric tests fail to reject the H_o due to the limited number of observations in the bonding network group.

another Syrian, while they send on average 70 points unconditionally to a German participant. Meanwhile, Syrians who bridge send on average 49 points to fellow Syrian participants, and 29 points to German participants.

Figure 2.4: Unconditional Trustworthiness Coefficients

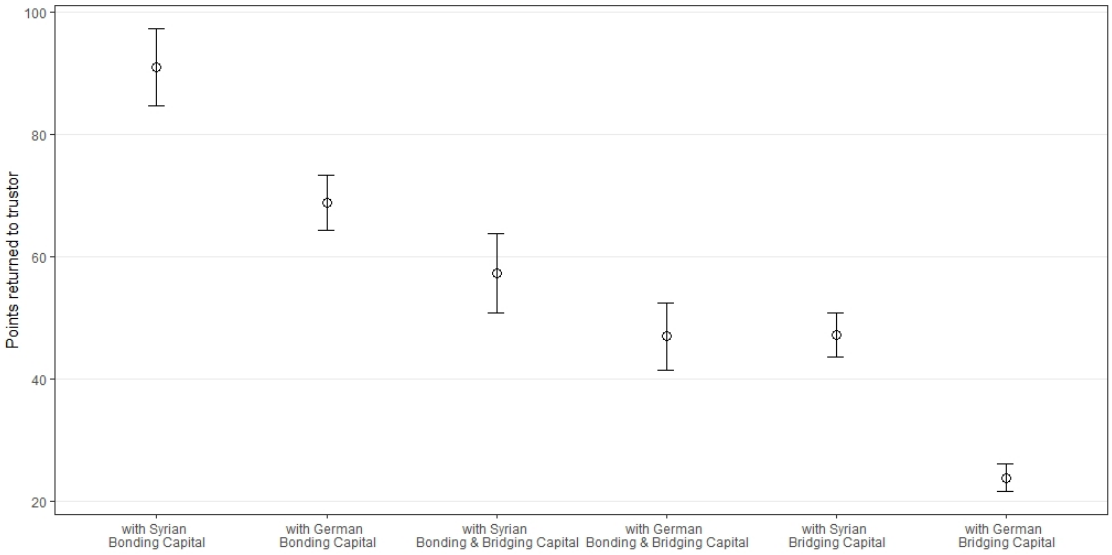


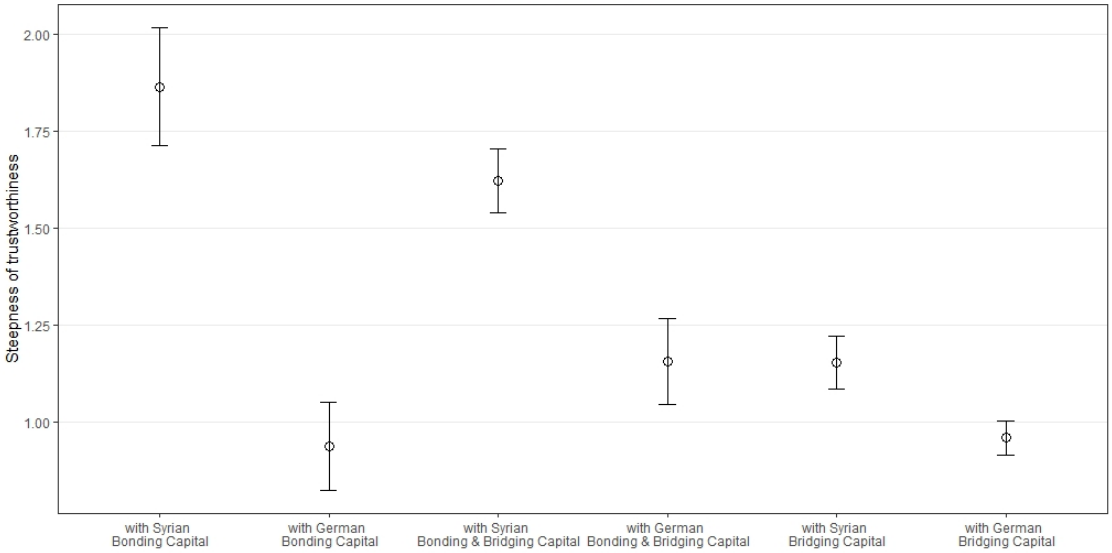
Figure 2.5 shows the coefficients for conditional trustworthiness.[18] There is a significant difference in the way Syrians who engage only in bonding networks interact with other Syrians versus Germans, but not for those engaging in both bonding and bridging, or only in bridging social networks.[19] The difference in the slope estimates for Syrian participants who engage in bonding networks and interact either with a German or a Syrian participant equals 0.928, while the treatment slope difference among those who bridge is 0.194. Although both groups tend to favor fellow Syrians, the treatment effect among those who bond almost amounts to the whole amount of points sent by the trustor, while it decreases to around 20 percent for those who bridge.[20]

[18] A slope of 1 means that a trustee always returns the same amount of points the (s)he received from the trustor.

[19] Wilcoxon rank sum test: *BonNet* with Syrian and *BonNet* with German: p-value = 0.0580; *BBNet* with Syrian and *BBNet* with German: p-value = 0.1536; *BriNet* with Syrian and *BriNet* with German: p-value = 0.6034.

[20] One may argue that the slope of a linear estimation poorly characterizes conditional trustwor-

Figure 2.5: Conditional Trustworthiness Coefficients



For an in-depth analysis of these results, and to empirically test our hypotheses, we estimate the following regression models on trust and trustworthiness and test whether the social networks Syrian participants engage in affect individual behavior, explicitly controlling for potentially relevant con-founders such as age, gender and education level. The OLS regression model in Table 2.1 focuses on trust. The dependent variable is the proportion of points sent by Syrian trustors and, hence, our measure for trust.[21] The constant term shows that bonding networks are positively

thiness: trustees may increase their return rates the more points trustors send in the first place. This implies (at least) estimations including quadratic terms of the amounts sent. However, Figure 2.B.II in the Appendix shows the confidence intervals of return rates for all possible amounts sent and for each group of social capital separately. The sequence of confidence intervals appears to follow a linear trend rather than a quadratic form.

[21]The independent variables include Age groups, which is a categorical variable describing groups of age from 1 to 7, with the lowest age group being from 16-26 years and the highest one above 66 years. Education is a categorical variable that runs on a scale from 1, 'learned to read and write without being schooled', to 6, 'post-graduate degree'. Male is a dummy variable describing the gender of the participants. Married is a dummy variable describing the marital status of participants. Length of residence is a continuous variable that describes the time spent in Germany in months (with the lowest being 10 months, the highest being 67 months, and the mean, 24 months). Distress Level shows the average level of PTSD symptoms. Answers were coded on a scale from 1 ('not at all') to 4 ('extremely'). If the average score is higher than 2.5, subjects are considered symptomatic for PTSD. Finally, *BBNet* and *BriNet* denote those participants that are engaged either bonding and bridging activities or in exclusively bridging activities respectively. The baseline is a dummy for exclusively participating in bonding activities. *WithGerman* denotes the treatment scenario in which a Syrian participant is matched in the experiment with a German

correlated with trust among Syrians. The *BriNet* coefficient indicates the difference between refugees engaging in bridging and bonding networks (*BonNet* being the baseline for the social networks), while the interaction terms *BriNet*withGerman* and *BonNet*withGerman* test for deviations from the overall trend when interacting with Germans. In other words, among Syrians who interact with another Syrian, those engaged in *BriNet* send significantly fewer points compared to those engaged in *BonNet* (technically, the proportion of trust decreases by 0.44 with a $p - value < 0.01$).

However, as selection into social networks is endogenous, we now estimate the effect of our randomized treatments within the same social network categorization. The first treatment difference is indicated by the *withGerman* variable: the coefficient shows the difference between *BonNet*withGerman* and *BonNet*. We find a negative and significant difference, insinuating that the identity of the interaction partner matters for the level of trust among Syrians who engage in *BonNet*. As mentioned above, *BonNet* is frequently related to high levels of intra-group trust. This result is, hence, in line with our first hypothesis: participants who engage in bonding networks show higher levels of trust when playing with potential members of the bonding network than when playing with outsiders. The following interaction terms show that the treatment effect remains marginal for participants who engage in both bridging and bonding and for those who only engage in bridging exclusively, as shown by the coefficients for *BBNet*withGerman* and *BriNet*withGerman*.[22] The potential con-founders are never significantly associated with the number of points sent, except for Syrian males, who sent marginally more points.

participant.

[22] F-tests for linear hypothesis testing of the effect of interaction terms yield insignificant results: $withGerman + BBNet*withGerman = 0$, p-value = 0.749; $withGerman + BriNet*withGerman = 0$, $p - value = 0.421$.

Table 2.1: OLS on Trust

	Dependent variable:
	Trust
	Proportion of points sent
	(scale: 0 - 1)
Age groups	0.008
	(0.030)
Education	−0.005
	(0.030)
Male	0.143*
	(0.075)
Married	−0.008
	(0.081)
Length of residence (in months)	0.003
	(0.003)
BBNet	−0.308**
	(0.141)
BriNet	−0.443***
	(0.118)
WithGerman	−0.413***
	(0.157)
BBNet*WithGerman	0.367*
	(0.211)
BriNet*WithGerman	0.350*
	(0.177)
Constant	0.534***
	(0.190)
Observations	128
Adjusted R^2	0.089
F Statistic	2.242** (df = 10; 117)

Standard errors are reported in parenthesis. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

The OLS regression models in Table 2.2 analyze trustworthiness. The dependent variable in model 1 is the individual intercept indicating the number of points returned by the trustee, even without receiving points. This kind of unconditional trustworthiness can be interpreted as a proxy for co-ethnic solidarity when it appears within an ethnic group and not – or to a significantly lower extent – between groups. Again, the *BriNet* coefficient indicates the difference between refugees engaging in bridging and bonding networks (*BonNet* being the baseline for the social networks),

while the interaction terms *BriNet*withGerman* and *BonNet*withGerman* test for deviations from the overall trend when interacting with Germans. Syrians who engage in bonding capital and interact with a fellow Syrian send around 47 points more than those engaged in bridging capital. But again, endogeneity concerns loom large and we are, hence, particularly interested in the results of the randomized treatments.[23] The coefficient of the *withGerman* variable shows the effect of being randomly assigned to a German participant, compared to playing with a fellow Syrian. It is negative and marginally significant in regards to unconditional trustworthiness (10% level). In other words, Syrians who bond with fellow Syrians send *per se* more points back compared to those who interact with a German participant. This result corroborates our first hypothesis (although only at the margin): Syrian participants who engage in bonding networks show co-ethnic solidarity.

The dependent variable in model 2 is a coefficient estimated individually for each participant based on the number of points returned by the trustee that are conditional on the number of points sent by the trustor (i.e., the slope). In general, trust is reciprocated, yet not equally. Results show that there is - analogous to model 1 - a significant difference between *BriNet* and *BonNet*: among Syrians who play with a fellow Syrian, bonding network usage is associated with higher amounts of conditional trustworthiness compared to bridging network usage. We therefore cannot corroborate our second hypothesis according to which we expect participants in bridging networks to display higher levels of conditional trustworthiness compared to members of bonding networks. Although bridging networks are based on reciprocity and one could expect to see a link between the reciprocation of trust and bridging networks, the presence of an interacting partner seems to overrule the link between

[23] Endogeneity concerns are an issue in many social capital studies (Mouw, 2006). Here, it could be the case that trust contributes to the formation of bonding capital, but it could also be the case that bonding capital contributes to the formation of trust. As far as we are concerned, this limitation is overcome with the implementation of random treatment scenarios.

individual behavior and social networks. Again, we analyze the treatment effect to alleviate endogeneity concerns. There is a negative and significant coefficient for *withGerman*: Syrians who bond show higher levels of conditional trustworthiness when they play with a Syrian compared to when playing with a German participant (1% level). This effect is significantly reduced for Syrians who engage in bonding and bridging (10% level) and those who exclusively engage in bridging (5% level). Finally, married Syrian participants tend to send a higher amount of points back conditional on the number of points received compared to those who are not married (5% level).

To further analyze the determinants of bonding and bridging capital among Syrian refugees, we estimate two separate probit models in Table 2.3: model (1) for the bonding network formation, and model (2) for the bridging network formation. We report the marginal effects with the same control variables as above. Furthermore, we introduce additional variables measuring the living conditions of participants, including their distress levels as discussed above. Bonding networks have been characterized as a source of resilience after experiencing a difficult situation. These kinds of networks can help refugees upon arrival to the host country through, for instance, providing comfort and sharing helpful information. Hence, it could be the case that individuals with high distress levels are more likely to participate in bonding networks. In contrast, we measure the living conditions by a dummy variable indicating whether refugees live in private housing. One could argue that private housing facilitates contact with the hosting population. Often, the neighborhood may be the only chance to meet Germans recurrently. Hence, it could be that refugees with private housing are more likely to form bridging networks than refugees who live in reception centers or refugee housing.

Model (1) shows that the association between mental distress and the participation

Table 2.2: OLS Regression Analysis on Trustworthiness

	Dependent variable:	
	Trustworthiness	
	OLS	
	Intercept	Slope
	(1)	(2)
Age groups	0.001	−0.074
	(3.775)	(0.070)
Education	−3.449	−0.057
	(3.830)	(0.071)
Male	5.220	0.053
	(9.470)	(0.176)
Married	2.907	0.448**
	(10.279)	(0.191)
Length of residence (in months)	−0.209	0.009
	(0.423)	(0.008)
BBNet	−31.061*	−0.275
	(17.911)	(0.332)
BriNet	−46.793***	−0.788***
	(14.991)	(0.278)
WithGerman	−35.566*	−1.146***
	(19.919)	(0.369)
BBNet*WithGerman	24.998	0.912*
	(26.772)	(0.496)
BriNet*WithGerman	14.577	0.970**
	(22.475)	(0.417)
Constant	105.131***	1.931***
	(24.035)	(0.446)
Observations	128	128
Adjusted R^2	0.125	0.113
F Statistic (df = 10; 117)	2.813***	2.616***

Standard errors are reported in parenthesis. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

in bonding networks is low. Interestingly, the length of residence in Germany is negatively and significantly correlated with *BonNet* (5% level). That is, Syrian refugees who have recently arrived in Germany primarily engage in bonding networks, while those networks decrease in their importance the longer refugees stay in Germany. This link underlines the fact that bonding networks can provide support for newly arrived refugees regardless of the individual level of distress. There are no other significant associations between sociodemographic variables and the formation of bonding networks.

The coefficients in model (2) indicate a major insight about the formation of bridging networks. In contrast to the development of bonding networks, the formation of bridging networks is not systematically linked to the length of residence in Germany. However, private housing in Germany is positively associated with the participation in bridging networks.[24] Private housing provides advantages for both the refugees as well as the (German) hosting population: by searching for and finding a private home to live in, refugees have taken an important step towards a more self-determined life, which is likely to increase self-esteem and well-being. Living in a private home also correlates with greater trust in members of the hosting society based on higher incidents of contact and bilateral exchange. Therefore, it seems plausible that private housing coincides with greater conditional trustworthiness. A possible policy implication of these findings would suggest that the hosting society might be well advised to facilitate private housing options, as refugee camps and reception centers coincide with distrust, and foster segregation.

A final important note here is that having a paid job in Germany and living in

[24]We cannot offer causal interference on this claim: it could be the case that refugees found a home because they are members of bridging social networks. Alternatively, it could be the case that because refugees interact with Germans in the neighborhood, they feel compelled to engage in bridging networks. Nonetheless, we consider this result as a useful insight, since it teaches us (at least) how refugees struggle with trusting the hosting society.

private housing positively and significantly correlate with one another ($\rho = 0.217$, $p - value = 0.0096$).

Table 2.3: Probit Regression Analysis on BonNet and BriNet

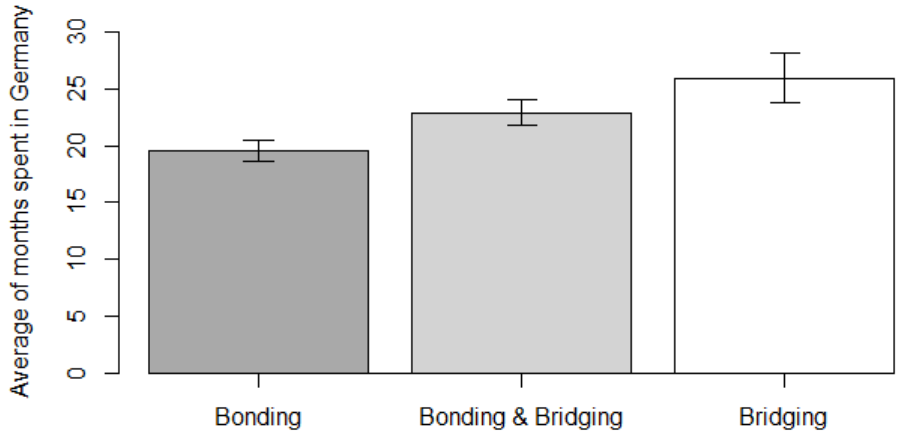
	Dependent variable:	
	Social Networks	
	Probit	
	BonNet	BriNet
	(1)	(2)
Age groups	0.01	−0.05
	(0.02)	(0.04)
Education	−0.01	−0.02
	(0.03)	(0.04)
Male	−0.07	0.09
	(0.07)	(0.11)
Married	0.05	0.02
	(0.08)	(0.11)
Length of residence (in months)	−0.01**	0.01
	(0.00)	(0.01)
Distress level	−0.01	−0.05
	(0.04)	(0.06)
Private housing	−0.04	0.20**
	(0.06)	(0.10)
Observations	128	128
Log Likelihood	−46.06	−74.65
Akaike Inf. Crit.	108.11	165.29

Coefficients refer to average marginal effects. Standard errors are reported in parenthesis. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

The link between the length of residence in Germany and social networks is nicely depicted in Figure 2.6. It shows the average length of residence in Germany for Syrian participants grouped by bonding, bonding and bridging, and bridging. The average length of residence of those engaged in bonding networks is significantly lower than that of Syrian participants who are engaged in bridging networks - 19

months versus 26 months, respectively.[25] Logically, the development of cross-cutting social networks takes more time than those networks developed within a community.

Figure 2.6: Social Networks According to Length of Residence



This is in line with existing research that shows a positive correlation between the length of residence and between-group social networking (Kasarda and Janowitz, 1974; Schulz et al., 2006). This result may indicate that the support required by newly arrived refugees differs from the support required after a lengthier stay. However, a longitudinal study would be needed to analyze this conjecture. It could also be that the length of stay in Germany has some important con-founders, as it could be a proxy for living conditions: 32% of our Syrian participants were living in a refugee camp in Germany at the time the study was conducted. This variable negatively correlates with the length of residence in Germany (ρ = -.4182, $p - value < 0.001$).

Upon arrival in Germany, refugees must stay in refugee camps, also called first

[25] Wilcoxon rank sum tests: *BonNet* and *BriNet* ($p - value = 0.0164$); *BonNet* and *BBNet* ($p - value = 0.0153$); *BBNet* and *BriNet* ($p - value = 0.6706$). We also run a correlation test between bridging capital and the length of residence ($\rho = 0.23$; $p - value = 0.01$).

reception centers. Once they have been granted asylum they can move out of the reception center, either into refugee housing or private housing. Possibly, living in a refugee camp acts as a sort of natural barrier for social networking with members of the host society.[26] As mentioned by Burt (1997) and Putnam et al. (2000), this correlation has vital implications for refugees, because refugees might benefit from bridging networks with members of the host society in order to help them adapt to the new sociocultural environment more quickly.

2.4 Conclusion

In accordance with John Donne's famous verse "No man is an island, entirely of itself" (1624), we have determined that refugees' engagement in social networks is linked to their socioeconomic behavior. To demonstrate this, we ran economic experiments with Syrian refugees in Germany, analyzing whether the way in which Syrian refugees participate in the host society is linked to trust and trustworthiness in different treatment scenarios. Among Syrians, use of bonding networks positively correlates with more trust and unconditional trustworthiness towards one another than does use of bridging networks. Moreover, regarding the treatment scenarios, Syrian participants who engage in bonding networks show higher levels of trust and conditional trustworthiness towards potential members of the bonding network than they show towards outsiders. This treatment effect is mostly marginal for those using only bridging networks or the combination of both types. Regarding unconditional trustworthiness, Syrians who engage in bonding networks also favor fellow Syrians over German participants, yet there is no treatment effect for those involved in only bridging networks or the combination of both. This suggests that

[26] There is a negative and significant correlation of living in a refugee camp and bridging capital ($\rho = 0.29$; p-value ¡ 0.001). Detailed information regarding the standard procedure for asylum seekers in Germany are summarized in Appendix 2.C.

a link exists between co-ethnic solidarity and bonding networks.

Immigrant participation in bonding social networks has been shown to have some negative effects for the new host society at times, because the bonding capital created often excludes 'outsiders' from the expected returns. However, we believe that our results show that bonding capital can also be crucial for overcoming challenging situations, especially for refugees upon arrival in the host country. For example, moving to a new country often entails a disruption of past social connections, and establishing a new set of connections can be extremely helpful, even crucial, to immigrants and refugees facing the difficult task of starting a new life in a new and unfamiliar environment.

A refugee's length of residence and place of residence also play a relevant role in the evolution of their use of social networks. Newly arrived Syrian refugees tend to engage in social activities that strengthen co-ethnic ties, while for those with a lengthier stay in Germany, and those who reside in private housing in Germany, connections with the host society prevail. Both factors coincide with the formation of bridging ties and the mitigation of discrimination between Syrian and German interaction partners in the experiments. Conversely, residence in a refugee camp seems to act as a barrier to the creation of social networks between hosts and refugees, implying some manifestation of segregation. It is important that the hosting society set institutional conditions in ways that facilitate integration rather than segregation. Acquiring private housing and finding a new job both appear to be significant assets for immigrants along the integrating path.

Both bonding and bridging social networking are important tools that can be of great help to immigrants and refugees in their new host countries. Initially they can help establish safety nets, while later they can aid the immigrants in adapting to their new sociocultural environment and progressing as active members of their new

society. The indications that refugee involvement in voluntary social networks is associated with less segregation and discrimination (i.e., a decrease of the negative discrimination refugees display towards Germans regarding trust and conditional trustworthiness and the absence of a significant difference in unconditional trustworthiness, as shown in our regression analysis) is auspicious, as it is potentially much easier to encourage engagement in social networks than to change behavior related to social norms through other means.

2.A Additional Statistical Analysis

2.A.I Descriptive Tables

Table 2.A.I: Sociodemographic Variables of the Syrian Sample

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Age groups	152	3.007	1.349	1	2	4	7
Education	150	3.560	1.039	1.000	3.000	4.000	6.000
Male	150	0.753	0.433	0.000	1.000	1.000	1.000
Married	151	0.391	0.490	0.000	0.000	1.000	1.000
Length of residence (months)	138	24.030	9.730	10.100	17.157	30.793	67.630
Distress level	152	1.925	0.775	0.000	1.562	2.438	3.875
Residence in camp	152	0.316	0.466	0	0	1	1
Importance of religion	152	2.849	1.581	0	2	4	4

Age groups is a categorical variable describing groups of age from 1 to 7 with the lowest age group being from 16-26 years and the highest one above 66 years. *Education* is a categorical variable that runs on a scale from 1, 'learned to read and write without being schooled', to 6, 'post-graduate degree'. *Male* is a dummy variable describing the gender of the participants. *Married* is a dummy variable describing the marital status of participants. *Length of residence* is a continuous variable that described the months spent in Germany in months (with the lowest being 10 months, the highest being 67 months, and the mean, 24 months). *Distress Level* shows the average level of PTSD symptoms. Answers were coded on a scale from 1 ('not at all') to 4 ('extremely'). If the average score is higher than 2.5, subjects are considered symptomatic for PTSD. *Residence in camp* is a dummy variable denoting those participants who are residing in a refugee camp / reception center in Germany. Finally, *Importance of religion* is a continuous variable running from 1 'not at all important' to 4 'very important' and denotes the importance of religion in life.

Table 2.A.II: Sociodemographic Variables of the German Sample

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Age groups	88	4.341	1.728	2	3	6	7
Education	88	4.352	0.959	2	3	5	6
Male	88	0.557	0.500	0	0	1	1
Married	88	0.318	0.468	0	0	1	1
Distress level	88	1.361	0.398	0.938	1.062	1.453	3.125
Importance of religion	72	1.861	1.066	1.000	1.000	2.250	4.000

Age groups is a categorical variable describing groups of age from 1 to 7 with the lowest age group being from 16-26 years and the highest one above 66 years. *Education* is a categorical variable that runs on a scale from 1, 'learned to read and write without being schooled', to 6, 'post-graduate degree'. *Male* is a dummy variable describing the gender of the participants. *Married* is a dummy variable describing the marital status of participants. *Distress Level* shows the average level of PTSD symptoms. Answers were coded on a scale from 1 ('not at all') to 4 ('extremely'). If the average score is higher than 2.5, subjects are considered symptomatic for PTSD. Finally, *Importance of religion* is a continuous variable running from 1 'not at all important' to 4 'very important' and denotes the importance of religion in life.

2.B Robustness Checks

2.B.I Trust

Table 2.B.I shows coefficients for an OLS regression model on trust controlling for the location of the experiments in Germany. Results show that participants in Stuttgart tend to trust more than those in Leipzig.

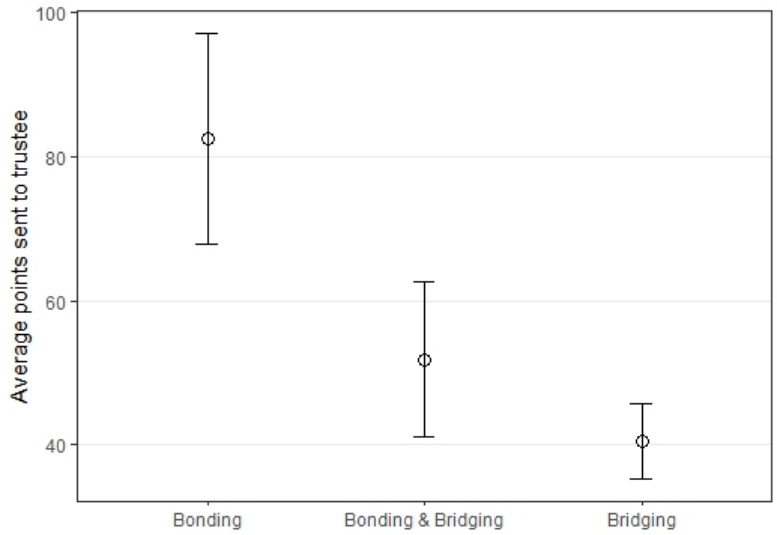
Table 2.B.I: OLS on Trust with Controls for the City the Experiments Were Run in

	Dependent variable:
	Trust
Age groups	0.014
	(0.030)
Education	−0.001
	(0.032)
Male	0.118
	(0.077)
Married	−0.015
	(0.081)
Length of residence (months)	0.009*
	(0.005)
BBNet	−0.305**
	(0.140)
BriNet	−0.402***
	(0.119)
WithGerman	−0.409***
	(0.156)
Hamburg	0.171
	(0.121)
Stuttgart	0.213**
	(0.100)
BBNet*WithGerman	0.361*
	(0.209)
BriNet*WithGerman	0.335*
	(0.176)
Constant	0.220
	(0.242)
Observations	128
Adjusted R^2	0.108
F Statistic	2.287** (df = 12; 115)

Standard errors are reported in parenthesis. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

Figure 2.B.I shows the level of points sent as a trustor dependent on the social network without taking the treatment scenario into account. Participants in bonding networks tend to send more points on average compared to those engaged solely in bridging networks.

Figure 2.B.I: Trust Depending on Social Networks



2.B.II Trustworthiness

Table 2.B.II shows coefficients for an OLS regression model on trustworthiness controlling for the location of the experiments in Germany. Results show that participants in Stuttgart tend to be more trustworthy more than those in Leipzig.

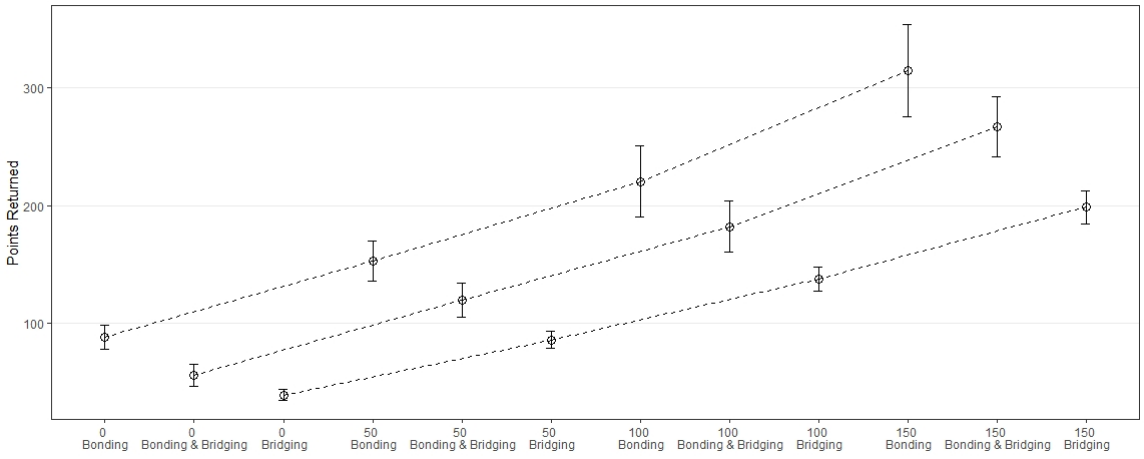
Table 2.B.II: OLS on Trustworthiness with Controls for the City the Experiments Were Run in

	Dependent variable:	
	Intercept	Slope
	(1)	(2)
Age groups	0.130	−0.058
	(3.759)	(0.070)
Education	−1.060	−0.046
	(4.066)	(0.076)
Male	4.529	−0.010
	(9.639)	(0.180)
Married	0.829	0.426**
	(10.112)	(0.188)
Length of residence (months)	0.231	0.024**
	(0.607)	(0.011)
BBNet	−32.286*	−0.267
	(17.602)	(0.328)
BriNet	−40.175***	−0.677**
	(14.904)	(0.278)
WithGerman	−33.726*	−1.135***
	(19.542)	(0.364)
Hamburg	9.199	0.439
	(15.224)	(0.284)
Stuttgart	27.781**	0.566**
	(12.581)	(0.234)
BBNet*WithGerman	24.353	0.895*
	(26.228)	(0.488)
BriNet*WithGerman	11.650	0.930**
	(22.045)	(0.411)
Constant	68.463**	1.101*
	(30.367)	(0.566)
Observations	128	128
Adjusted R^2	0.160	0.142
F Statistic (df = 12; 115)	3.021***	2.745***

Standard errors are reported in parenthesis. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

Figure 2.B.II shows that the total amount of points returned increases with the amount of points received following a linear trend. Those participants engaged in bonding social networks return more points in general compared to those engaged in bridging networks (without taking the treatment scenario into account).

Figure 2.B.II: Trustworthiness Depending on Social Networks



2.C The German Asylum Procedure

Here we briefly describe the procedures that refugees need to go through after arriving in Germany. Particular emphasis is on the steps that might cause more trauma – like insecure or overcrowded reception facilities, or lengthy procedures during which refugees do not know with any degree of certainty whether their asylum application will be accepted or not.

Upon arrival in Germany, refugees are registered with a state organization (such as the border control, the police or reception centers). After having been registered, asylum seekers are distributed to a particular state according to a general formula. In that state, they are provided shelter, food, and basic medical services in a reception facility. Due to the very high number of refugees coming to Germany, these facilities can be made up of containers or can be located in schools, empty home improvement stores and the like. Both the size of the facility as well as the degree of privacy the refugees enjoy there can potentially affect the degree of traumatization. The asylum application itself is submitted sometime during the stay in the reception facility. Before a personal hearing of the refugee takes place, the Federal Office for Migration and Refugees (which is in charge of the whole process) checks whether the so-called Dublin procedure has been complied with. The federal office decides. Even if the asylum application is turned down, many refugees might still be entitled to remain in Germany, e.g. because their home country is evaluated as "unsafe". Those whose application has been refused have the possibility to sue the Federal Office. If the court upholds the administrative decision, the refugees are required to leave the country (BAMF, 2016b).

Due to the very high number of refugees who have arrived, particularly since 2015, this procedure took many months. Although the number of incoming refugees

peaked in the second half of 2015, the peak in asylum applications was only reached in August 2016 – with more than 80,000 applications – indicating that many people lived in reception centers for more than half a year before they could even submit their asylum application. In November 2016, almost half a million asylum seekers were waiting for the decision regarding their application, indicating that many more months may pass before a decision is made (all numbers from (BAMF, 2016a)).

Until their status has been decided upon, refugees are not allowed to work. They are offered language as well as so-called integration courses intended to familiarize them with everyday life in Germany. However, due to the limited number of courses offered, it can also take months before refugees can participate in any such course. In sum, the whole procedure can easily take more than a year, implying a very high degree of uncertainty for each refugee.

2.D Questionnaire for PTSD Symptoms

The questionnaire consists of questions related to PTSD symptoms that people sometimes have after experiencing hurtful or terrifying events, which we denote here as 'distress level'. In the distress part of the questionnaire, subjects could rate potential feelings of unease (e.g., 'Unable to feel emotions') on a four point scale ranging from 'not at all' to 'a little' to 'quite a bit' to 'extremely'.

The following are symptoms that people sometimes have after experiencing hurtful or terrifying events in their lives. Please read each one carefully and decide how much the symptoms bothered you in the past week.

Please choose the appropriate response for each item:

	Not at all	A little	Quite a bit	Extremely
Recurrent thoughts of memories of the most hurtful or terrifying events.				
Feeling as though the event is happening again.				
Recurrent nightmares.				
Feeling detached or withdrawn from people.				
Unable to feel emotions.				
Feeling jumpy, easily startled.				
Difficulty concentrating.				
Trouble sleeping.				
Feeling on guard.				
Feeling irritable or having outbursts of anger.				
Avoiding activities that remind you of the hurtful event.				
Inability to remember parts of the most hurtful events.				
Less interest in daily activities.				
Feeling as if you don't have a future.				
Avoiding thoughts or feelings associated with the hurtful events.				
Sudden emotional or physical reaction when reminded of the most hurtful events.				

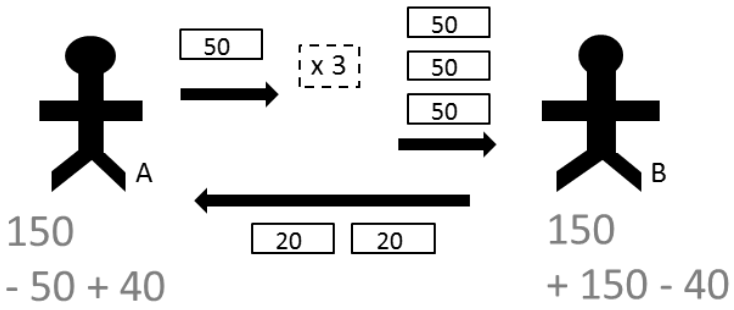
2.E Game Instructions

Now consider yourself to be in the following situation in which you may collaborate with a (treatment).[27] Hence there are two people interacting.

Here are the rules:

- Each person (A and B) receives 150 points to start with.
- Person A can give away a share of his points to person B (between 0 and 150 points).
- We will triple each point sent from person A and then give it to person B (hence if A gives 1 point to B, we will triple it and B receives 3 points).
- Person B then can decide to return any part or all the points he receives.

Have a look at this example:



[27] For the sample used in this paper: Syrians were told that they are playing with another Syrian participant or a German participant, and Germans were told that they are playing with another German participant or a Syrian participant.

First:

Person A gives person B 50 points: $\Longrightarrow$ B receives 150 additional points (50*3)

$\Longrightarrow$ Now A has 100 points and B has 300 points

Second:

B sends 40 points back to person A: $\Longrightarrow$ A receives 40 additional points

$\Longrightarrow$ Now A has 140 points and B has 260 points

In the following cases person A can give away 4 different amounts of points to person B: (0 points, 50 points, 100 points or 150 points). Person B can then return any amount of points (0 to all) to person A.

Please look at the following page. On the basis of this example, please choose how you are going to behave in this situation. You are once taking the position of person A and another time person B.

After all participants have completed the questionnaire, we will randomly select you and (treatment) either as person A or person B and pay you accordingly.

How will you behave if you are person A?

I send:

Please choose only one of the following answers:

o 0 points (I then keep 150 points, person B has 150 points)

o 50 points (I then keep 100 points, person B has 300 points)

o 100 points (I then keep 50 points, person B has 450 points)

o 150 points (I then keep 0 points, person B has 600 points)

How will you behave if you are person B?

If I have 150 points (person A has transferred 0 points):

o I will send person A _____ points back

If I have 300 points (person A has transferred 50 points):

o I will send person A _____ points back

If I have 450 points (person A has transferred 100 points):

o I will send person A _____ points back

If I have 600 points (person A has transferred 150 points):

o I will send person A _____ points back

Chapter 3. A Sense of No Future in an Uncertain Present: Altruism and Risk-Seeking among Syrian Refugees in Jordan[1]

Abstract

An unprecedented number of refugees from Syria has sought refuge in both the Middle East and Europe since the beginning of the civil war in Syria in 2011. We analyze the level of altruism and risk-seeking among Syrian civil war victims in Jordan. Our participants are university students who interact both with Jordanians as well as other Syrians. Our participants are university students. We find systematic variations in the revealed levels of altruism and their willingness to accept risk among Syrian refugees: feeling as if having no future coincides with both more egoistic and more risk-seeking behavior. Refugees' behavioral responses and their sense of no future correlate with their current personal living experiences. Our findings suggest that both the sense of no future and the accompanying behavioral responses are primarily associated with their current living conditions rather than with experiences directly related to the civil war in Syria.

Keywords: experiments, altruism, risk-seeking, psychological distress, migration, civil war.
JEL Codes: C92, D64, D81, D91, F22, H56, Z13.

[1]This chapter is co-authored by Nora El-Bialy, Andreas Nicklisch, Lamis Saleh, and Stefan Voigt.

3.1 Introduction

More than 6 million Syrians have fled their country since the beginning of the civil war in Syria in 2011 according to the United Nations High Commissioner for Refugees (UNHCR). At the end of 2019, more than 3.5 million had sought refuge in Turkey, more than 900,000 in Lebanon, around 660,000 in Jordan, and some 572,000 in Germany.[2] Jordan has the second highest number of refugees *per capita* in the world, largely due to the large number of Syrian migrants.[3]

One direct and straightforward consequence of the flight is economic poverty. Alarmingly, 85% of Syrian refugees in Jordan live below the poverty line (UNHCR, 2018). Refugees have enormous difficulties finding employment, they lack access to education or vocational training as well as health services in their new host country. All of these challenges contribute to the uncertain future that forcibly displaced people face. Therefore, it is not surprising that forced displacement translates into a loss beyond materialistic possessions (BMZ, 2017) and that people, especially the young, feel as if they do not have a future.

Earlier studies document that people who experience civil war violence behave significantly differently than those who have not experienced such violence (Voors et al., 2012; Bauer et al., 2016). We extend this line of research by asking if - and to what degree - a sense of a foreshortened future coincides with the experience of flight and violence, and is associated with a systematic change in preferences for both risk and altruism. To do so, we conduct experiments with Syrian refugees who are now enrolled in Jordanian universities. As a control, we conduct the same experiments

[2] All numbers according to UNHCR. https://www.unhcr.org/refugee-statistics/download/?url=wH4V [last accessed on 21.01.2021].

[3] At the end of 2019, the number was 75 refugees per 1,000 inhabitants (according to https://www.unhcr.org/jo/12449-unhcr-continues-to-support-refugees-in-jordan-throughout-2019.html [last accessed on 29.01.2021]).

with Jordanian students at the same universities. The aim of the experiments is to analyze the importance of contextual aspects for individuals' behavior in a situation of high uncertainty about the future due to the on-going war in Syria. We are interested in isolating social and psychological factors that might correlate with these preferences and function as indicators for particular behavior. In a post-experiment questionnaire, we elicit such factors by administering an abbreviated version of the Harvard Trauma Questionnaire containing items such as 'feeling as if you don't have a future' and refer to the indicator of the relevant questions as a person's distress level. Preferences concerning risk and altruism, and factors associated with them, are of major importance as they are crucial for the economic development of societies by determining how we consume, save, and invest (Voors et al., 2012).

This is one of the first experimental studies administered among Syrian refugees in Jordan. Comparing Syrian with Jordanian participants, the former are less altruistic, whereas there are virtually no differences in risk-taking between the two groups. However, the sense of a foreshortened future has an impact on both behavioral dimensions: the more prominent this feeling becomes, the more egoistic and more risk-seeking participants are. Our results show that refugees' living experiences in the host country are correlated with more egoism and risk-seeking and an intense sense of a foreshortened future. Leaving nuclear family members behind (family separation) and staying in a refugee camp in Jordan are those living conditions that correlate positively with the feeling of having no future. To be clear about this, our paper cannot offer causal evidence, as there is no control group that has not been treated in this conflict. That is to say, it could be that the situation in refugee camps causes the feeling of no future, but it could also be that having a sense of no future may lead subjects to live in camps. Yet, it is important to acknowledge that both factors coincide when we evaluate refugees hosted in camps.

The rest of the paper is structured as follows: In the next section, we develop our main hypotheses based on traditional psychological and sociological literature, as well as a number of recent experimental studies inquiring into the effects of civil war on individual behavior. Section 3 describes the ways in which participants were recruited for our experiment and contains descriptive information on the characteristics of our sample. The experiments themselves and the results are described in Section 4. Section 5 reports our findings while Section 6 concludes.

3.2 War, Violence, and Behavior

Our study builds on the small but growing literature about individuals who have experienced extreme violence and the consequences of that experience on behavioral traits such as altruism and risk aversion (as, e.g., summarized by Blattman and Miguel (2010), as well as in Bauer et al. (2016)). There is some evidence that major events, such as civil wars, have an important impact on pro-social behavior and risk preferences, among others.

Findings regarding the effect of violence on risk behavior are split. Voors et al. (2012) conducted a set of lab-in-the-field experiments in post-war Burundi. They found that individuals who were exposed to more violence during the civil war were more risk-seeking years later. On the other hand, Kim and Lee (2012) found that children who were exposed to the Korean war were more risk-averse even decades after the end of the war. Moreover, those who were living in areas more severely affected by the war displayed particularly high levels of risk aversion. When studying the impact of having been exposed to violence in Afghanistan, Callen et al. (2014) found similar effects regarding risk preferences.

Voors et al. (2012) also analyzed the social behavior of war survivors in Burundi towards their neighbors: the more violence they had faced, the more altruistic they

were towards others. These scholars were not the only ones interested in the effects of violence on the norms of fairness in the society following a civil war. In their study on the effects of ethnic violence in post-war Bosnia, Whitt and Wilson (2007) found that although ethnicity does have an impact on decision-making as represented by a bias in favor of one's in-group, the degree to which members of an outgroup were penalized was rather limited. The experiment was conducted with Bosnjaks, Croats, and Serbs, and members of each group could belong to an outgroup, depending on the concrete setting. In sum, notions of fairness did play an important role even across different ethnicities in post-war Bosnia.

When it comes to inequality aversion, the presence of in-group favoritism seems likely in the aftermath of a civil war. In the experiments that Bauer et al. (2014) conducted in Sierra Leone, they manipulated the identity of the interaction partner and found that victims of conflict-related violence were less selfish and more inequality averse regarding their in-group same village partner. The effect disappeared once these participants were faced with a partner from another village. Still in Sierra Leone, Cecchi et al. (2016) found the same effect as football players who had been exposed to more intense war-related violence were more altruistic towards their in-group team players compared their out-group opponents.

It has also been suggested that the experience of war violence causes negative feelings about oneself and one's future (Joseph et al., 1997; Ehlers and Clark, 2000). When individuals fail to recognize such traumatic events as temporary experiences and rather think that these events have long-lasting consequences for their future, it is likely that individuals develop a sense of external or internal current threat. The external threat manifests itself in the sense that the world is a dangerous place. The internal threat is the view of being incapable of living a productive life. Moreover, psychological studies indicate that the way we think about the future crucially affects

our decisions in the present (Nan and Qin, 2019; Baumeister et al., 2016). This derives from the idea that we can shape our future, and we act in specific ways to provoke desirable outcomes. Being optimistic about the future can provide several benefits in coping with negative experiences and stress, among others (Scheier and Carver, 1993). However, when the expectations that people have about their future are negative, it is likely that behavior is affected in a negative way, too. Sociological studies point out that people who perceive their future as highly uncertain are – among other things – less active in connecting with other people (Cantó-Milà and Seebach, 2015). We expect to find these links in our sample of Syrian refugees in Jordan. All of these findings are of particular importance for refugees, since they have fled from a violent war and are confronted with various unknowns making them likely to perceive the future as highly uncertain.

Altruism has been defined as "costly acts that confer economic benefits on other individuals" (Fehr and Fischbacher, 2003). Altruism among non-kin separates humans from all other animals (ibid.). Yet, altruism is fragile. The context within which people decide to act altruistically crucially influences the strength of prosociality. All of the refugees in our sample have experienced extreme challenges caused by the civil war in their home country. When sheer survival is at stake, it is conceivable that altruistic behavior is pushed back. Yet, the fact that social integration can facilitate altruism has been highlighted by both theoretical (Eshel et al., 1998; Nowak, 2006) and empirical studies (Branas-Garza et al., 2010). As a consequence of flight, many well-established social networks between Syrians were truncated making pro-social behavior less likely. At the same time, their negative feelings and low expectations regarding their future are not only likely to affect integration into their host society, but also to reduce the creation of new social networks not only between the refugees themselves, but also between hosts and refugees. This derives from the fact that a negative view of one's future can detrimentally affect the investment of time and

resources in developing new contacts, and the offer of economic benefits to other individuals. This downward spiral is likely to deteriorate pro-social behavior in the host country. Knowing the level of altruism among refugees will allow us to shed some light on this matter.

Risk preferences are another important source of individual heterogeneity. People around the world differ considerably about their acceptance of risk depending on economic conditions and cultural factors (Rieger et al., 2015). Some researchers have argued that risk preferences are an important factor for economic development (Binswanger, 1980; Akay et al., 2012; Viceisza, 2016). Risk and flight are interwoven in various and contradictory ways. On the one hand, refugees might accept higher levels of risk than their Jordanian counterparts, since they have self-selected to take on the considerable risk to flee their country. On the other hand, staying in Syria might well have been even more risky than fleeing the country. Flight might, hence, indicate risk aversion. The fact that refugees find themselves in an unfamiliar context might lead to more cautious and less risk-seeking behavior. All of these conflicting factors make it difficult to offer a clear prediction of refugees' risk behavior *a priori*.

In our study, we pay special attention to the specific factors that lead Syrian refugees to experience low expectations of their future. We ask whether their level of altruism depends on whom they interact with. We have Syrian refugees interact with Jordanians or fellow Syrian refugees in Jordan, while Jordanians interact with Syrian refugees or fellow Jordanians. Following earlier results from post-war countries (Bauer et al., 2016), we expect refugees to display in-group favouritism among Syrian refugees, as this group shares the direct experience of civil war violence and flight, and they all face ongoing difficulties in the host country.

Furthermore, we provide insights regarding the underlying relation between war experience, flight, and the systematic preference patterns for altruism and risk.

Until now and regardless of the discipline, little is known about how heightened distress levels that are due to experiencing civil war, flight and the treatment in the host country affect individual behavior. To get to know more about it, we apply an abbreviated version of the Harvard Trauma Questionnaire (HTQ). The abbreviated HTQ serves to operationalize the degree to which individuals suffer from Post-Traumatic Stress Disorder (PTSD) symptoms,[4] such as 'feeling as if having no future'. Many refugees who fled from war zones have been diagnosed with PTSD and depression, partially driven by their war experience, but also by the life conditions in exile, such as uncertain family reunion and unemployment (Lie, 2002). Thus, we expect to find a higher proportion of Syrian refugees showing high distress levels compared to Jordanians. More specifically, we expect that difficulties the Syrians face in their host country are associated with a perception of a foreshortened future. Precarious living conditions may correlate with little weight on cooperation and high weight on self-interest. Further, we expect that a sense of a foreshortened future correlates with accepting risk: if there is no future, individuals may live day by day and show more risk-seeking behavior for 'quick' gains in the short-run as they have nothing to lose. Therefore, we hypothesize that those with a lack of certainty about one's own future act less altruistically and are more prone to taking risks.

3.3 Participants

3.3.1 Recruitment and Characteristics

We ran our experiments between March 2017 and December 2017 at different universities in Amman and Irbid, two of the three Jordanian governorates hosting the most Syrian refugees. Several universities in Jordan have established programs that

[4]The Harvard Program in Refugee Trauma has analyzed the effects of experiencing violence on people's mental health for decades (Mollica et al., 1992).

cater to Syrian refugees. To be able to compare the choices of Syrian students, we also ran experiments with Jordanian students at the same universities.

All experiments were run as lab-in-the-field or online.[5] To facilitate a good understanding of the games by the participants, we decided to aim at a homogeneous participant pool of both Syrian and Jordanian students. Hence, we conducted the experiments with university under- and postgraduates (N=155). The average payoff was 12 Jordanian Dinars (equivalent to a little more than €15 or $16.40 at the time of the experiments). Different techniques were used to invite potential participants to our experiments. First, by posting an invitation on a social network group that we first established in 2016, and extended to Syrian refugees in Jordan. Second, by distributing flyers at different university campuses in Jordan. In a series of pre-trials, we tested a number of potentially distracting issues in both the experiments and the questionnaire. For instance, Islam prohibits Muslims from any kind of gambling. This is why we invited refugees to a number of 'tasks' (rather than games). Sensitivities can also be a consequence of the traumatic events the refugees experienced in their home country, during their flight, or even in the host country. The post-experiment questionnaire was designed to begin with the least sensitive questions and get more sensitive along the way.[6] The questionnaire consists of four parts, namely a number of questions regarding the socioeconomic background of the refugees, their flight (duration, route, etc.), their current situation (kind of reception facility, etc.) and questions related to PTSD symptoms that people sometimes

[5] In one location it proved logistically impossible to invite Syrian students to a lab-in-the-field session and hence, Syrian participants were contacted via e-mail to participate in an online study, a total of 43 participated successfully in the study. To counterbalance, Jordanian students were contacted via email too, 14 participated in the study online. Additionally, a total of five lab-in-the-field sessions were run for both Syrian and Jordanian students. Results of Wilcoxon rank sum tests show no significant difference between sessions throughout both games (see Table 3.A.IV in the Appendix).

[6] 24 participants, around 16% of the whole sample, did not answer between 1 - 4 questions of the post-traumatic-stress-disorder questionnaire positioned at the end of the post-experimental survey. The rest answered all questions of the PTSD questionnaire. The average is calculated based on the total number of questions answered.

have after experiencing hurtful or terrifying events, which we denote here as 'distress level'. In the distress part of the questionnaire, subjects could rate potential feelings of unease (e.g., 'Unable to feel emotions') on a four point scare ranging from 'not at all' to 'a little' to 'quite a bit' to 'extremely'.

63 Syrian refugees and 92 Jordanian participated in this study. Table 3.1 summarizes some sociodemographic information of the participants. Around 60% of our participants are female. Almost all participants belong to the Sunni branch of Islam (98.8% of Syrian refugees that stated to be Muslims are Sunnis, while 98% of Muslim Jordanians are Sunnis). About 36% (21%) of the Syrians (Jordanians) come from the lowest two income classes (1 and 2 on a scale from 1 = 'poor', to 5 = 'rich').

Table 3.1: Descriptive Statistics of Participants

Variables	N	Mean	St. Dev.	Min	Max	N	Mean	St. Dev.	Min	Max
	Syrian Participants					Jordanian Participants				
Age groups	63	2.079	0.373	1	4	92	2.109	0.373	2	4
Female	63	0.603	0.493	0	1	92	0.596	0.493	0	1
Children	63	0.000	0.000	0	0	92	0.160	0.738	0	5
Low SES	62	0.355	0.482	0	1	91	0.209	0.461	0	1

'Age groups' is a categorical variable describing groups of age from 1 to 6 with the lowest age group being younger than 16, the second group from 16-26 years, and so on. 'Female' is a dummy variable describing the gender of the participants. 'Children' is a continuous variable which denotes the number of children that participants have. 'Low SES' stands for low socioeconomic status which is a dummy variable describing participants belonging to the lowest income levels, i.e. 1 and 2 out of a scale up to 5. For the Syrian participants it measures their household situation in the last year before the war in Syria. For the Jordanian participants it measures their current household situation.

3.3.2 Distress Level and Future Expectations

Immigrants and refugees leave their home countries in pursuit of a better future. In the case of Syrian refugees, fleeing from a civil war means that they must learn to cope with the possibly traumatic events they have faced not only prior to their flight but also upon arrival in the host country. 'Feeling as if no future' is a common

symptom for depression and the one symptom in our sample showing the highest discrepancy between Syrians and Jordanians.[7]

Table 3.2 shows results for distress level and the sense of a foreshortened future. Contrary to our expectations, on average Syrian refugees do not show higher levels of distress compared to Jordanians.[8] We also compare the distribution of the level of distress by having a look at the proportion of participants whose score is above 2.5, and who are, according to international standards, considered to suffer from severe distress levels. The results are alarming, with very high proportions of Syrians, but also of Jordanians, suffering from severe distress levels: 47% of our Syrian sample meet the cutoff of 2.5, while 32% of the Jordanians show severe distress levels.[9] The proportion of Syrian refugees with severe distress levels is comparable to those reported in previous studies on refugees' mental health that range between 20% and 47% (Alpak et al., 2015; Aoun et al., 2018; Chung et al., 2018). Particularly worrying is the fact that more than half of our Syrian sample feel as if they do not have a future. As expected, it is more prominent among Syrian refugees compared to the Jordanians, and the difference is statistically significant (see Table 3.A.III; 'Question 14').

[7]For the questionnaire on PTSD symptoms see Appendix 3.C. See Tables 3.A.I - 3.A.III in the Appendix for averages for all possible symptoms for PTSD and differences between samples.

[8]See Charara et al. (2017) for their study on the burden of mental disorders in the Eastern Mediterranean Region (EMR), in which they find that all EMR countries show a higher mental disorder burden compared to the global level.

[9]The proportion of Jordanians who are highly distressed appears in need of explanation. One possibility is that they suffer from long-term effects (remember that around one half of all Jordanians used to be refugees at some point in time), another possibility is 'victimization by proxy' caused by their proximity to the civil war in Syria and frequent interactions with Syrians. In psychology, this phenomenon is called 'compassion fatigue', and there is talk of 'secondary traumatic stress disorder' (Figley, 1995). Yet a third possibility is that the frequent use of corporal punishment in the region leads to relatively high distress levels there. This conjecture is confirmed by a parallel study analyzing behavior of Syrian refugees in Egypt. There, distress levels of the Egyptian sample were, on average, slightly higher than of the sample of Syrian refugees (Hassan et al., 2019).

Table 3.2: Distress Level and 'Feeling as if having no future'

Variables	N	Mean	St. Dev.	Min	Max	N	Mean	St. Dev.	Min	Max
	Syrian Participants					Jordanian Participants				
Distress level	53	2.406	0.672	1.000	3.688	92	2.109	0.373	2	4
Distress level > 2.5	53	0.472	0.504	0	1	92	0.596	0.493	0	1
No Future	61	2.984	1.118	1	4	92	1.924	0.986	1	4
No Future > 2	61	0.672	0.473	0	1	91	0.209	0.461	0	1

The variable 'Distress level' is categorical with levels that range from 1 = 'not at all' to 4 = 'extremely'. 'Distress level > 2.5' is a dummy variable that stands for participants whose score for distress level is above 2.5 and hence suffer from severe distress level. 'No Future' stands for the question regarding 'feeling as if having no future', which is also categorical and follows the same levels as 'Distress level'. Finally, 'No Future > 2' is a dummy variable for 'quite a bit' and 'extreme' levels of 'feeling as if having no future', i.e. 3 and 4.

3.4 The Experimental Design

The games analyzed here were part of a larger study that consisted of three other games.[10] The order of the games was kept constant. The game easiest to understand was played first (the dictator game for measuring altruism), and the order of the other games was based on an increasing degree of difficulty. To elicit risk attitudes, participants played lotteries as the second type of games. We chose this design to gradually familiarize participants to interactive games.

3.4.1 Altruism

We conduct a canonical dictator game to elicit the degree of altruism of our participants. In our game, each player has to make six choices between two payoff options. After all participants have made their choices, they are randomly and anonymously matched with another player, and assigned to the roles of the dictator or the recipient. Only one randomly determined dictator game of the player in the dictator role becomes payoff-relevant determining the pair's payoff after the experiment. We

[10]Experiments were approved by the institutional review board of the University of Hamburg. The other games measured (in this order) reciprocity, cooperation, trust, and honesty. The study was conducted with Limesurvey. The open-source statistical software R was used for the analysis.

varied systematically the nationality of the recipient between treatment conditions: 44 Jordanians played with Jordanian recipients (hereafter JwJ), 48 Jordanians with Syrian recipients (JwS), 27 Syrian refugees with Jordanian recipients (SwJ), while 36 Syrian refugees played with other Syrian refugees (SwS).

The complete sequence of dictator games is summarized in Table 3.3. The participant acting as the dictator can choose between Option X and Option Y. The first number given there is the number of points the dictator allocates to herself while the second number indicates the number of points the recipient would receive. In the first game, the dictator thus chooses between 0 points to herself and 250 points to the counterpart (Option X) and 60 points to herself and 240 points to her counterpart (Option Y). The first three dictator games are introduced for participants to get used to experimental games. In those games, Option Y always entails the higher number of points for the dictator but also the higher overall number of points (250 vs. 300 in the first game, e.g.). In the first three games, the dictator can further reduce the degree of inequality between herself and the recipient (which is 250 for Option X but only 180 for Option Y in game 1). Thus, there are hardly any payoff or fairness reasons to choose X; the vast majority of players did choose Y, so that we will not include those choices in those games in our analysis.

Table 3.3: Payoff Schemes of the Dictator Games

Game	**Option X_i**	**Option Y_i**
1	0/250	60/240
2	60/240	120/220
3	120/220	180/180
4	180/180	220/120
5	220/120	240/60
6	240/60	250/0

In dictator games 4 to 6, the options X and Y are varied such that one of the two is

more altruistic as it yields higher payoffs for the recipient than the other at a cost for the dictator (in game 4, Option X implies a payoff of 180 points for the recipient whereas he only receives 120 points if the dictator chooses Option Y). Option X also implies a lower inequality between the dictator's and the recipient's payoffs (namely 0 instead of 100). Finally, we use the less altruistic option from the first three games as the more altruistic one in the last three games (compare games 4 and 3, 5 and 2, 6 and 1). This implies a sequence of options with decreasing degrees of altruism allowing us to classify participants' altruism according to their choice pattern: the classification ranges from the most egoistic pattern Y_4, Y_5, Y_6 to Y_4, Y_5, X_6, to Y_4, X_5, X_6, and to the most altruistic pattern X_4, X_5, X_6 (assuming a well-behaved, increasing preference for altruism).

3.4.2 Risk

To tease out attitudes toward risk, we rely on simple lottery choices. Each participant is asked to make a decision between two options in six consecutive lotteries. The payoffs of the six lotteries are summarized in Table 3.4. Whereas Option X always yields a certain payoff (250 in the first lottery for example), Option Y entails a risky choice. With a 30 percent probability, Option Y is connected with a payoff of 400 points. The corresponding 70 percent probability does, however, only lead to a payoff of 200 points (for the first three games). The expected payoff of choosing Option Y is, therefore, 260 points ($0.3 \cdot 400 + 0.7 \cdot 200 = 260$). The probabilities are known to the participants. Only one, randomly determined lottery of the player becomes payoff-relevant after the experiment.

Table 3.4: Payoff Schemes of the Lotteries

Game	**Option X_i**	**Option Y_i**	**Expected Payoff**
		with 30% / 70%	
1	250	400/200	260
2	260	400/200	260
3	270	400/200	260
4	150	0/200	140
5	140	0/200	140
6	130	0/200	140

We divide the six lotteries in two blocks of three each. While the expected payoff of the risky option is constant across two blocks (being 260 for the first three lotteries and 140 for the last three ones), the payoff of the certain option increases in the first block (from to 250 to 260, and 270), and decreases in the second block (from 150 to 140, and 130)). The middle certain option in each block equals the expected value of the risky option (260 for the first block and 140 for the second). This implies that being indifferent between the certain and the risky option in lotteries 2 and 5 indicates risk neutrality, whereas preferring the first (last) certain option in the first (second) block of lotteries indicates risk aversion.

Finally, in the first block, the less likely outcome of the risky options larger than the certain alternative (for the first game, 400 is larger than 250), while the less likely outcome of the risky option in the second block is smaller than the certain alternative (for the fourth game 0 is smaller than 150). This implies that the first three choices are framed as potential gains, whereas the last three choices as potential losses. With the first three lotteries, we measure risk attitudes in the gain domain, whereas with the second set of choices, we measure risk attitudes in the loss domain.[11] Opting in favor of the risky option in all three lotteries of the first (second) block reveals risk

[11]Separating a gain from a loss domain enables us to analyze whether participants react differently to potential gains and losses, e.g. preferring an option with a lower expected payoff but with a higher certainty (risk-averse in the gain domain) or preferring an option with a lower expected payoff but potentially avoiding losses (risk-seeking in the loss domain) or by under- or overweighing probabilities (Kahneman and Tversky, 1979).

loving in the gain (loss) domain, whereas opting in favor of the sure alternative in all three lotteries of the first (second) block reveals risk aversion in the gain (loss) domain.

3.5 Results

3.5.1 Altruism

On average, the Jordanian participants chose the more altruistic option 71% of the time or in 2.1 out of 3 choices. Syrians did so only 55% of the time or in 1.65 out of 3 choices. Those numbers suggest that Jordanian participants are more altruistic than Syrians, regardless of the concrete interaction partner.[12]

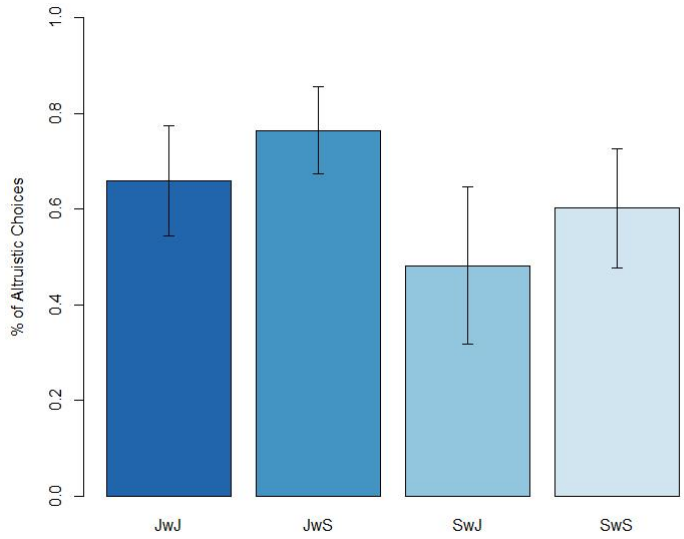
Figure 3.1 shows the relative number of altruistic choices per treatment with whiskers indicating 95% confidence intervals. Overall, Syrian refugees have a tendency for some ingroup favoritism, while Jordanians do not favor their own peers. Specifically, the average rate of the altruistic choice is 0.60 for Syrians in pairs with other Syrian refugees and it is 0.48 for Syrians in pairs with Jordanians, while Jordanians' average rate of altruistic choices is higher when paired with a Syrian refugee, 0.76, compared to Jordanians playing with another Jordanian, 0.66. One way to explain this observation is that Jordanians have empathy for the refugees and therefore act more altruistically. Notice, however, that neither this outcome nor the tendency of a Syrian in-group effect is statistically significant.[13]

Table 3.5 depicts the observed choices based on the altruism score introduced in Section 4.1. The highest level of altruism is realized when a participant chooses X in games 4, 5, and 6 (depicted as X_4, X_5, X_6) whereas the lowest altruism

[12] Wilcoxon rank sum test (two-sided): $p - value = 0.009$; Hence, the difference between Jordanians and Syrians is significant.

[13] For Jordanians (JwJ and JwS), the Wilcoxon rank sum test yields a p-value of 0.2126 and for Syrians (SwJ and SwS) it yields a p-value of 0.2028.

Figure 3.1: Proportion of Altruistic Choices



score results if the participant chooses Y in all these games (Y_4, Y_5, Y_6). When Jordanians interact with Syrians, more than half of them choose altruistically in all three games (56.2%). When Syrians interact with Syrians, this is actually also their most frequently chosen sequence. However, it is only chosen by 38.9% of the relevant participants. Interestingly, Jordanians are more altruistic when interacting with Syrians than when interacting with fellow Jordanians.[14] The opposite holds true with regard to the Syrian participants. The most egoistic choices are a mirror image of the altruistic ones: when Syrians interact with Jordanians, 37% of them choose the egoistic option in all three games. Compare this to Jordanians interacting with Syrians: in that combinations, only 8.3% choose the most egoistic combination of choices.[15]

[14]For Jordanians (JwJ and JwS), the Wilcoxon rank sum test yields a $p - value$ of 0.4039 and for Syrians (SwJ and SwS) it yields a $p - value$ of 0.7926.

[15]For Jordanians (JwJ and JwS), the Wilcoxon rank sum test yields a p-value of 0.1352 and for Syrians (SwJ and SwS) it yields a p-value of 0.084.

Table 3.5: Altruism Choice Patterns

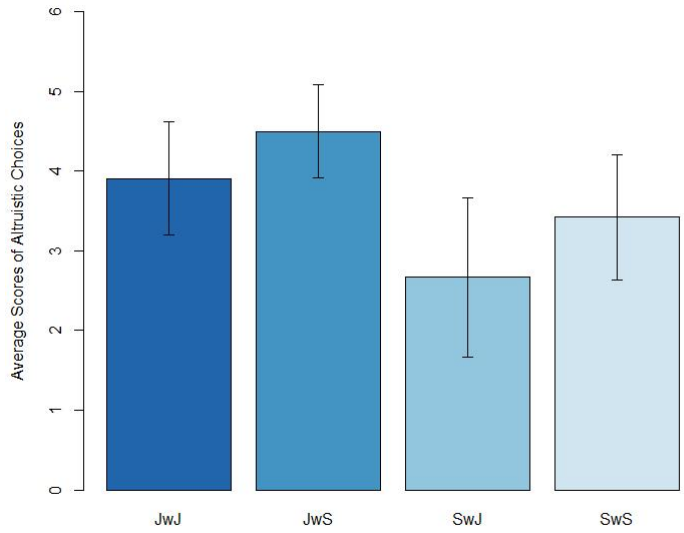
Patterns	JwJ	JwS	SwJ	SwS
X_4, X_5, X_6	20 (45.5%)	27 (56.2%)	9 (33.3%)	14 (38.9%)
Y_4, X_5, X_6	6 (13.6%)	5 (10.4%)	3 (11.1%)	4 (11.1%)
Y_4, Y_5, X_6	1 (2.3%)	3 (6.3%)	3 (11.1%)	5 (13.9%)
Y_4, Y_5, Y_6	9 (20.5%)	4 (8.3%)	10 (37%)	6 (16.6%)
None	8 (18.1%)	9 (18.8%)	2 (7.4%)	7 (19.4%)
Sum	44 (100%)	48 (100%)	27 (100%)	36 (100%)

To assess the overall degree of altruism displayed by the participants, we compute an individual altruism score for each participant. The choice of X in game 4 receives a score of 3 points, the choice of X in game 5, 2 points, and the choice of X in game 6, a score of 1 point. If the egoistic alternative Y is chosen in any of the three games, it is scored with 0 points. The overall score for altruism on the individual level is simply the sum of the points across the three games. As a result, the possible range of the score is between 0 (egoistic choices in all three games) and 6 (altruistic choices in all three games). Figure 3.2 shows the mean scores along 95% confidence intervals.

Results show that Jordanian participants playing with a Syrian refugee display the highest mean score (4.5), followed by Jordanians paired with a Jordanian (3.91). Syrians playing with a fellow Syrian have a mean score of 3.42, and Syrians paired with a Jordanian a mean score of 2.67. We observe that Jordanian participants show higher levels of altruism (67%) compared to Syrians participants (44.4%). A comparison of treatment conditions reveals that Syrians interacting with Syrians are significantly more egoistic than Jordanians interacting with Syrians.[16] However, Syrians interacting with Jordanians are not significantly less altruistic than Jordanians interacting with Jordanians.[17]

[16] Exact Wilcoxon tests, two-side, $p = 0.04$.
[17] Exact Wilcoxon tests, two-side, $p = 0.08$.

Figure 3.2: Score of Altruism



Next, we inquire into possible determinants of differences regarding altruistic choices. In Table 3.6, we explore in more detail the relationship between our altruism score and the degree of support to the statement 'feeling as if having no future' as elicited by the post-experiment questionnaire, along with additional sociodemographic variables. Specifically, we control for a number of sociodemographic traits and use linear regression models to test for the interplay between both the distress level (measured as the average score in the distress level part of the questionnaire on a scale ranging between one - not at all - and four - extremely) and the feeling of no future on the altruism score (again measured on a scale between one - not at all - and four - extremely).[18] While all other sociodemographic variables are rather similar between the two groups, the 'no future' variable highly diverges between the Syrian and the Jordanian sample: 67% of Syrians compared to 30% of Jordanians feel as if they don't have a future. We estimate three models: Model (1) tests the relation between

[18]We introduce two dummy variables, 'Syrian' is one if the dictator is a Syrian refugee (and zero otherwise), 'With Syrian Receiver' is one if the receiver is a refugee (and zero otherwise).

the current distress level and the altruism score, Model (2) considers the question of 'feeling of having no future' in isolation and regresses the altruism score on this question, and Model (3) contains interaction effects between the feeling of no future and the treatment condition.

Table 3.6: OLS Regression Analysis for the Altruism Score

	Dependent variable:		
	Altruism Score		
	OLS		
	(1)	(2)	(3)
Syrian	−1.379**	−1.172*	1.021
	(0.624)	(0.620)	(1.117)
With Syrian	0.804	0.598	0.602
	(0.535)	(0.503)	(0.870)
Syrian*With Syrian	−0.128	−0.147	0.113
	(0.849)	(0.801)	(0.879)
Female	−0.169	−0.291	−0.392
	(0.432)	(0.403)	(0.400)
Number of children	−0.999*	−0.308	−0.260
	(0.513)	(0.399)	(0.395)
Age	0.361	0.167	0.208
	(0.641)	(0.609)	(0.601)
Low socioeconomic status	−0.141	−0.338	−0.467
	(0.503)	(0.456)	(0.453)
Distress level	0.140		
	(0.359)		
No future		−0.022	0.410
		(0.188)	(0.318)
Syrian*No future			−0.918**
			(0.376)
With Syrian*No future			−0.034
			(0.373)
Constant	2.932*	3.888***	3.082**
	(1.581)	(1.389)	(1.458)
Observations	130	150	150
Adjusted R^2	0.071	0.039	0.066
F Statistic	2.234** (df = 8; 121)	1.762* (df = 8; 141)	2.049** (df = 10; 139)

Note: We report estimates for the coefficients along standard errors in parenthesis; the goodness of fit for the models is assessed by the adjusted R^2 as well as a joint F-test. The different number of observation is due to the fact that the *'Distress level'* variable contains 20 missing observations. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

The result of the first model suggests that Syrians are less altruistic *per se*. There is a significant negative coefficient for the dummy variable 'Syrian', whereas 'Distress

level' remains insignificant. However, Model (3) reveals that Syrians who have a strong feeling of 'no future' are significantly less altruistic. Once we include the interaction, being Syrian is no longer significant, implying that egoistic behavior is confined to those Syrian refugees who feel that they do not have a future, rather than Syrian refugees as a group being more egoistic *per se*.

3.5.2 Risk Preferences

The average number of risky choices in the gain domain among all Syrians is 1.43 (out of a total of three) and 0.860 for the loss domain. This is almost identical to 1.41 average risky choices in the gain domain among the Jordanians and 0.94 in the loss domain. Thus, there is no significant overall difference between Syrians and Jordanians when it comes to taking risks.[19]

Nonetheless, a round to round analysis of risky choices offers additional insights. Following Section 4.2, we classify individuals' behavior as always risk-seeking or always risk-averse in the gain and the loss domains (see Table 3.7). According to our classification, the majority of Syrians and almost the majority of Jordanians are risk-averse in the loss domain, but not in the gain domain. The difference between risk aversion and risk-seeking is higher in the loss domain than in the gain domain for both subsamples. Analyzing joint decision across both domains, we find 20.6% of our Syrians participants to be risk-averse in both gains and losses compared to 14.1% of the Jordanians, while only 6.3% of the Syrians and 4.3% of the Jordanians are risk-seeking throughout both domains. Overall, however, there are no significant differences in risk preferences between Jordanians and Syrian refugees.[20]

[19]For the gain domain, the exact Wilcoxon test (two-sided) yields a p-value of 0.952 and for the loss domain a p-value of 0.573.

[20]For the gain domain, the exact Wilcoxon test (two-sided) for risk-seeking Jordanians and Syrians yields a p-value of 0.9902, for those who are risk-averse it yields a p-value of 0.6233, and for the loss domain the test for risk-seeking Jordanians and Syrians yields a p-value of 0.7928 and for those who are risk-averse a p-value of 0.5318.

Table 3.7: Risk Assessment in the Gain and Loss Domains

	Syrians		**Jordanians**	
	Gain Domain	Loss Domain	Gain Domain	Loss Domain
Always Risk-averse	18 (28.6%)	32 (50.8%)	18 (25.0%)	42 (45.7%)
Always Risk-seeking	15 (23.8%)	7 (11.1%)	22 (23.9%)	9 (9.8%)
Always Risk-averse in G&L	13 (20.6%)		13 (14.1%)	
Always Risk-seeking in G&L	4 (6.3%)		4 (4.3%)	

To assess individual risk propensities, we compute two scores per person (one for the loss, one for the gain domain). In the gain domain, the choice of Yin the first game is scored 1 point, the choice of Y (in the second game as 2 points, and in the third game as 3 points. In the loss domain, the lottery choice of Y in the fourth game scores 3 points, the choice of Y in the fifth game, 2 points, and of Y in the sixth game, 1 point. Mean scores (in the gain domain 3.20 for Jordanians and 3.17 for Syrians, and in the loss domain 4.15 for Jordanians and 4.44 for Syrians) do not reveal any obvious difference between Jordanians and Syrian refugees.[21]

Moving to a multivariate analysis (reported in Tables 3.8 and 3.9) allows us to identify important confounders of revealed risk preferences. We use the risk choices score as the dependent variable. Table 3.8 (3.9) shows the estimated coefficients for scores in the gain domain (loss domain) testing the same set of variables as employed with regard to altruism.

Results for the gain domain indicate that females and older participants are significantly more risk-seeking than other participants. In addition, the risk choices score decreases as the number of a participant's children increases. One may speculate that parents play the lottery games less aggressively by preferring the safe income option without taking risks.

Most importantly, there is significant difference between Syrians and Jordanians

[21] Comparing the risk seeking scores of Jordanians and Syrians in the gain domain (loss domain), an exact Wilcoxon test (two-sided) yields a p-value of 0.83 (0.41).

when controlling for no future (as indicated by the interaction effect contained in Model 3). Syrian refugees make in general less risk choices in the gain domain than Jordanians. However, Syrian refugees who feel as if they do not have a future make significantly more risk choices than other Syrian refugees.[22] Similar findings are well-documented for other civil war victims in the aftermath of such a conflict (Voors et al., 2012). Notice that we do not find any comparable effect for the overall distress level of participants. The HTQ questionnaire elicits different symptoms that cover several aspects of trauma as, for instance, experiencing numbness after a traumatic event. A 'sense of a foreshortened future' has been studied as an important symptom of trauma (Ratcliffe et al., 2014). Specifically analyzed in the context of torture, this sense of no future can cause a loss of interpersonal trust as well as trust in the world with devastating effects on individuals' behavior.

Finally, Table 3.9 reports regression results for risk choices in the loss domain. Again, we find significantly lower risk choices scores for participants with children. In the loss domain, we find no systematic association between risk choices and either the sense of no future or the overall distress level.

In sum, civil war victims are not *per se* more risk-seeking than others. Instead, risk-seeking behavior is confined to those who feel that they do not have a future. Moreover, we observe this behavior only in the gain domain, but not the loss domain. This finding in our analysis adds important details to the emerging literature on behavioral changes caused by civil war. Since the feeling of having no future is central to our results, we move on to inquire into the causes that might lurk behind this feeling.

[22] Testing whether the total effect for Syrian refugees with the sense of no future is zero by means of an F-test for the hypothesis that 'Syrian' + 'Syrian∗No future' equals 0, yields a p-value of 0.033. Thus, those subjects are also significantly more risk-seeking than Jordanians, but not to the extent that applies to other Syrian refugees.

Table 3.8: OLS Regression Results for the Risk Choices Score in the Gain Domain

	Dependent variable:		
	Risk choices score in the gain domain		
	OLS		
	(1)	(2)	(3)
Syrian	−0.217	−0.312	−2.275**
	(0.422)	(0.434)	(1.005)
Female	0.677	0.737*	0.828**
	(0.413)	(0.385)	(0.382)
Number of children	−0.725	−0.859**	−0.898**
	(0.491)	(0.383)	(0.378)
Age	1.334**	1.136*	1.091*
	(0.614)	(0.582)	(0.575)
Low socioeconomic status	0.201	0.093	0.206
	(0.482)	(0.437)	(0.435)
Distress level	0.509		
	(0.344)		
No future		0.243	−0.109
		(0.179)	(0.241)
Syrian*No future			0.774**
			(0.358)
Constant	−1.439	−0.349	0.352
	(1.494)	(1.297)	(1.322)
Observations	130	150	150
Adjusted R^2	0.037	0.033	0.057
F Statistic	1.831* (df = 6; 123)	1.840* (df = 6; 143)	2.284** (df = 7; 142)

Note: We report estimates for the coefficients along standard errors in parenthesis; the goodness of fit for the models is assessed by the adjusted R^2 as well as a joint F-test. The different number of observation is due to the fact that the *'Distress level'* variable contains 20 missing observations. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

Table 3.9: OLS Regression Results for the Risk Choices Score in the Loss Domain

	Dependent variable:		
	Risk choices score in the loss domain		
	OLS		
	(1)	(2)	(3)
Syrian	−0.435	−0.369	−0.759
	(0.402)	(0.403)	(0.946)
Female	0.556	0.435	0.453
	(0.394)	(0.357)	(0.360)
Number of Children	−0.838*	−0.737**	−0.745**
	(0.467)	(0.355)	(0.356)
Age	1.038*	0.799	0.790
	(0.585)	(0.539)	(0.541)
Low socioeconomic status	0.259	0.225	0.248
	(0.459)	(0.405)	(0.409)
Distress level	0.004		
	(0.328)		
No future		−0.058	−0.128
		(0.166)	(0.226)
Syrian*No future			0.154
			(0.338)
Constant	−0.545	0.097	0.237
	(1.424)	(1.203)	(1.245)
Observations	130	150	150
Adjusted R^2	0.008	0.003	−0.002
F Statistic	1.166 (df = 6; 123)	1.081 (df = 6; 143)	0.951 (df = 7; 142)

Note: We report estimates for the coefficients along standard errors in parenthesis; the goodness of fit for the models is assessed by the adjusted R^2 as well as a joint F-test. The different number of observation is due to the fact that the *'Distress level'* variable contains 20 missing observations. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

3.5.3 The Sense of no Future

The sense of no future seems to be an important feeling that provokes specific preferences in civil war victims: refugees who share this feeling display a low level of altruism, while being more risk-seeking (in the gain domain). This is why we analyze the factors that coincide with the sense of no future now. Identifying the factors that correlate with the sense of a foreshortened future might provide insights in ways to track and diminish this feeling. In the following analysis, we focus exclusively on the Syrian subsample to better understand the context in which the sense of a foreshortened future exists. Specifically, we ask whether the sense correlates with the past experience related to war or, rather, the present living conditions Syrian refugees face in Jordan. For that reason, we look at three groups of possible associations, namely: (1) possibly terrifying experiences in the country of origin, (2) experiences relevant to living conditions in the host country, namely Jordan, and (3) basic sociodemographic variables.

Table 3.10 shows the results of an OLS regression model. Here, we use the score attributed to the variable 'feeling as if having no future' as the left hand side variable.[23] We control for: (1) whether family members were lost during the war ('lost family members'), (2) whether displacement in Syria was experienced before fleeing the country ('internally displaced'), (3) whether subjects are financially supported by the UNHCR or another humanitarian organization ('UNHCR or charity'), (4) have stayed in a refugee camp in Jordan ('stayed in a camp'), (5) whether subjects have nuclear family members remaining in Syria ('left behind'),[24] (6) engage in so-

[23] Remember that 67% of the Syrian refugees feel as if they do not have a future compared to 30% of the Jordanians.

[24] Although the act of leaving family members in Syria did happen in the home country, this variable is added to the set of variables that affect the living conditions in Jordan as participants were isolated from nuclear family members at the time of the experiment. This isolation, coupled with an uncertain family reunification, has a negative effect on present living conditions, because having fewer close contacts in Jordan can affect both resilience and access to resources.

cial networking with Jordanians such as sports clubs, voluntary work, neighborhood unions, etc. ('social networking'), and, finally, (7) we also include the stated unwillingness to remain in Jordan ('unwillingness to remain'). The sociodemographic variables are the same as in the previous regression analyses.

Table 3.10: OLS Regression on the Determinants of 'feeling as if having no future' for Syrian Refugees

	Dependent variable:
	No future
	OLS
Lost family members during the war	−0.260
	(0.347)
Internally displaced	0.506
	(0.314)
UNHCR or charity	−0.392
	(0.333)
Stayed in camp	0.619**
	(0.296)
Left behind nuc. family members	0.750**
	(0.296)
Participates in society	−0.759
	(0.476)
Unwillingness to remain	0.671*
	(0.381)
Female	−0.173
	(0.346)
Age	0.258
	(0.386)
Low socioeconomic status	−0.479
	(0.328)
Constant	2.125*
	(1.131)
Observations	60
Adjusted R^2	0.152
F Statistic	2.055** (df = 10; 49)

Note: We report estimates for the coefficients along standard errors in parenthesis; the goodness of fit for the models is assessed by the adjusted R^2 as well as a joint F-test. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

Among the factors attributable to their host country (Jordan), being isolated from family members and having stayed in a refugee camp are positively correlated with the feeling of having no future. At the same time, high scores in the no-future variable are significantly associated with the unwillingness of Syrian refugees to remain in Jordan. There are no significant correlations with variables attributed to past civil war experiences.[25]

Overall, 'feelings as if having no future' among Syrian refugees - all of whom are students - is mainly associated with the current living conditions in the new host country. As such, our findings are consistent with psychological studies that have addressed the susceptibility of youth in exile to suffer from isolation, uncertain family reunification and great uncertainty regarding their futures (Goodman, 2004; Mikhael and Norman, 2018). Yet, the findings may differ when taking a different subject pool into consideration, such as including older non-student refugees.

3.6 Conclusion

This paper draws on economic experiments to analyze risk-taking and altruistic preferences of people who fled the Syrian civil war and live as refugees in Jordan. Syrian civil war refugees behave less altruistically than Jordanians. One could argue that this finding is not surprising taking into account that the former group suffered from a brutal war and managed to escape from it.

Yet, once we control for factors associated with more egoism, it seems that the current living conditions are far more important than past traumatic experiences.

[25] Another way to underscore the importance of the 'no future' variable is to ask whether its potential determinants (such as being isolated from one's family or having stayed in a camp) directly affect our behavioral preferences (i.e., altruism and risk choices). This is, however, not the case. In other words, they need to be 'activated' by the feeling of having no future. Therefore, the feeling of having no future is not only a mediator, but potentially combines the influence of objective living conditions and subjective experiences and feeling. For a partial mediation analysis see Appendix 3.B.

Syrian refugees who have the feeling of having no future are significantly less likely to behave altruistically compared to other refugees. Likewise, the sense of no future goes along significantly higher risk-taking in lotteries that offer gains. Syrian refugees are significantly less risk-seeking in the gain domain than Jordanians. However, the feeling of having no future correlates with risk-seeking behavior among Syrians who exhibit this preference. Overall, it seems that the sense of no future is mainly connected with events experienced in the new host country rather than in Syria. Both being separated from one's family and staying in a refugee camp are positively and significantly correlated with the sense of having no future. We cannot offer causal evidence that the situation in refugee camps causes the feeling of no future. It is, of course, possible that having a sense of no future leads subjects to live in the camps. Yet, it is important to acknowledge that both factors coincide.[26]

One of the most frequently discussed questions regarding the current wave of refugees, no matter whether from Syria or elsewhere, is whether they can integrate into their respective host societies. If altruism is an important element for societal cohesion and, hence, for integrating into the Jordanian society, then we have reasons for concern. We find that anti-social behavior and risk preferences are correlated with the 'feeling of having no future'.

Policy implications of these findings seem straightforward: Policy makers need to support refugees in building their own future. A special focus needs to be placed on creating social networks, and facilitating family reunion. The International Labor Organization (ILO) recognized long ago that prolonged separation and isolation is

[26] Jordan currently hosts one of the largest refugee camps in the world with a population of around 80,000 inhabitants in the Al-Mafraq governorate (where some of our experiments were conducted). In its early years, it had the notoriety of being a violent place. Staying in a camp may come with some deep-rooted behavioral patterns as well as psychological factors underlying those patterns. For more information on the Al-Mafraq refugee camp: [last visited: 01.07.2021] https://www.reuters.com/article/us-syria-crisis-refugees/audit-of-syria-refugees-finds-organized-crime-and-child-soldiers-idUSBRE9740V120130805.

likely to lead to difficult living conditions affecting refugees and their willingness to integrate in the host society (ILO, 1975). Of course, the results reported here invite further speculation. For example, the effects of family separation may be even more pronounced for Syrian refugees in Western Europe as many other factors – such as climate, food, and religion – are more different which may make the separation from one's family even more acute.

3.A Additional Statistical Analysis

3.A.I Mean Scores of the Questionnaire for PTSD Symptoms

The following tables display the questions from the PTSD questionnaire numbered following the order showed in Appendix 3.C. The question regarding the feeling of no future is 'Question 14'. Average are shown per subgroup first for Syrian participants and then for Jordanian participants. Table 3.A.III compares both sample averages with p-values indicating significant differences between them.

Table 3.A.I: Syrian Participants

Statistic	N	Mean	St. Dev.	Min	Max
Question 1	63	3.016	1.039	1	4
Question 2	62	2.516	0.987	1	4
Question 3	61	2.082	1.021	1	4
Question 4	61	2.443	1.041	1	4
Question 5	63	2.127	1.070	1	4
Question 6	62	2.597	1.180	1	4
Question 7	63	2.333	0.967	1	4
Question 8	62	2.339	1.086	1	4
Question 9	62	2.516	1.098	1	4
Question 10	63	2.190	1.105	1	4
Question 11	62	2.532	1.051	1	4
Question 12	62	1.984	0.859	1	4
Question 13	62	2.113	0.889	1	4
Question 14	61	2.984	1.118	1	4
Question 15	63	2.508	0.948	1	4
Question 16	62	2.597	1.207	1	4

Table 3.A.II: Jordanian Participants

Statistic	N	Mean	St. Dev.	Min	Max
Question 1	94	2.479	0.936	1	4
Question 2	92	2.424	0.940	1	4
Question 3	91	1.956	0.906	1	4
Question 4	92	2.163	0.986	1	4
Question 5	94	1.904	0.995	1	4
Question 6	94	2.840	0.919	1	4
Question 7	94	2.564	0.911	1	4
Question 8	93	2.215	0.998	1	4
Question 9	93	2.677	1.002	1	4
Question 10	94	2.500	0.936	1	4
Question 11	94	2.585	0.966	1	4
Question 12	91	1.901	0.790	1	4
Question 13	93	2.151	0.859	1	4
Question 14	92	1.924	0.986	1	4
Question 15	92	2.272	0.878	1	4
Question 16	94	2.330	1.020	1	4

Table 3.A.III: Comparison with Wilcoxon-rank-sum test

Variables	N	Mean	St. Dev.	Min	Max	N	Mean	St. Dev.	Min	Max	p-value
	Syrian Participants					Jordanian Participants					
Question 1	63	3.016	1.039	1	4	94	2.479	0.936	1	4	0.037
Question 2	62	2.516	0.987	1	4	92	2.424	0.940	1	4	0.934
Question 3	61	2.082	1.021	1	4	91	1.956	0.906	1	4	0.731
Question 4	61	2.443	1.041	1	4	92	2.163	0.986	1	4	0.082
Question 5	63	2.127	1.070	1	4	94	1.904	0.995	1	4	0.149
Question 6	62	2.597	1.180	1	4	94	2.840	0.919	1	4	0.227
Question 7	63	2.333	0.967	1	4	94	2.564	0.911	1	4	0.499
Question 8	62	2.339	1.086	1	4	93	2.215	0.998	1	4	0.659
Question 9	62	2.516	1.098	1	4	93	2.677	1.002	1	4	0.576
Question 10	63	2.190	1.105	1	4	94	2.500	0.936	1	4	0.142
Question 11	62	2.532	1.051	1	4	94	2.585	0.966	1	4	0.361
Question 12	62	1.984	0.859	1	4	91	1.901	0.790	1	4	0.999
Question 13	62	2.113	0.889	1	4	93	2.151	0.859	1	4	0.616
Question 14	61	2.984	1.118	1	4	92	1.924	0.986	1	4	<0.001
Question 15	63	2.508	0.948	1	4	92	2.272	0.878	1	4	0.043
Question 16	62	2.597	1.207	1	4	94	2.330	1.020	1	4	0.250

3.A.II Differences Between Online and Lab-in-the-field Sessions

Here, we show the differences between the different ways the experimental sessions were conducted. There are no significant differences in behavior between online and lab-in-the-field sessions within samples.

Table 3.A.IV: Online versus lab-in-the-field

Egoistic choices	
	Lab-in-the-field vs. online
Among Syrians	p-value = 0.1435
Among Jordanians	p-value = 0.1428
Risky choices	
	Lab-in-the-field vs. online
Among Syrians	p-value = 0.4389
Among Jordanians	p-value = 0.7981

P-values are from Wilcoxon rank sum tests.

3.B Partial Mediator Analysis

The following is a partial mediator analysis to evaluate whether the living conditions, specifically having lived in a refugee camp and family separation, have a direct effect on altruism and risk behavior, or whether they are mediated via the 'feeling of having no future'. It seems that the feeling of having no future is not only a mediator, but potentially combines the influence of objective living conditions and subjective experiences.

For this purpose, we:

Step 1: First regress altruism (Table 3.B.I, Model (1)) and risk (Table 3.B.II, Model (1)) on 'stayed in camp' and 'left behind nuc. family members' with our sociodemographic as controls.

Step 2: In Table 3.10 in the main text, we regress the mediator on the independent variables to establish a relationship.

Step 3: Finally, we regress altruism and risk on the mediator and 'stayed in camp' and 'left behind nuc. family members' to analyze whether the effect of 'having no future' overrules the effect of the other two independent variables if they have any (Tables 3.B.I - 3.B.II, Model 2).

Table 3.B.I: OLS Regression Results for the Altruism Score with: (1) 'Stayed in Camp', and 'Left behind nuc. Family members' as Independent Variables and (2) 'No Future', 'Stayed in Camp', and 'Left behind nuc. Family members' as Independent Variables

	Dependent variable:	
	Altruism Score	
	(1)	(2)
Syrian	−1.413*	0.915
	(0.746)	(1.135)
With Syrian	0.598	0.325
	(0.499)	(0.878)
Syrian*With Syrian	−0.167	0.005
	(0.797)	(0.880)
Female	−0.265	−0.368
	(0.401)	(0.398)
Number of children	−0.357	−0.317
	(0.398)	(0.393)
Age	0.297	0.376
	(0.612)	(0.603)
Low socioeconomic status	−0.280	−0.457
	(0.459)	(0.457)
No future		0.332
		(0.319)
Syrian*No future		−1.041***
		(0.384)
WithSyrian*No future		0.114
		(0.379)
Stayed in camp	−0.275	0.008
	(0.628)	(0.634)
Left behind nuc. family members	0.896	1.269*
	(0.637)	(0.657)
Constant	3.552***	2.860*
	(1.355)	(1.453)
Observations	150	150
Adjusted R^2	0.049	0.078
F Statistic	1.850* (df = 9; 140)	2.052** (df = 12; 137)

Note: We report estimates for the coefficients along standard errors in parenthesis; the goodness of fit for the models is assessed by the adjusted R^2 as well as a joint F-test. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

Table 3.B.II: OLS Regression Results for the Risk Choices Score with: (1) 'Stayed in Camp', and 'Left behind nuc. Family members' as Independent Variables and (2) 'No Future', 'Stayed in Camp', and 'Left behind nuc. Family members' as Independent Variables

	Dependent variable:	
	Risk Choice Score in Gain Domain	
	(1)	(2)
Syrian	0.101	−2.101**
	(0.576)	(1.021)
Female	0.675*	0.819**
	(0.385)	(0.380)
Number of children	−0.848**	−0.842**
	(0.385)	(0.378)
Age	1.052*	0.930
	(0.589)	(0.578)
Low socioeconomic status	0.020	0.198
	(0.444)	(0.439)
No future		−0.109
		(0.239)
Syrian*No future		0.877**
		(0.365)
Stayed in camp	0.293	−0.036
	(0.606)	(0.604)
Left behind nuc. family members	−0.739	−1.139*
	(0.616)	(0.620)
Constant	0.345	0.690
	(1.272)	(1.328)
Observations	150	150
Adjusted R^2	0.026	0.067
F Statistic	1.579 (df = 7; 142)	2.181** (df = 9; 140)

Note: We report estimates for the coefficients along standard errors in parenthesis; the goodness of fit for the models is assessed by the adjusted R^2 as well as a joint F-test. Significance levels: *p ¡ 0.10; **p ¡ 0.05; ***p ¡ 0.01.

3.C Questionnaire for PTSD Symptoms

The questionnaire consists of questions related to PTSD symptoms that people sometimes have after experiencing hurtful or terrifying events, which we denote here as 'distress level'. In the distress part of the questionnaire, subjects could rate potential feelings of unease (e.g., 'Unable to feel emotions') on a four point scale ranging from 'not at all' to 'a little' to 'quite a bit' to 'extremely'.

The following are symptoms that people sometimes have after experiencing hurtful or terrifying events in their lives. Please read each one carefully and decide how much the symptoms bothered you in the past week.

Please choose the appropriate response for each item:

	Not at all	A little	Quite a bit	Extremely
Recurrent thoughts of memories of the most hurtful or terrifying events.				
Feeling as though the event is happening again.				
Recurrent nightmares.				
Feeling detached or withdrawn from people.				
Unable to feel emotions.				
Feeling jumpy, easily startled.				
Difficulty concentrating.				
Trouble sleeping.				
Feeling on guard.				
Feeling irritable or having outbursts of anger.				
Avoiding activities that remind you of the hurtful event.				
Inability to remember parts of the most hurtful events.				
Less interest in daily activities.				
Feeling as if you don't have a future.				
Avoiding thoughts or feelings associated with the hurtful events.				
Sudden emotional or physical reaction when reminded of the most hurtful events.				

3.D Game Instructions

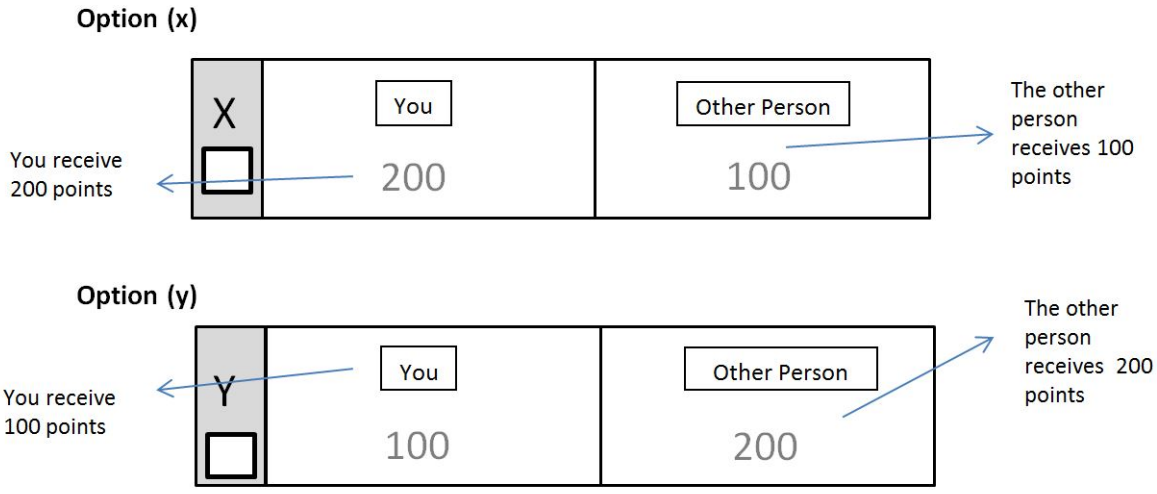
3.D.I Dictator Game

You are given two options: Option (X) and Option (Y).

Both options allow you to distribute a total amount of 300 points between YOU and a (treatment).[27] Hence there are two people interacting.

Have a look at this example:

- Please choose Option (X) or Option (Y) by ticking the box below each letter.



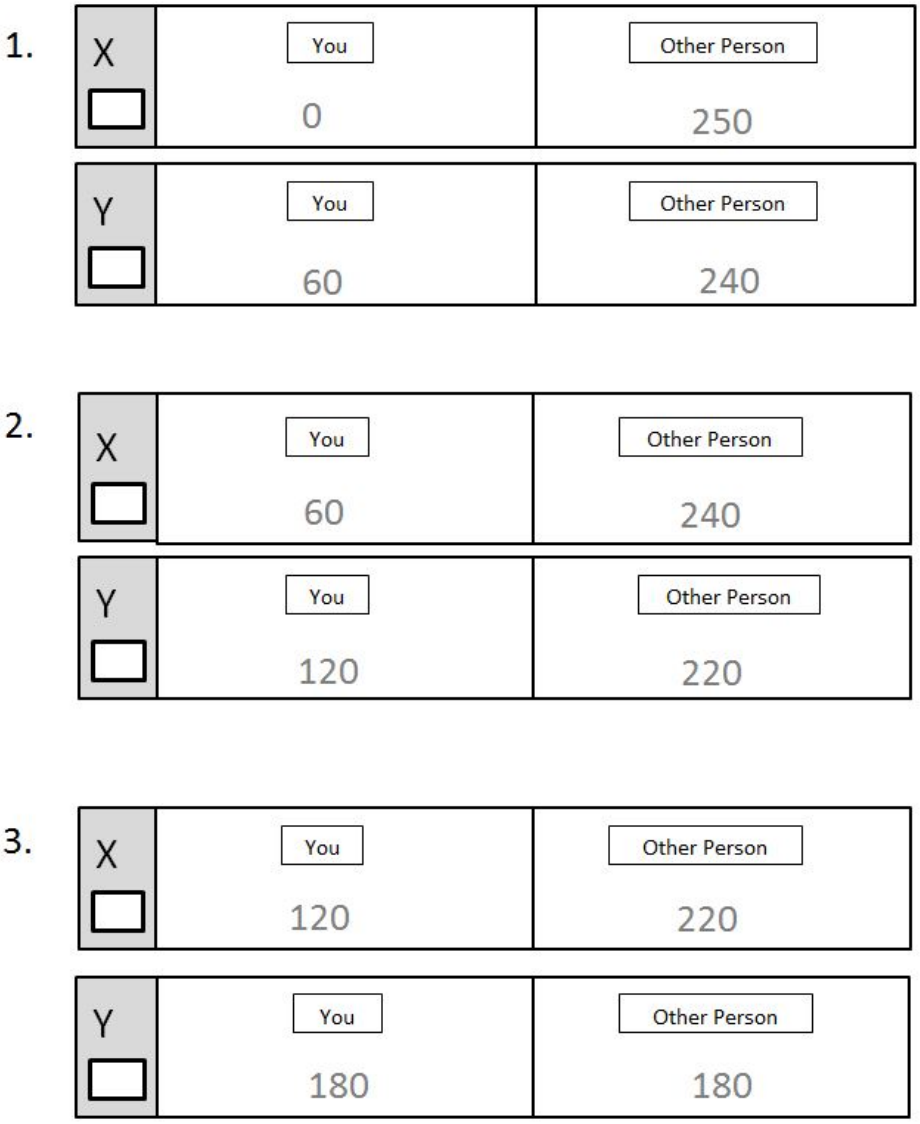
- If you choose Option (X) you will receive 200 points and the other person receives 100 points.
- If you choose Option (Y) you will receive 100 points and the other person

[27] For the sample used in this paper: Syrians were told that they are playing with another Syrian participant or a Jordanian participant and Jordanians were told they are playing with another Jordanian participant or a Syrian participant.

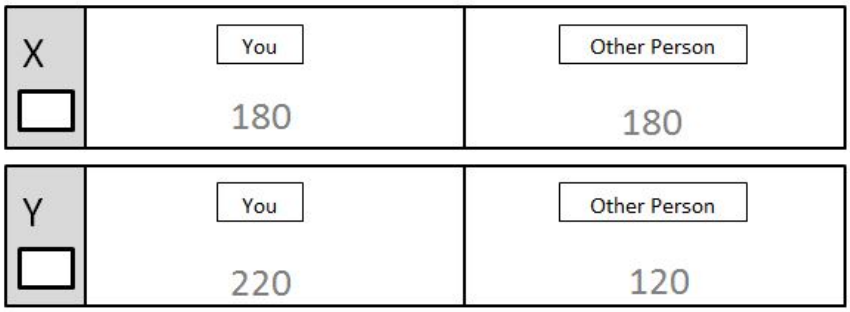
receives 200 points.

- After all participants have completed the questionnaire, we will match you with a (treatment). We will pay you both according to one randomly chosen decision.

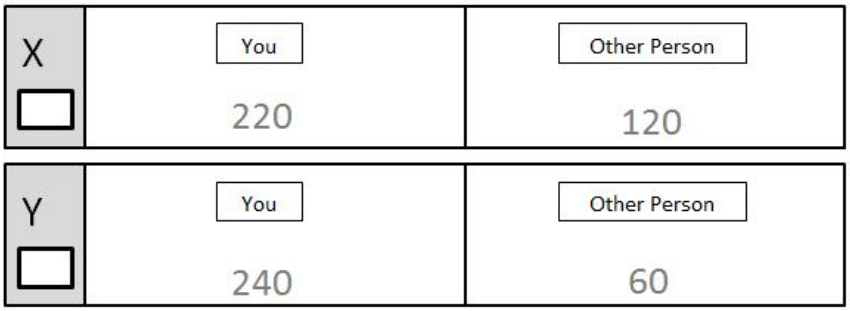
Which option do you choose in the following 6 situations?



4.


X
You
180
Other Person
180
Y
You
220
Other Person
120

5.


X
You
220
Other Person
120
Y
You
240
Other Person
60

6.


X
You
240
Other Person
60
Y
You
250
Other Person
0

3.D.II Lottery Game

Now, consider yourself to be in the following situation:

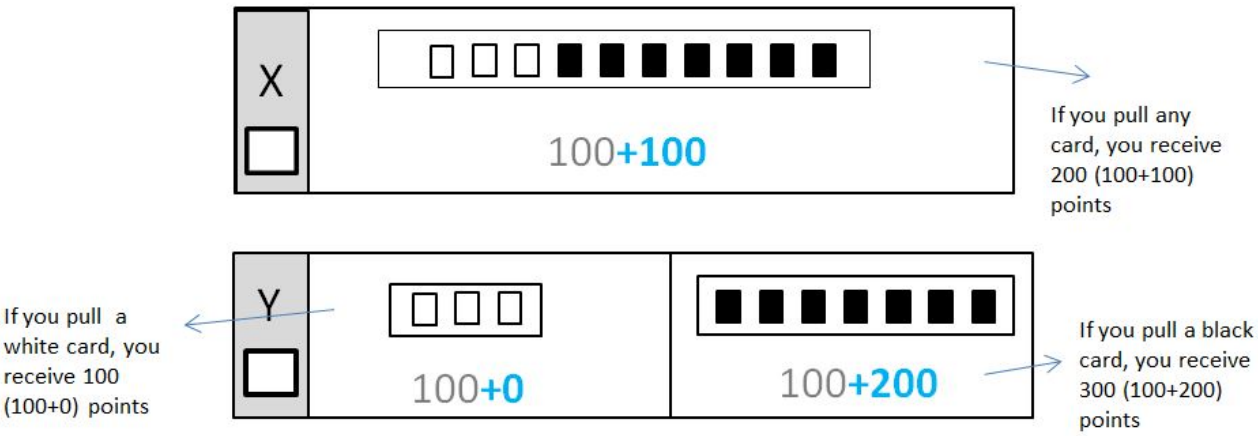
Initially, you get 200 Points.

You have 10 cards: 3 white and 7 black cards.

Drawing one card at random, the probability of choosing a white card is 30% and the one of choosing a black one is 70%.

Have a look at this example:

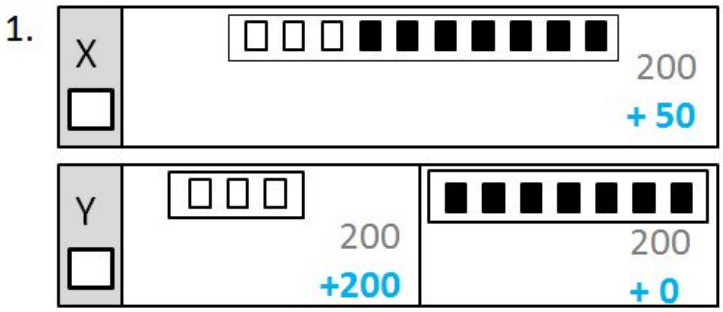
- Please choose Option (X) or Option (Y) by ticking the box below each letter.

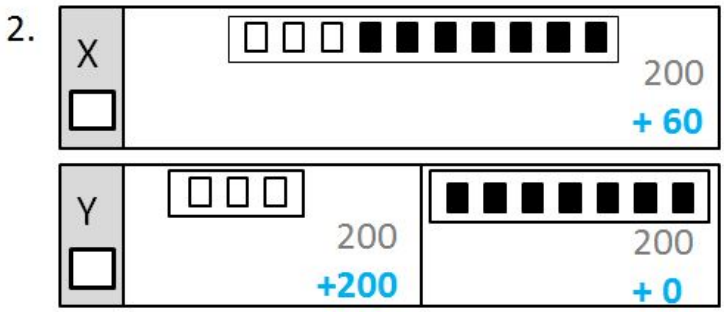


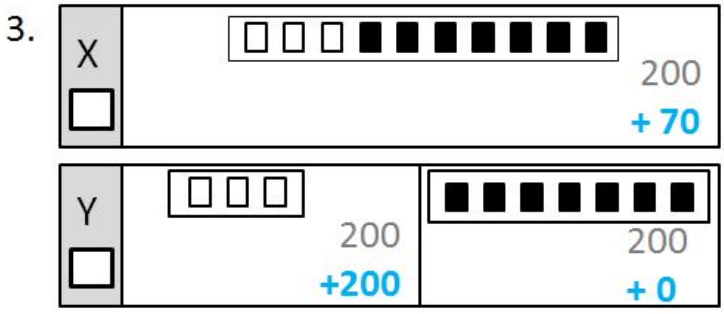
- If you choose Option (X) you get 100 additional points for any card you pull (regardless of the color).

- If you choose Option (Y) you get 200 additional points in case you pull a black and 0 additional points in case of pulling a white one.
- After all participants have completed the questionnaire, we will randomly select one of your pairs of options and pay you accordingly.

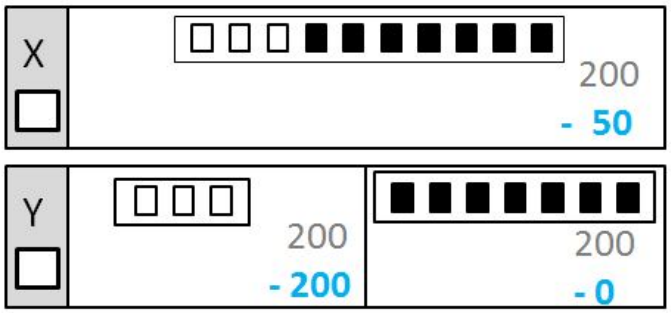
What option do you choose in the following 6 situations?



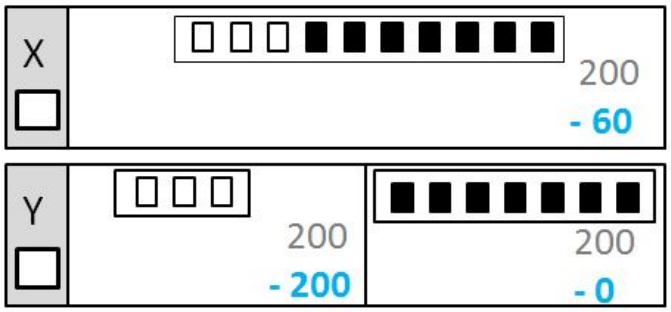




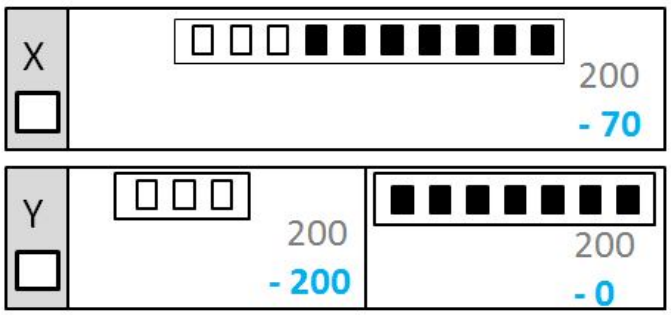
4.


X
200
- 50
Y
200
- 200
200
- 0

5.


X
200
- 60
Y
200
- 200
200
- 0

6.


X
200
- 70
Y
200
- 200
200
- 0

Chapter 4. Honestly? An Experimental Study on Preferences for Truth-telling among Refugees and Non-refugees in Syria, Jordan, and Germany [1]

Abstract

We report the results of an experiment on norm violation, specifically lying, in a repeatedly played mind game with Syrian refugees in Jordan and Germany. We compare their behavior with Syrians who still live in Syria as well as with Jordanians and Germans. The average number of lies is very similar – and low - across all five samples. However, the lying patterns of Syrian refugees are different from non-refugee participants in Germany, Jordan, and Syria itself. Syrian refugee participants are likely to lie more frequently than non-refugee participants. After having lied once, refugee participants resort to a "never return"- pattern significantly more often than the non-refugee participants. A closer look at the sociodemographic characteristics of our Syrian refugee participants reveals that lying is associated with higher age and gender, while a longer stay in the host country is positively correlated with a lower propensity to lie.

Keywords: Civil war; experimental economics; honesty; lying; psychological distress.

JEL Codes: C93, D01, 015.

[1] This chapter is co-authored by Nora El-Bialy, Andreas Nicklisch, Lamis Saleh, and Stefan Voigt.

4.1 Introduction

Since the beginning of the civil war in Syria in 2011, more than 5.5 million Syrians have fled their country. More than three million have sought refuge in Turkey, more than one million in Jordan and almost one million in the European Union.[2] The Syrian conflict is considered to be the largest humanitarian and refugee crisis of our time.[3] Naturally, migrants take with them their norms and their culture. In this paper, we ask how Syrians adjust their behavior after the arrival in their new environment. We do so by focusing on the extent to which they lie and ask whether Syrian refugees lie to a different degree than Syrians who have stayed in their home country and participants in the experiment who live in either Jordan or Germany, that is, the new host countries of Syrian refugees.

Norms are core assets of societies as they help people to coordinate their behavior and to cooperate with each other. In our paper, we analyze compliance with the norm of not lying. Although lying may be individually appealing in many circumstances, it is likely to harm society as a whole. Higher levels of truth telling in a society are associated with lower negotiation and monitoring costs in all walks of life, shorter and less costly law cases, and improved financial resources of the state. As citizens truthfully report their incomes, tax authorities will need fewer tax collectors. In sum, when most citizens deter from lying this can save society's resources which can be allocated to more productive uses.

Although almost all societies condemn lying, and there is evidence for a broad acceptance of truth telling as the behavior expected by others (Abeler et al., 2019), compliance with it varies significantly across societies. If illegal behavior – such as

[2] All numbers according to United Nations High Commissioner for Refugees (UNHCR). http://data.unhcr.org/syrianrefugees/regional.php.

[3] Filippo Grandi, the United Nations high commissioner for refugees. https://www.unhcr.org/syria-emergency.html.

tax evasion and corruption - is widespread in a society, compliance with truth-telling is low (Gächter and Schulz, 2016). In other words, not sticking to the truth seems to be determined largely by one's environment.

This finding leads to a follow-up question, namely how people behave once they live in a new environment. More specifically, how are migrants' preferences for truth-telling shaped by the very different environments they live in under (in most cases) quite dramatic circumstances without any prior preparations? Do they behave as they would do in their home societies, do they try to mimic the behavior frequently displayed in their host country, or do they avoid any action that might be perceived as lying whatsoever? Those questions are of major importance for industrialized countries as almost all have experienced substantial in-migration during (at least) the last decade. The new members of society are very likely to change the structure and the behavioral patterns of the entire societies. Our results help to understand the direction of this change.

We answer our research questions on the basis of a series of lab-in-the-field and online experiments with Syrians. Some of our Syrian participants are refugees in Germany, others are refugees in Jordan, and yet others still live in Syria. Participants in our experiments toss a fair electronic die for six rounds (Kajackaite and Gneezy, 2017). In each round, participants are asked to predict privately the outcome of an electronic die (the computer in front of them randomly producing a number between one and six), and they receive a monetary reward only if they claim that the predicted number matches the number appearing on the computer screen. Since the experimenter can never know the numbers thought of by participants, the number of matches claimed is also non-verifiable and lying cannot be analyzed on the basis of single events. Rather, we infer it based on the probability distribution of the number of matches and across repeated play by the participants.

Our findings indicate that overall, the behavior of refugees is remarkably similar to that of non-refugees. Refugees have a slightly higher likelihood to lie, but overall differences regarding the average number of reported matches throughout the six rounds fail to reach significance. Yet, there is a noteworthy difference in how refugees lie: they are more likely to misreport frequencies for 4 or more matches than the other groups. Once refugees have lied, they tend to keep on lying for the remaining rounds of the game suggesting that once they got over the feeling of being dishonest once, it does no longer have a lingering effect on them. This pattern follows what has been referred to by Mazar and Ariely (2010) as the 'What the hell effect'.Interestingly, we do not observe this pattern among non-refugees. These findings point to variations in how participants calibrate the intrinsic cost of lying, the reputational cost of lying, the weight of social norms, and the utility form lying.

It is important to stress that our experiment cannot provide causal inference, as the choice of remaining in Syria or becoming a refugee in another country is not random, and the distribution of the refugees to their host countries is not random either. Self-selection thus needs to be taken into consideration. What we can provide is empirical evidence regarding behavioral patterns of refugees regarding lying. We also speculate about how such patterns will evolve in the future of the refugees who now live in host countries. In our post-experiment questionnaire, 92% of Syrians in Germany and 66% of Syrians in Jordan stated that they were willing to stay in Germany and Jordan, respectively. The ability to (re-)learn social behavior in new contexts thus promises to be an important competence for those Syrians who plan to remain in their host country.

Our results add to two streams of literature. The first stream is the rapidly growing experimental literature on truth-telling (Abeler et al. (2019) provide an almost complete overview). The second is the literature on the behavioral effects of civil

wars (Bauer et al. (2016) is a survey). Our paper is among the first to conduct an experiment involving refugees who have experienced a civil war, while the civil war is still raging. In addition to making repeat choices, the participants in our experiments also filled in a questionnaire inquiring into their level of psychological distress, as we also ask whether there is a systematic association between being distressed and not telling the truth.

To this end, we follow the experimental tradition initiated by Fischbacher and Föllmi-Heusi (2013) who analyze participants' incentives to lie when payoffs depend on the privately reported outcome of a random variable and not on an actual outcome of a random device. In their meta-study of 72 papers that have followed that lead, Abeler et al. (2019) identify three factors crucially influencing the propensity to lie: (1) the direct cost of lying, (2) the desire to acquire a reputation of being honest, and (3) the influence of social norms. Based on similar arguments, Gächter and Schulz (2016) show that the lying patterns observed can best be explained by a co-evolution of institutions and values. It seems that weak institutions, operationalized as widely present tax evasion and high levels of corruption, yield indirect costs as they undermine the possibly internalized social norm toward honesty and are associated with higher levels of lying.

We are not aware of any studies focusing on changes in truth-telling as a consequence of displacement. Barr and Serra (2010) conducted an experiment with international students to analyze whether the tendency to bribe someone correlates with the amount of time spent living in the United Kingdom. The authors provide evidence suggesting that behavioral norms are not an immutable trait acquired in early years and then fixed for the rest of one's life. Rather, the more recently experienced institutional environment has important consequences on the norms held by their subjects.

Yet, it is not only the past institutional frameworks and contemporary ones that affect behavior. A growing literature has evolved that inquires into how experiencing civil war and other kinds of extreme violence affect personal values and traits such as time preferences, the degree of acting altruistically, accepting risks, or the propensity to cooperate with others. In a seminal article, Voors et al. (2012) analyze behavior in post-conflict Burundi. They find that individuals having experienced violence themselves or living in communities that have been violently attacked display more altruistic behavior, but are also more risk-seeking, and act less patiently. Following this approach, Gilligan et al. (2014) find that the experience of violence is associated with more altruistic giving, more contributions to public goods and a higher willingness to reciprocate among civil war victims from Nepal. Bauer et al. (2014) show that civil war victims from Georgia and Sierra Leone who experienced a greater exposure to war exhibited a higher degree of egalitarian preferences with regard to their own group, but not with their out-groups. Finally, Cassar et al. (2011) demonstrate that local trust levels among civil war victims from Tajikistan decreased, whereas trust in people living far away increased. The authors suggest that the conflict in Tajikistan can be described as of the 'neighbor against neighbor' type. The inability to easily separate friend from foe is likely to make people more cautious and less trusting with regard to their immediate environment. Hence, although the literature on the effects of war related violence on behavior does not focus on the norm of truth telling, it could be that extreme events such as experiencing a civil war or flight may affect truth telling significantly. The third section offers a number of conjectures about how this might be the case.

The rest of the paper is organized as follows. In Section 2, the experimental setup and basic characteristics of our participants are described. Section 3 introduces our behavioral conjectures. Section 4 presents the results, and Section 5 discusses our findings and concludes.

4.2 Experimental Design and Participants

4.2.1 The Game

For our experiment, we use an adjusted version of the mind game (Kajackaite and Gneezy, 2017).[4] The setup of the experiment is similar to the die rolling game introduced by Fischbacher and Föllmi-Heusi (2013). Participants are instructed to think of a number between one and six before a number between one and six is randomly generated and shown to them on the screen (the 'outcome of an electronic die'). After observing the random number, participants are asked to report the number they had thought of before. Participants receive a payoff (50 points) if the reported number matches the outcome of the electronic die, but no payoff if the numbers do not match. They play the game six times in a row.

Dishonest claims of matches cannot be uncovered based on a single outcome. However, the game's design allows us to detect lying through probability calculations, both with regards to the distribution of reported matches within different participant groups,[5] and according to the reported individual sequence of matches.[6]

4.2.2 The Setup

The mind game experiment is part of a larger research project dealing with refugees and some of their basic socioeconomic values such as: altruism, risk aversion, reci-

[4]Prior variants of the mind game were used by a number of other scholars including Shalvi et al. (2011), Jiang (2013), and Potters and Stoop (2016).

[5]In this way, in a group of honest participants, we expect to find zero matches in 33%, one match in 40%, two matches in 20%, three matches in 5%, four matches in 0.8%, five matches in 0.06%, and six matches in 0.002% of all cases (in other words, two out of 100,000 honest participants are expected to report six matches).

[6]Since (true) matches are random events, the sequence of reported matches is expected to be serially uncorrelated. That is, the likelihood of truthfully reporting a match is independent of reporting a match or 'no-match' previously.

procity, cooperativeness, and trust.[7] The experiments were conducted between July 2016 and December 2017. All experiments were run as lab-in-the-field or online (especially inside Syria where we could not run lab-in-the-field-experiments due to security concerns).[8]

We used a variety of methods to invite individuals to participate in our experiments. First, we posted an invitational text on a social network group that we established in 2016 among Syrian refugees in Germany[9] and later extended it to refugees in Jordan and Syrians inside Syria. We also distributed flyers at different university campuses in Jordan, Germany and Syria. In Syria, a call to participate in 'an academic survey' was shared among the network members in Aleppo, Damascus, Homs, Hama, and Idlib (some of the regions were under control of the government, some under control of the rebels at the time of the experiments). The sample of individuals still living in Syria predominantly comprises students currently attending universities or institutes for professional training in neighborhoods stable enough at the time of the experiment for residents to attend higher education regularly. In Jordan, in addition to the social network group, both Syrians and Jordanians were recruited from two large universities and a nongovernmental organization (NGO) supporting refugees located in three different Jordanian governorates hosting the largest number of Syrian refugees in the country.[10] In Germany, Syrian refugees were mainly recruited in different reception centers in Hamburg. Finally, German

[7] See our project's website – https://www.jura.uni-hamburg.de/en/forschung/institute-forschungsstellen-und-zentren/institut-recht-oekonomik/internationale-kooperationen/gewalt-flucht-und-sozio-oekonomisches-verhalten.html - for more details. The mind game was always played at the end of the experimental session after participants played games on their general level of altruism, their risk attitudes, their reciprocity concerns, their cooperativeness and their trust. The study was conducted with Limesurvey. The open-source statistical software R was used for the analysis.

[8] Our experimental setting has been approved by the ethics committee for experimental research of the University of Hamburg. The authors are happy to provide further details upon request.

[9] During our first pilot sessions to recruit refugees in reception camps in Germany, we discovered that social networks were their main means of digital communication rather than using emails.

[10] These are Amman, Mafraq, and Irbid.

participants were invited relying on the subject pool of the experimental laboratory of the University of Hamburg (Bock et al., 2014).[11]

Participants were paid in cash by the experimenters in Jordan and in Germany, while payoffs in Syria were distributed by previously designated members of the social network group who did not participate in the experiment. The maximum our participants could earn in the mind game experiment was 3 Euros (claiming 6 matches each worth 50 cents), or the equivalent in Jordanian Dinars or US dollars (converted according to the purchasing power parity based on a typical meal bought in each country).[12] The instructions of the game were formulated in neutral language (see Appendix 4.C).[13]

4.2.3 Participants' Characteristics

At the end of the experimental sessions, participants were asked to answer a questionnaire consisting of four parts covering: (i) their socioeconomic background, (ii) their flight experience (for the refugee participants), (iii) their current living situation, and (iv) a shortened version of the Harvard Trauma Questionnaire.[14] We used an abbreviated version focusing on symptoms of post-traumatic stress disorder (PTSD), but no questions regarding the direct exposure to events causing those

[11]The numbers of observations differ across our five populations as a result of the different manners of recruitment used due to the specific nature of each group at hand. Moreover, the main focus of our experiments are on Syrians both in Syria and elsewhere which is why their numbers are higher than the number of Germans who participated.

[12]In Jordan, the most participants received was approximately 2.30 Dinar, and in Syria 3.60 Dollar. In Syria, participants at locations not under government control received their payments in cash. Participants at locations under governmental control were also offered their payment in cash. However, many participants did not pick up their payoffs for security reasons: they feared facing personal harm and security problems for receiving money from a foreign institution (a total of 49 participants remained unpaid). All participants who picked up their payoff confirmed their payment. The total payment was higher as the payoff from the other games were added together at the end of the experimental session.

[13]We ensure semantic equivalence by having an Arabic translation of the English instruction and a back-translation into English by another independent translator.

[14]The full Trauma questionnaire was developed to detect refugees suffering from post-traumatic stress disorder (Mollica et al., 1992) and was subsequently modified for subjects from the Middle East region, especially from Iraq (Shoeb et al., 2007).

symptoms (such as combat exposure, physical childhood abuse, sexual violence, being threatened with a weapon), as we did not want to evoke memories of particularly atrocious events. Therefore, we do not interpret the resulting test score of the questionnaire as a PTSD measure, but rather as an indicator for subjects suffering from psychological distress at the time of the experiment.[15]

At the time of the experiments, Syrian refugees had, on average, lived 1.3 years in Germany compared to 4.2 years in Jordan. In other words, most Syrian participants living in Germany arrived during 2015, while Syrian participants living in Jordan arrived mainly during 2013. Table 4.1 reports the general sociodemographic characteristics of our participants.[16] Eyeballing the table reveals that the five groups differ among a number of attributes reminding us of the self-selection issue already mentioned above. The average Syrian refugee who made it all the way to Germany is less likely to be female and married, has fewer kids, is less distressed, has achieved a higher level of education, and was somewhat wealthier prior to the civil war than the average Syrian refugee in Jordan. These same differences do not only apply to our sample but can be found among the Syrian refugee populations in the two countries as a whole. But there are, of course, also significant differences between the German participants and the other four groups, most notably the lower level of religiosity among the Germans – which is also representative of the entire German population. Similar differences also apply when we compare Syrian refugees with Syrians who have stayed in their country. Given these differences in our samples, we need to control for them in our regression models.

[15]The questions we used are documented in the Appendix 4.B, general results are presented in Figure 4.A.I in the Appendix.

[16]Table 4.A.I reports significant differences between the sociodemographic variables in the Appendix

Table 4.1: Sociodemographic Characteristics

(a) German Participants

Variable	N	Mean	St. Dev.	Min	Max
Importance of religion	75	1.827	1.057	1.000	4.000
Primary and secondary education	91	0.264	0.443	0	1
Currently a student	91	0.143	0.352	0	1
Tertiary education	91	0.593	0.494	0	1
Female	91	0.462	0.501	0	1
Age 16 - 26	91	0.209	0.409	0	1
Age 27 - 36	91	0.165	0.373	0	1
Age 37 - 46	91	0.165	0.373	0	1
Age 47 - 56	91	0.143	0.352	0	1
Age 57+	91	0.319	0.469	0	1
Low income level	91	0.033	0.180	0	1
Distress level	91	1.456	0.431	1.000	3.375
Distress > 2.5	91	0.033	0.180	0	1
Married	91	0.308	0.464	0	1
No. of children	89	0.820	1.029	0.000	3.000

(b) Jordanian Participants

Variable	N	Mean	St. Dev.	Min	Max
Importance of religion	139	3.842	0.404	2.000	4.000
Primary and secondary education	143	0.175	0.381	0	1
Currently a student	143	0.524	0.501	0	1
Tertiary education	143	0.301	0.460	0	1
Female.	140	0.571	0.497	0	1
Age 16 - 26	143	0.727	0.447	0	1
Age 27 - 36	143	0.133	0.341	0	1
Age 37 - 46	143	0.056	0.231	0	1
Age 47 - 56	143	0.056	0.231	0	1
Age 57+	143	0.028	0.165	0	1
Low income level	142	0.218	0.415	0	1
Distress level	143	2.206	0.560	1.000	3.875
Distress > 2.5	143	0.245	0.431	0	1
Married	142	0.183	0.388	0	1
No. of children	101	0.950	1.951	0.000	7.000

(c) Syrian Refugees in Germany

Variable	N	Mean	St. Dev.	Min	Max
Importance of religion	92	3.391	0.811	1.000	4.000
Primary and secondary education	108	0.333	0.474	0	1
Currently a student	108	0.417	0.495	0	1
Tertiary education	108	0.250	0.435	0	1
Female	110	0.155	0.363	0	1
Age 16 - 26	106	0.566	0.498	0	1
Age 27 - 36	106	0.236	0.427	0	1
Age 37 - 46	106	0.038	0.191	0	1
Age 47 - 56	106	0.047	0.213	0	1
Age 57+	106	0.113	0.318	0	1
Low income level	108	0.296	0.459	0	1
Distress	114	1.787	0.911	1.000	3.875
Distress > 2.5	114	0.149	0.358	0	1
Married	109	0.239	0.428	0	1
No. of children	69	0.478	0.868	0.000	3.000

(d) Syrian Refugees in Jordan

Variable	N	Mean	St. Dev.	Min	Max
Importance of religion	182	3.907	0.310	2.000	4.000
Primary and secondary education	190	0.779	0.416	0	1
Currently a student	190	0.158	0.366	0	1
Tertiary education	190	0.063	0.244	0	1
Female	189	0.683	0.467	0	1
Age 16 - 26	190	0.495	0.501	0	1
Age 27 - 36	190	0.184	0.389	0	1
Age 37 - 46	190	0.189	0.393	0	1
Age 47 - 56	190	0.100	0.301	0	1
Age 57+	190	0.032	0.175	0	1
Low income level	189	0.370	0.484	0	1
Distress level	191	2.512	0.768	1.000	3.692
Distress > 2.5	191	0.560	0.498	0	1
Married	190	0.489	0.501	0	1
No. of children	131	3.840	3.210	0.000	11.000

(e) Syrians in Syria

Variable	N	Mean	St. Dev.	Min	Max
Importance of religion	90	3.867	0.402	2.000	4.000
Primary and secondary education	97	0.103	0.306	0	1
Currently a student	97	0.670	0.473	0	1
Tertiary education	97	0.227	0.421	0	1
Female	102	0.382	0.488	0	1
Age 16 - 26	102	0.873	0.335	0	1
Age 27 - 36	102	0.098	0.299	0	1
Age 37 - 46	102	0.020	0.139	0	1
Age 47 - 56	102	0.000	0.000	0	0
Age 57+	102	0.010	0.099	0	1
Low income level	97	0.278	0.451	0	1
Distress level	102	2.184	0.840	1.000	3.500
Distress > 2.5	102	0.333	0.474	0	1
Married	99	0.202	0.404	0.000	1.000
No. of children	91	0.286	0.764	0.000	5.000

The number of observations varies within each sample due to missing observation in the non-mandatory sociodemographic questions from the post-experimental survey.
'Importance of religion' is a categorical variable ranging from 1='very important' to 4='not important at all'. Education is measured with dummies for each level. 'Female' is a dummy variable describing the gender of the participants. Age is measures with dummies for each category. 'Low income level' is a dummy variable for participants belonging to the low income level. The variable 'Distress level' is categorical with levels that range from 1 = 'not at all' to 4 = 'extremely'. 'Distress level > 2.5' is a dummy variable that stands for participants whose score for distress level is above 2.5 and hence suffer from severe distress level. 'Married' is a dummy for those participants who are married. Finally, 'No. of children' is a continuous variables for the number of children a family has.

4.3 Hypotheses

To generate hypotheses, we rely on the results from mind games reported in the literature on the one hand and on the behavioral impacts of experiencing civil war on the other. The hypotheses to be presented in this section are partially incompatible, implying that they can be considered as being in a kind of horserace. This will help us identify the causal mechanism behind observed differences in lying behavior - if any.

Not only is lying a non-accepted behavior across the globe, it also displays fairly little variation across countries. According to the meta-study by Abeler et al. (2019) that relies on 72 experiments conducted in very different environments, subjects on average forgo three quarters of the potential monetary gains from lying. Based on this finding, we propose:

Hypothesis 1a: Between the five different participant groups at hand, no differences in the propensity to lie will be found.

In their studies on dishonest behavior, Ariely and Jones (2012) stress the tradeoff between lying and telling the truth. On the one hand, people want to profit from cheating while on the other, they want to view themselves as honest people. One question is how people behave who have given in to the temptation of cheating such that their self-image already suffers. In a game repeated many times, would people who have succumbed to the temptation once ever return to honest behavior? Or would they, having lost face already, say 'what the hell?' and keep on cheating? In a game that was repeated 100 times and in which participants could cheat in every single round, Mazar and Ariely (2010) found that 67% of their participants behaved in line with the 'what-the-hell effect'. Now, our participants play the mind game

only six times but the effect might already be found once participants have lied for the first time. In line with previous findings we thus hypothesize:

Hypothesis 1b: Once a participant has claimed a match, we expect her or him to claim more matches in the following rounds of the game.

To analyze to what degree this kind of reinforcement is relevant, we introduce a variable that measures whether participants ever report a 'no-match' after having reported their first match. We propose to call the underlying structure a 'no-return' pattern: for this, we consider the sequence of matches among the six decisions in the repeated mind play. The combined likelihood of all 'no-return' patterns is 0.0167. Thus, the probability of wrongfully accusing subjects of not telling the truth is less than two percent.[17]

The literature on the behavioral impacts of experiencing civil war has identified a propensity to behave more altruistically, to accept more risks, to be less patient, and to participate more in the provision of public goods after experiencing civil war. Yet, it is unclear what this implies for the propensity to lie. In the experiment, no (potential) real-life interaction partner is damaged, and lying is completely risk-free. In turn, all Syrians no matter whether refugees or not have been affected by the civil war. It is very likely that they have also lost some wealth which could imply that their opportunity costs of lying may be lower. This, hence, leads to a hypothesis in direct opposition to the first one and highlights the exploratory nature of our empirical analysis:

[17]Displaying a success with a 1 and a 'no-match' with a 0 gives us the following patterns per participant (to analyze whether they return to a 'no-match'): 111111+011111+001111+000111+000011. Like this we can calculate the probabilities for each pattern. $0.1667*0.1667*0.1667*0.1667*0.1667*0.1667 = 0.0000214335$; $0.8333*0.1667*0.1667*0.1667*0.1667 * 0.1667 = 0.0001072703$; $0.8333 * 0.8333 * 0.1667 * 0.1667 * 0.1667 * 0.1667 = 0.0005362227$; $0.8333 * 0.8333 * 0.8333 * 0.1667 * 0.1667 * 0.1667 = 0.00268047$;$0.8333 * 0.8333 * 0.8333 * 0.8333 * 0.1667 * 0.1667 = 0.01339913$.

Hypothesis 2: There will be higher levels of lying among the three Syrian groups compared to the two non-Syrian samples.

The institutional environment as well as current living conditions are likely to impact the propensity to lie (Gächter and Schulz, 2016). The local level of tax evasion as well as the local corruption level were found to be good predictors for an individual's likelihood to lie. Given that the levels of both tax evasion and corruption in Germany are very different from the corresponding levels in Syria, we expect Syrian refugees now residing in Germany to behave differently than their compatriots who were still in Syria at the time of the experiment (with Syrians in Jordan supposedly somewhere in between these two samples). This leads us to:

Hypothesis 3: Syrian refugees in Germany display a lower propensity to lie than Syrians in Jordan and in Syria.

4.4 Results

In the mind game, the dishonesty of a reported individual match is unobservable. However, our identification strategy uses two indicators revealing dishonesty on the aggregate level. First, the distribution of matches per person indicates dishonest reports across samples. Second, systematic patterns within the sequence of reported matches by persons serve as another indicator for truth telling.

4.4.1 Comparing the Mean Number of Reported Matches across Samples

Beginning with the comparison across samples, the average number of reported matches per person in our samples is: 1.48 for Syrians in Syria, 1.94 for Syrian refugees in Jordan, 1.93 for Syrian refugees in Germany, 1.65 for Jordanians, and 1.62 for Germans (Figure 4.1). All averages indicate some lying as all differ significantly from the expected value of one match in six trials.[18] At the same time, they are completely in line with the findings reported by Abeler et al. (2019) regarding the willingness of participants to forgo on average three quarters of the potential monetary gains from lying.[19] Moreover, the average number of matches reported by Syrian refugees in both Jordan and Germany is higher than those reported by Syrians living in Syria, Jordanians living in Jordan, and Germans living in Germany. But since those differences are not significant, the findings are in line with Hypothesis 1a.[20]

For a more elaborate analysis, Figure 4.2 shows the distributions of reported matches per sample. Bars indicate the frequency with which participants reported matches in the experiment (ranging from zero to six). The red line illustrates the expected probabilities for the number of matches based on the binomial distribution for having zero to six matches when throwing a fair die six times in a row.[21] The results show a

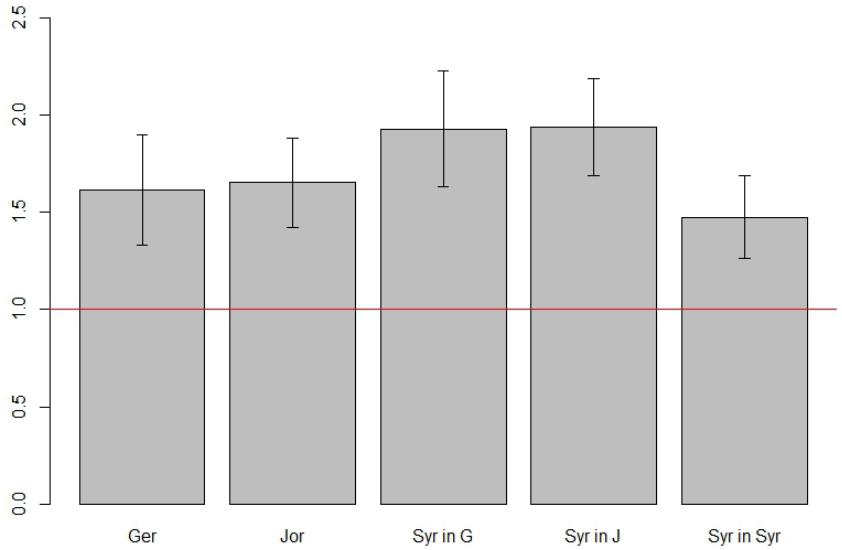
[18] $p < 0.01$ for all comparisons using subjects as independent observations; exact Wilcoxon-Mann-Whitney Test, two-sided.

[19] In our case, for each reported match participants can earn 50 points and, hence the maximum is 300 points. Figure 4.1 shows that participants earn on average something between 75 and 100 points, i.e. they are willing to forgo around three quarters (between 225 and 200 points) of the total amount of points by not misreporting the number of matches.

[20] Comparing the refugee samples with the other samples reveals the probability of sample averages being equal using subjects as independent observations and exact Wilcoxon-Mann-Whitney Tests, two-sided, range from $p = 0.11(0.15)$ for Syrian refugees in Germany (Jordan) and Syrians in Syria, to $p = 0.28(0.34)$ for Syrian refugees in Germany (Jordan) and Germans (Jordanians).

[21] The expected probabilities for 0, 1, 2, 3, 4, 5, and 6 matches when throwing a fair die 6 times are: 0.33490; 0.40188; 0.20094; 0.05358; 0.00804; 0.00064; 0.00002, respectively. The asterisks indicate significant differences between the reported frequency of matches and the expected frequency

Figure 4.1: Mean Number of Reported Matches



'Ger' stands for German participants; 'Jor', for Jordanian participants; 'Syr in G', for Syrian refugee participants living in Germany; 'Syr in J', for Syrian refugee participants living in Jordan; and 'Syr in Syr', for Syrian participants living in Syria. Red line indicates the expected value of one match; whiskers show the 95% confidence intervals.

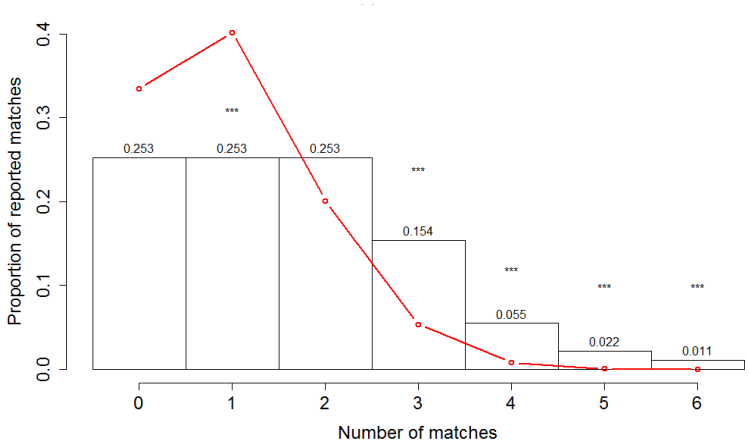
typical distribution of matches: in all samples, only a small minority of participants lies to the fullest extent possible. Rather, it seems that participants behave like 'partial liars' (Fischbacher and Föllmi-Heusi, 2013): a low number of matches (such as zero and one) is reported significantly fewer times than expected according to the binomial distribution. At the same time, there are significantly more people reporting an intermediate number of three or four matches than expected. Hence, there is little evidence suggesting that our sample differs in so far as a majority of participants exaggerates to some degree when reporting the number of matches, but not to the full extent.

A striking difference can be observed regarding the frequencies of extreme numbers of matches (five and six). Syrian refugees, in contrast to Jordanians, Germans, but also Syrians inside Syria, report an *extreme* number of matches significantly more often than the other groups. Three percent of the Germans, four percent of the

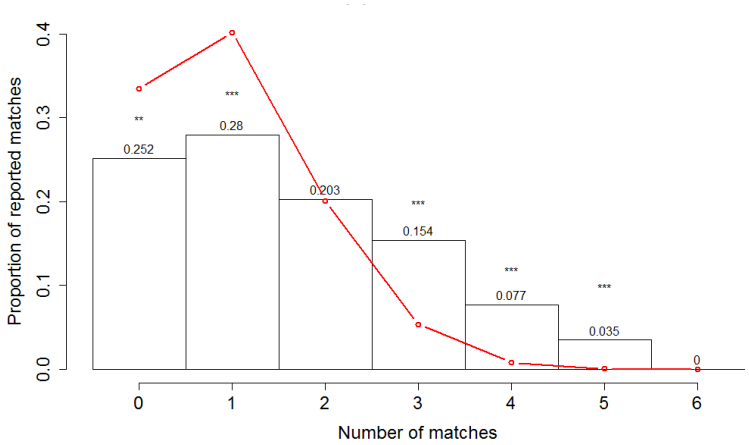
according to a binomial test; $^{**}p < 0.05, ^{***}p < 0.01$.

Jordanians, and no Syrians living in Syria report five or six matches. However, about ten percent of Syrian refugees, both in Jordan as well as in Germany reported this extremely high (and unlikely) number of matches.

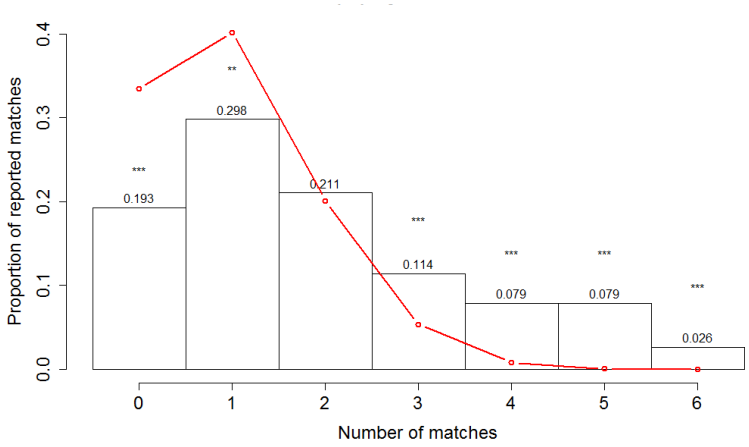
Figure 4.2: Proportion of Reported Matches



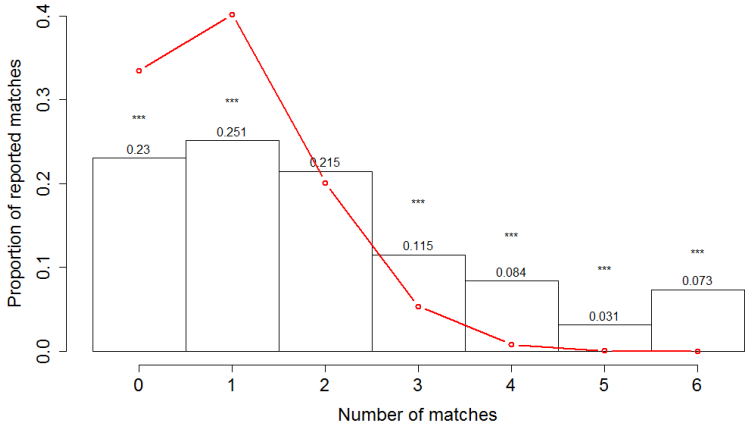
(a) German Participants



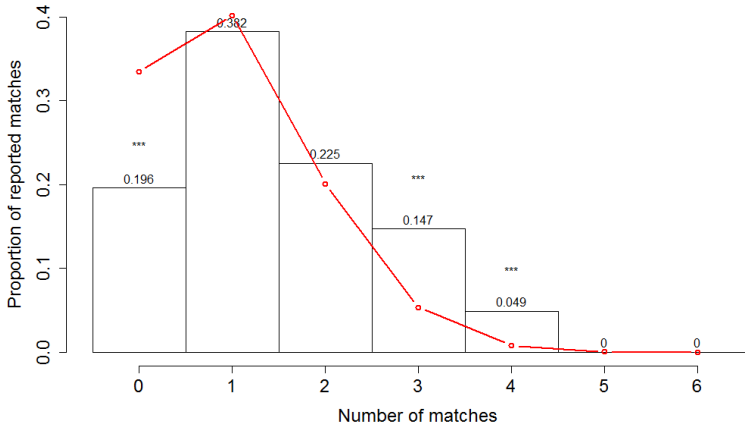
(b) Jordan Participants



(c) Syrian Refugee Participants living in Germany



(d) Syrian Refugee Participants living in Jordan



(e) Syrian Participants living in Syria

Red line indicates the expected frequency of matches; asterisks indicate significant differences between the reported frequency of matches and the expected frequency according to a binomial test; $^{**}p < 0.05$, $^{***}p < 0.01$.

In sum, our Hypothesis 1a according to which we do not expect significant differences in the number of reported matches across samples is only partially confirmed. On the one hand, taking only the average of lies into account there are no differences across samples; on the other hand, there are differences regarding the distribution of lies. We do not observe significant differences between Syrians in Syria, Jordanians, and Germans. However, Syrian refugees in both Jordan and Germany report a significantly higher number of total matches than the other three groups.

In the following, we take a closer look at instances in which participants claimed a *very high* – and very unlikely – number of matches. Table 4.2 shows the frequency of four or more reported matches across samples and results of two-sided proportionality tests indicating differences between samples.[22]

Table 4.2: Statistical Significance of the Differences between the Proportions of Participants that Report 4, 5 or 6 matches

	Syrians in Germany (0.18; N=21)	**Syrians in Jordan** (0.19; N=36)
Syrians in Syria (0.05; N=5)	0.004***	0.002***
Germans (0.09; N=8)	0.08*	0.02*
Jordanians (0.12; N=16)	0.19	0.12

Test results comparing the frequency per sample of participants reporting an extreme number of matches (four or more). Two-sided proportion test. The frequencies of reported matches are shown in parenthesis along with raw numbers of observations per subgroup.

We find that Syrian refugees both in Germany and in Jordan have a significantly higher frequency of reporting an extreme number of matches than Syrians in Syria or Germans, but not significantly higher than Jordanians. Thus, it seems that refugees are substantially more likely to report an extreme number of matches than the corresponding home-town and new-host peers. In other words, being a refugee in a new country is partly associated with a higher likelihood of reporting a highly improbable number of matches. These results offer only partial support of Hypothesis 2 which

[22] In the table, we focus on differences between refugee and non-refugee samples, all other differences are not significant according to conventional measures. Table 4.A.II in the Appendix provides a robustness check applying the same analysis to the reports of 3, 4, 5, and 6 matches. Results are qualitatively similar, however, at a much lower level of significance.

posits that everybody affected by civil war has a higher propensity to lie. It rather seems that having experienced a civil war *and* being a refugee leads participants to claim unreasonably high number of matches.

Further, the evidence reported here is not supporting Hypothesis 3 which posits that the institutional environment is an important factor determining behavior. According to that hypothesis, we would, hence, expect that Syrians in Germany would tend to lie significantly less frequently than Syrians in Jordan which is the case if we confine the analysis to extremely high number of reported matches only. Yet, given that the institutional environment in Jordan is somewhat better than that in Syria, we would expect Syrians in Jordan to lie somewhat less than Syrians in Syria which is clearly not the case.

4.4.2 Choice Patterns

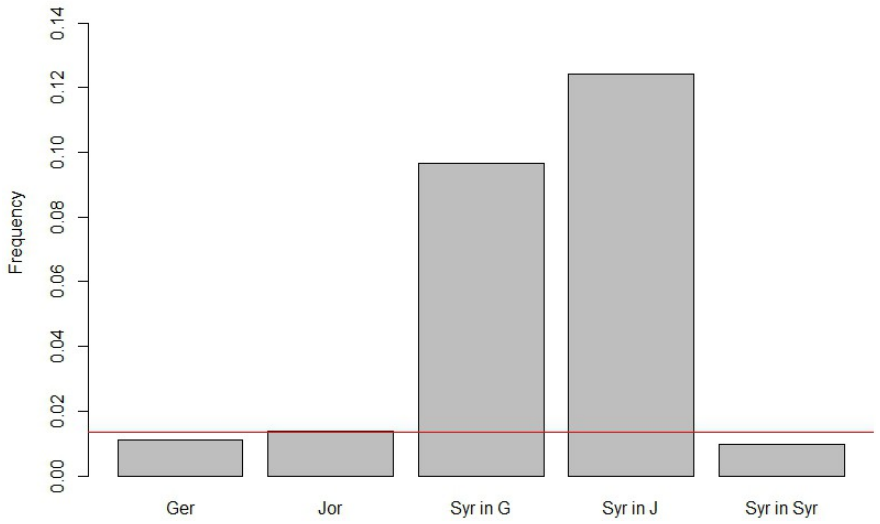
In the next step, we provide a closer look at the individual choice patterns of participants.[23] For this, we make use of the fact that participants play six rounds of the mind game. This allows us to identify patterns that are very likely to be based on lies, specifically 'no-return' patterns. Hypothesis 1b suggests that participants who have claimed a match once are more likely to keep on claiming matches in subsequent rounds. We now test that hypothesis.

Figure 4.3 shows the empirical frequencies by which we observe 'no-return' patterns in the five sub-samples (the straight red line indicates the predicted frequency). The results are not in line with hypothesis 1b according to which we would not expect significant differences in the number of matches claimed between the different groups. However, refugees follow a 'no-return' strategy far more often than their peers. That is, Syrian refugees in Germany are significantly more likely to follow this strategy

[23]For the analysis on reported matches over rounds see Figure 4.A.II in the Appendix.

than Germans and Syrians inside Syria ($p = 0.02/0.01$, 2-sample proportion test, two-sided). Likewise, Syrian refugees in Jordan are significantly more likely to follow this strategy than Jordanians and Syrians inside Syria ($p < 0.001/0.001$ 2-sample proportion test, two-sided). Furthermore, the frequency by which refugees in Germany (Jordan) report such a pattern is significantly different from the theoretically predicted one ($p < 0.001$, binomial test), whereas there are no further significant differences between other sub-samples nor are their frequencies significantly different from the theoretically predicted frequency.

Figure 4.3: Frequency of Choosing a 'No-return' Pattern by Subsamples



'Ger' stands for German participants; 'Jor', for Jordanian participants; 'Syr in G', for Syrian refugee participants living in Germany; 'Syr in J', for Syrian refugee participants living in Jordan; and 'Syr in Syr', for Syrian participants living in Syria. The red line indicates the cumulative probability of 0.0167 for all 'no-return' patterns .

Having established that the refugee sub-samples are far more likely to report an extremely high number of matches or a specific pattern, the natural follow-up question is: are there specific socioeconomic traits driving these choices? To answer this question, we rely on multivariate logit regression models on the choice patterns of refugees only (i.e., we apply the following analysis only to the refugee subsample). We test for extremely high number of matches (Model 1: *extreme*) and 'no-return'

patterns of refugees (Model 2: *no-return*) as the dependent (dummy) variables. In addition, we take a cross-sectional approach by specifically analyzing participants who do not only display a 'no-return' pattern, but also declare at least four matches (i.e., an extreme number of matches), denoted as *'extreme & no-return'*, separately (Model 3). Our independent variables include a dummy variable indicating Syrian refugees in Jordan (implying that Syrian refugees in Germany are the baseline for our estimates) and a gender dummy variable for females. Income, age groups, and level of education are divided into several binary variables. The respective baselines are *low income level*, *age 16 – 26*, and *primary and secondary education*. Distress level is measured by a continuous variable ranging from 1 to 4 and the stated importance of religion is measured on a 4 point scale from 1 ('not at all important') to 4 ('very important'). Finally, we include the variable *months* to measure the number of months a refugee had spent in Germany or Jordan at the time of the experiment. One could argue that the longer the Syrians have lived in their host countries, the more they could have adjusted their behavior to the local mores ("when in Rome do like the Romans do"). Accordingly, we would expect fewer instances of extreme lying the longer the refugees have already been in their host country (in accordance with Hypothesis 3).

Table 4.3 reports the estimates for mean marginal effects along with standard errors in parentheses. The estimated marginal effects of Model 1 show that Syrian refugees in Jordan are significantly more likely to report an extreme number of matches than Syrian refugees in Germany. We also observe a stronger likelihood for older participants to overreport. Specifically, the likelihood of reporting an extreme number of matches compared to the baseline of participants who are between 16 and 26 years old increases by 49.5 percentage points among participants who are 57 years old or older. After controlling for the different methods, coefficients show that conducting the experiment through the internet increases the likelihood of reporting a

high number of matches compared to having a lab-in-the-field session. Supposedly, this is due to a higher perception of anonymity among the participants. Regarding *no-return* (Model 2) and *extreme & no-return* (Model 3), female participants are significantly more likely to lie. Additionally, participants over the age of 57 are somewhat more likely to engage in 'no-return' patterns.

The results allow us to dive a bit deeper and inquire into the underlying factors determining such behavior. Syrian refugees in Jordan are significantly more likely than Syrians in Germany to report an extremely high number of matches. One reason behind this could be that refugees in Germany are financially far better endowed than refugees in Jordan. This finding is compatible with Hypothesis 2. The number of months spent in the host country makes participants less likely to report an extreme number of matches. This finding is in line with Hypothesis 3 although the association is only marginally significant. But there is some indirect support for it: refugees who typically have less contact with the population of the host country (women and older participants) are presumably less familiar with behavioral norms in the host country, and report choices equivalent to 'no-return' patterns. Thus, it seems likely that norm compliance of refugees undergoes a behavioral adaptation process that is partly moderated by financial considerations, and partly by unfamiliarity with the host country.

Table 4.3: Logit Regressions on possible covariates of Extreme Lying, No-return, and the Combination of Both

	Dependent variable:		
	extreme	no-return	extreme & no-return
	logit	*logit*	*logit*
	(1)	(2)	(3)
Syrians in Jordan	0.209**	0.058	0.093*
	(0.079)	(0.063)	(0.047)
Female	0.032	0.084**	0.055*
	(0.048)	(0.037)	(0.029)
Age 27 - 36	0.070	0.075	0.063
	(0.080)	(0.066)	(0.058)
Age 37 - 46	0.001	0.023	0.017
	(0.082)	(0.060)	(0.045)
Age 47 - 56	0.322**	0.167	0.147
	(0.147)	(0.132)	(0.124)
Age 57+	0.495***	0.388*	0.509**
	(0.172)	(0.212)	(0.225)
Currently Student	−0.019	−0.012	−0.010
	(0.052)	(0.034)	(0.021)
Tertiary Education	−0.042	0.022	−0.009
	(0.069)	(0.067)	(0.038)
Middle income level	−0.055	−0.016	−0.019
	(0.047)	(0.029)	(0.019)
High income level	0.006	−0.047	−0.019
	(0.051)	(0.032)	(0.022)
Distress level	−0.014	−0.000	−0.005
	(0.031)	(0.022)	(0.014)
Importance of religion	0.006	−0.035	−0.013
	(0.041)	(0.025)	(0.021)
Months	−0.005*	0.001	−0.001
	(0.003)	(0.002)	(0.001)
Lab	−0.082	0.048	0.009
	(0.065)	(0.099)	(0.057)
Online	0.162**	0.087	0.075
	(0.079)	(0.057)	(0.075)
Observations	243	243	243
Log Likelihood	−94.010	−68.611	−54.454
Akaike Inf. Crit.	220.020	169.222	140.908

Results remain stable after adding an independent dummy variable for being married. The number of observation does not sum up to 305 (total of refugee subsample) due to missing values for some of the non-mandatory questions in the survey. Standard errors are reported in parenthesis. Significance levels: *p ¡ 0.05; **p ¡ 0.01; ***p ¡ 0.001.

4.5 Conclusion

Research on the effects of experiences of violence, civil wars, and conflict on moral values and social preferences is in its infancy, and has mainly focused on survivors of war and conflict in their home country rather than on refugees. Our paper thus contributes to a new stream of literature. In this study, we focus on truth-telling as an essential social behavior that helps to build trust, lower transaction costs, and enhances the well-being of society's members. That almost all societies worldwide condemn lying (Andrighetto et al., 2016) is supported by empirical evidence (Abeler et al., 2019). Our contribution to this discussion comprises a number of observations from subjects who are affected by a transition to different societies, and who have experienced civil war and flight.

Our results indicate that refugees engage in a behavioral adaptation process when confronted with an environment that has (potentially) different behavioral norms and unfamiliar institutional settings. When compared with German and Jordanian participants, as well as Syrian participants still living inside Syria, our Syrian refugee participants have a slightly higher likelihood to report high frequencies of successes. Although overall differences fail to reach conventional significance levels, closer inspection reveals German, Jordanians, and even Syrians from inside Syria to lie 'partially' (only to an intermediate extent), while Syrian refugees are significantly more likely to lie to a full extent.

Specifically, the analysis of choice sequences indicates that the likelihood of lying increases with repetition for refugees, whereas other participants seldom display such a behavioral pattern. In other words, it seems that refugees *learn* to lie over the course of the experiment due to some reinforcement process. Reporting lies at a higher frequency is typically found among refugees who have less contact with the

population of their new host country, that is, elders and females.

It is worth repeatedly emphasizing that our results cannot be interpreted in a causal manner and not generalized beyond the current case we present at hand. As we deal with a very specific group of refugees, the results that we find in our Syrian sample cannot be extended beyond the Syrian populations to other refugees groups. The Syrian sample we present left their countries under very specific circumstances that differ even among their own. Hence, we acknowledge the possibility of the existence of self-selection among our sample, specifically when it comes to background and traits which are likely to affect behavior.

In sum, results highlight the fact that there is a universal preference for truth-telling that we all have in common. Yet, this preference can be shaped by environmental factors in the specific context of forced migration. As no causal inference is possible, no clear-cut policy implications follow from our findings. What we know is that Syrian refugees in Jordan lie more frequently than those in Germany. Further, we know that Syrians in Jordan are more likely to have a lower income level than those in Germany. A straightforward interpretation of this finding is, hence, that they misreport the number of matches because they need the money. An obvious policy implication would be that refugees should be given the possibility to be officially employed which would alleviate them of the necessity to lie. The time the refugees have spent in their respective host countries is negatively associated with the propensity to choose the 'extreme' lying pattern. One way to interpret this finding is that over time migrants adjust to the mores of the hosting country. Supposedly, adjustment will occur faster, the better integrated the refugees are into their new home societies.

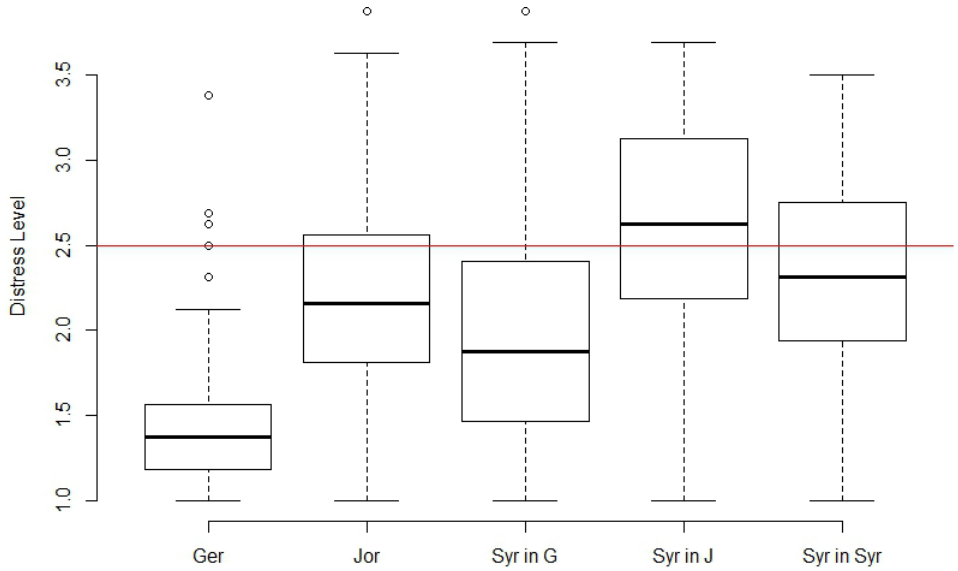
4.A Additional Statistical Analysis

4.A.I Distress Level

Figure 4.A.I box plots the distribution of distress levels across our participant groups.[24] The distribution for German participants is highly concentrated at a low median, while Jordanians and Syrian refugees (particularly those in Jordan) are severely distressed. The high proportion of Jordanians suffering from psychological distress appears in need of explanation, which is even higher than that of Syrian refugees in Germany. One possibility is that they suffer from long-term effects considering the fact that around one half of all Jordanians used to be refugees at some point in time. Another possibility could be they feel 'victimization by proxy' (sometimes this phenomenon is called 'compassion fatigue' in psychological literature, e.g., Figley 2002) because of their proximity to the civil war in Syria and frequent interactions with Syrians.

[24] We obtain the following p-values for all pairwise comparisons using subjects as independent observations; exact Wilcoxon-Mann-Whitney Test, two-sided: for Jordanians and Syrians in Syria the test yields a p-value of 0.3478; for all remaining pairwise comparisons the test yields a p-value of $p < 0.01$.

Figure 4.A.I: Distress levels by Subgroups



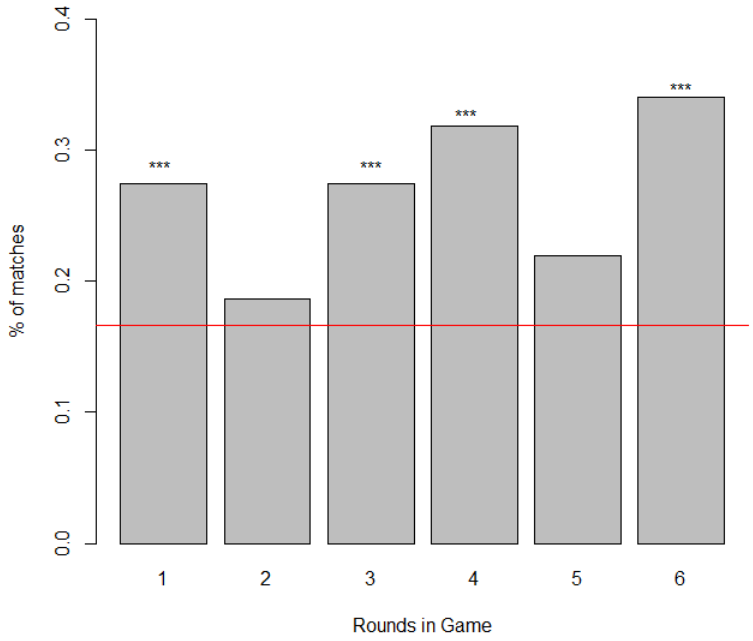
'Ger' stands for German participants; 'Jor', for Jordanian participants; 'Syr in G', for Syrian refugee participants living in Germany; 'Syr in J', for Syrian refugee participants living in Jordan; and 'Syr in Syr', for Syrian participants living in Syria. Red line indicates the distress level of 2.5 which stands for severe psychological distress.

4.A.II Reported Matches over Rounds

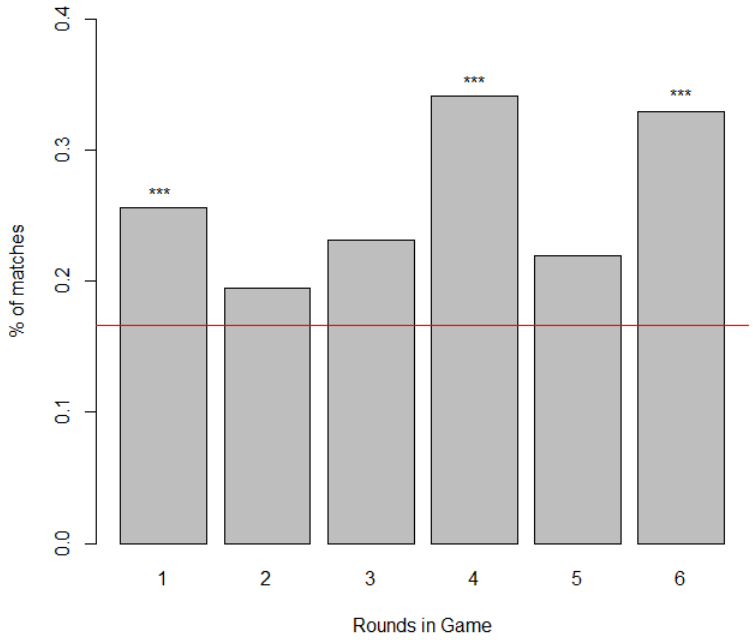
Here, we provide a closer look at the reported successes over rounds. For this, we make use of the fact that participants play six rounds of the mind game. Figure 4.A.II shows that there is a systematic difference in how the refugee sample and the non-refugee samples report successes over rounds. While the Syrian samples do not differentiate between rounds, it seems that there is a pattern over rounds for the other samples as they overreport in the first and last rounds, as well as in the middle of the game. There seems to be a tension between how participants are concerned about reputational costs and the utility gained from lying as shown among the non-refugee populations compared to the refugee ones. It seems that after having lied once, refugee participants resort to a 'no-return' pattern significantly more often than the non-refugee participants. To test this, we introduce the variable 'no-return'. However, it remains an open question how these heterogeneities among the samples

came to be in the first place.

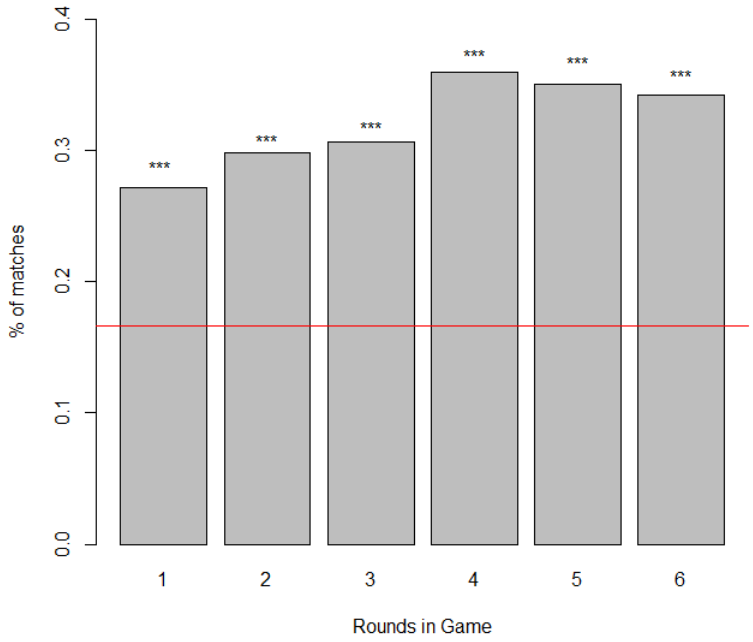
Figure 4.A.II: Proportion of Reported Matches Per Round



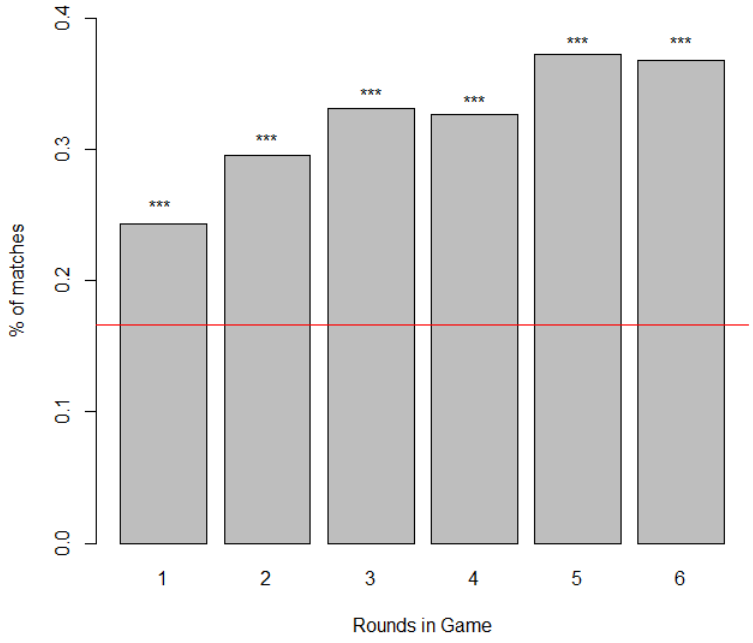
(a) German Participants



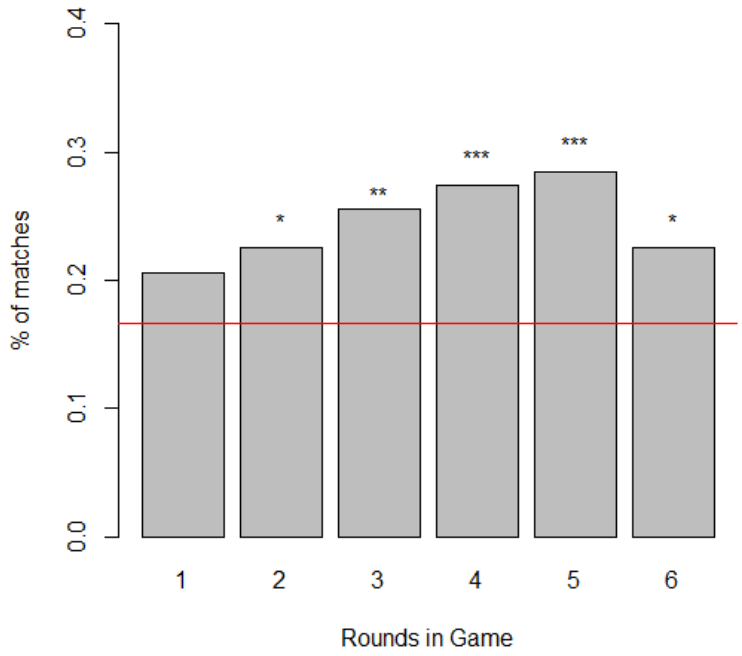
(b) Jordan Participants



(c) Syrian Refugee Participants living in Germany



(d) Syrian Refugee Participants living in Jordan



(e) Syrian Participants living in Syria

4.A.III Sociodemographic Variables

The following table shows statistical differences between sociodemographic variables of the different subgroups in this study.

Table 4.A.I: Differences on Sociodemographic Variables

Statistics	**Religion**	**Education**	**Female**	**Age**	**Income**	**Distress level**	**Distress** > 2.5	**Married**	**No. of children**
Ger vs. Syr in Ger	< 0.01	< 0.01	< 0.01	< 0.01	-	< 0.01	< 0.01	0.2745	0.01634
Jor vs. Syr in Jor	0.14	< 0.01	0.02688	< 0.01	-	< 0.01	< 0.01	< 0.01	< 0.01
Syr in Ger vs. Syr in Jor	< 0.01	< 0.01	< 0.01	0.3168	0.04537	< 0.01	< 0.01	< 0.01	< 0.01
Syr in Ger vs. Syr	< 0.01	0.04457	< 0.01	< 0.01	0.892	< 0.01	< 0.01	0.5039	0.1031
Syr in Jor vs. Syr	0.5652	< 0.01	< 0.01	< 0.01	0.01838	< 0.01	< 0.01	< 0.01	< 0.01
Ger vs. Jor	< 0.01	0.02072	0.116	< 0.01	0.04346	< 0.01	< 0.01	0.0263	0.04066

P-values comparing values using exact Wilcoxon tests (two sided.)

4.A.IV Reported Number of Matches

As an additional statistical analysis we add the differences between the proportion of participants who report 3, 4, 5 or 6 matches.

Table 4.A.II: Statistical Significance of the Differences between the Proportions of Participants who Report 3, 4, 5 or 6 matches

	Syrians in Germany (0.30; N=34)	**Syrians in Jordan** (0.30; N=58)
Syrians in Syria (0.19; N=20)	0.11	0.07^{*}
Germans (0.24; N=22)	0.46	0.38
Jordanians (0.27; N=38)	0.73	0.64

Test results comparing the frequency per sample of participants reporting 3, 4, 5 or 6 matches. Two-sided proportionality test. The frequencies of reported matches are shown in parenthesis along with raw numbers of observations per subgroup.

4.B Questionnaire for PTSD Symptoms

The questionnaire consists of questions related to PTSD symptoms that people sometimes have after experiencing hurtful or terrifying events, which we denote here as 'distress level'. In the distress part of the questionnaire, subjects could rate potential feelings of unease (e.g., 'Unable to feel emotions') on a four point scale ranging from 'not at all' to 'a little' to 'quite a bit' to 'extremely'.

The following are symptoms that people sometimes have after experiencing hurtful or terrifying events in their lives. Please read each one carefully and decide how much the symptoms bothered you in the past week.

Please choose the appropriate response for each item:

	Not at all	A little	Quite a bit	Extremely
Recurrent thoughts of memories of the most hurtful or terrifying events.				
Feeling as though the event is happening again.				
Recurrent nightmares.				
Feeling detached or withdrawn from people.				
Unable to feel emotions.				
Feeling jumpy, easily startled.				
Difficulty concentrating.				
Trouble sleeping.				
Feeling on guard.				
Feeling irritable or having outbursts of anger.				
Avoiding activities that remind you of the hurtful event.				
Inability to remember parts of the most hurtful events.				
Less interest in daily activities.				
Feeling as if you don't have a future.				
Avoiding thoughts or feelings associated with the hurtful events.				
Sudden emotional or physical reaction when reminded of the most hurtful events.				

4.C Game Instructions

Experimental Instructions (English Translation)

In this section, we ask you to think of a number between 1 and 6 (that is, 1, 2, 3, 4, 5, and 6). If you have done this please press the button 'next'. The button rolls an electronic die such that you see the outcome of the electronic die at the bottom of the page.

Please type in the number you thought of before pressing the button in the corresponding box on the next page.

- If the outcome of the electronic die corresponds with the number you thought of, you receive 50 points,
- If the outcome of the electronic die does not correspond with the number you thought of, you receive 0 points.

Please notice: You play six rounds of this game. This means that you memorize six times a number before you press the 'next' button and type the number you thought of in the corresponding box.

Now, please think of a number between 1 and 6 and click 'next'.

- Your throw of the die got the number:
- Please type in the number you thought of (please write your answer here):

Note that your answer must be between 1 and 6. Only an integer value may be entered in this field.

Chapter 5. Expect the Worst and You Will Never be Disappointed - The Effects of War Experience on Prosocial Behavior and Punishment among Syrian Refugees[1]

Abstract

In the period following war and violent conflicts, how do individuals succeed in living together as part of a functioning society again? We ask whether the experience of war affects prosocial behavior and peer punishment among refugees incorporating elicited beliefs to the analysis. We conduct two one-shot experiments with Syrians living in Jordan, namely a dictator game and a prisoners' dilemma game with a subsequent peer punishment stage. We first find that war victimization is associated with neither altruism nor cooperation, while cooperation does coincide with participants' social preferences for altruism. Second, victimization is associated with antisocial punishment among Syrian cooperators, but not Syrian defectors. Taking beliefs into account, victimized participants display antisocial punishment provided that they themselves are cooperators who hold negative beliefs about the cooperation behavior of others. This last exploratory finding shows that the threshold of antisocial punishment is decreased by victimization especially when cooperators expect the worst, and hence the experience of war negatively affects how peer punishment enforces social norms.

Keywords: Civil war, cooperation, altruism, victimization, first-order beliefs, antisocial punishment, refugees.

JEL Codes: C91, 015, N45, D64, A13, H41, J15.

[1]This chapter is co-authored by Nora El-Bialy, Lamis Saleh, and Stefan Voigt.

5.1 Introduction

Currently, there is an estimated 5.6 million Syrian refugees and another 6.2 million internally displaced Syrians (Council on Foreign Relations, 2021). They suffer from the war experience and its consequences in a myriad of ways. And Syria is just one among many contemporary war or civil war zones worldwide like Libya, Afghanistan, and Colombia. In all likelihood, the civil war will be followed by years of instability (Council on Foreign Relations, 2021). However, flight does not only have lasting effects on the economy and social relations for the country of origin but also for the host countries (Salehyan, 2007). Interview data from Syrians collected between 2008 and 2015 by the Gallup World Poll show that in a global perspective, Syrians' physical, mental, and social well-being have declined substantially since the beginning of the civil war. The experience of civil war has long-lasting consequences not only for individual well-being narrowly conceived but also for social behavior (Colletta and Cullen, 2000; Blattman, 2009; Gneezy and Fessler, 2012; Voors et al., 2012; Bauer et al., 2014; El-Bialy et al., 2020).

Regardless of who is winning and who is losing, the ending of a civil war marks the beginning of a cumbersome process of rebuilding an entire country not only in terms of physical infrastructure but also in terms of building peace between the previously warrying factions. For this, it seems of pivotal importance to understand how the experience of war and flight affects the (re)establishment of social norms. Can individuals manage to organize cooperation within their society again? How do they react to norm violations? And how do they apply enforcement mechanisms in the case of a conflict between members of society? The civil war that has been ongoing in Syria constitutes the best-known current case in which this question looms large. This is the main motivation for the naturalistic setting of this study among Syrian refugees who live in Jordan. Studying the interplay between social cohesion and

social conflict within the context of voluntary cooperation among society members burdened with real war experience provides important answers to those questions. Notice that analyzing those questions bears an important challenge: the experience of war may affect behavior in two ways. It may alter the relevance that people attach to such social norms as mutual cooperativeness or prosociality. It may also influence the expectations regarding the behavior of others. As such, it may cause - potentially even despite pronounced individual concerns for cooperation - punishment that backfires and harms cooperators. In other words, peer punishment may prevent societies from relying on cooperation-inducing norm (Ostrom, 1990).

While there is evidence in earlier studies demonstrating that war victimization of Syrian civilians coincides with unusual punishment schemes – war victims who live in Syria punish regardless of the strategy of the other participant in a prisoners' dilemma game with a punishment stage (El-Bialy et al., 2020) – there has been no attempt so far to disentangle behavior from beliefs. Likewise, there are several cross-cultural studies emphasizing the differences in punishment found all over the globe including a non-negligible fraction of punishment of cooperators (so called 'antisocial' or perverse punishment (Herrmann et al., 2008; Balliet and Van Lange, 2013). Yet, it remains unclear whether this behavior is primarily related to a distortion of preferences or beliefs.

To answer these questions, we conduct a two-stage experimental design. Both stages consist of one-shot experiments with no feedback information on the choices of other participants. In the first stage, participants play a dictator game. In the second stage, they participate in a prisoners' dilemma with a subsequent peer punishment stage and belief elicitation. Overall, 384 Syrian refugees who were living in Jordan at the time of the experiment (and also 82 Jordanians as a benchmark as well as interacting partner for the treatment scenario) participated. We measure two

forms of prosocial behavior along one form of (first-order) beliefs: altruism through participants' choices in the dictator game and cooperation through participants' choice in the prisoners' dilemma game, and beliefs regarding the cooperativeness of the other player. To quantify their level of war exposure, we create a victimization index that accounts for personal war experiences.

Our main finding (also the most exploratory one) shows that cooperating despite expecting the worst (participants believe that others will not cooperate) frequently coincides with antisocial punishment and war victimization, and, hence, peer punishment as a norm enforcement mechanism is hindered. Second, victimization does not coincide with particularly strong altruism nor cooperative behavior (nor with the specific form of elicited beliefs). These findings suggest that prosocial behavior and punishment may underlie different mechanisms regarding the effects of war on behavior: whereas victimization does not coincide with prosocial behavior or with social preferences or with the beliefs of other's behavior, it does coincide with the way participants decide to punish.

As such, our findings add value-added on three dimensions. First, to the literature on post-conflict societies and prosocial behavior, we add the beliefs that people hold about other people's cooperative behavior. By taking the beliefs into consideration, we add a new dimension that potentially affects the way victimization from war triggers specific behavior. Second, our analysis relies on a unique participant pool. It is one of the very few studies conducted while the war is still ongoing. Third, our participant pool is noteworthy as our participants are all non-WEIRD (Henrich et al., 2010) and hence, we are able to analyze possible covariates of antisocial punishment in a population that is not typically the focus of research.[2]

[2]Henrich et al. (2010) argue that the fact that the main body of research is conducted with western, educated, industrialized, rich, and democratic (WEIRD) participants posits a challenge for the understanding of human behavior and psychology as most people in the world are not WEIRD.

The current paper is structured in the following order. Section two is dedicated to the literature review summarizing previous findings on the relevance of beliefs for behavior, as well as the effects of war on behavior and punishment. In section three, we present our hypotheses. Section four describes our participant sample, how we recruited them and their characteristics. The experimental design is explained in section five. Finally, the results are presented in section six. Section seven is dedicated to the discussion of the most exploratory results. Section eight concludes.

5.2 Literature Review

5.2.1 Behavior and Beliefs

Social preferences are an important factor in people's mindset. Among others, they influence the likelihood to overcome social dilemmas. Social preferences are not only at the heart of decision-making, but also beliefs. Both preferences and beliefs are particularly important for decisions in which individual and collective interests are at odds, that is, if individuals have collectively 'good reasons' to cooperate, but a material incentive to defect and to free-ride on others. The choice to defect may be motivated by pure self-interest, but, when players have preferences for conditional cooperation (Fischbacher et al., 2001; Fischbacher and Gachter, 2010), it may also reflect pessimistic beliefs regarding their peers' cooperativeness (Kocher et al., 2015; Chaudhuri et al., 2017). There is even evidence that the expectation and the continuous experience of peer defection undermines the conditional cooperative preferences of players over time (Andreozzi et al., 2020).

In the latter case, the altruistic punishment of defectors, that is, the costly act of decreasing the payoff of those who contribute less than the punisher himself without a direct increase of the overall material payoff, is a key element for sustaining

cooperation. This has been shown even in scenarios in which participants only meet once that rule out any possible motive concerning their reputation in front of others that could affect future interactions (Fehr and Gächter, 2002).

However, allowing for peer punishment incurs also the possibility of antisocial punishment which is broadly defined as the punishment of others who contribute to the welfare of a group.[3] This has motivated researchers to analyze the whole broad spectrum of punishment behavior (Cinyabuguma et al., 2006; Herrmann et al., 2008; Gächter and Herrmann, 2009; Rand et al., 2010; Abbink and Herrmann, 2011; Bruhin et al., 2020). With the introduction of all possible punishment options (punishment of cooperators and defectors), we can study the link between prosocial behavior, expectations, and peer sanctioning mechanisms among subjects who have experienced different forms of violence, such as the abuse of power and punishment, in an indiscriminate way during the civil war in Syria.

[3] Antisocial punishment has been described in slightly different ways in the literature: the punishment of cooperators by defectors (Herrmann et al., 2008), the punishment of cooperators who contribute the same amount to a one-shot public goods game or more than the punisher herelf (Gächter and Herrmann, 2009), the punishment of cooperators by both defectors and cooperators (Rand et al., 2010), the willingness to pay a cost to punish those who benefit the group (Sylwester et al., 2013). Moreover, perverse punishment has been coined as the punishment of below average contributors by players who also contribute less than average (Cinyabuguma et al., 2006), whereas spiteful punishers (being the punisher himself a defector or a cooperators) have been described as those who punish irrespectively of the strategy of the other participant, namely both defectors and cooperators (Rand et al., 2010).

5.2.2 Behavior and Social Conflict

Existing studies on the effects of civil war on social behavior deliver mixed results. On the one hand, civil war may reduce social cohesion because victimized individuals are theoretically expected to update their beliefs that others cannot be trusted. This can be measured by the decline of interpersonal and community trust (Walter et al., 1999; Collier et al., 2003). Collier et al. (2003) argue that post-conflict communities face a severe problem as individuals who have experienced violent conflict tend to mistrust each other which undermines collective action and can lead to what they call a 'conflict and development trap'. This conflict trap implies that there is a higher risk of future conflict after an on-going conflict has ended.

On the other hand, the experience of violence during war has been shown to positively influence deep-rooted behavioral traits central to decision-making in social interactions. For this purpose, the experience of war has been quantified to create an individual victimization index that mirrors personal war experience. Voors et al. (2012) demonstrate that participants with higher victimization indices also show higher acceptance of risk, levels of altruistic giving, and higher discount rates in Burundi. Similar evidence was found in Nepal by Gilligan et al. (2014): communities affected by violence show higher levels of prosocial behavior (i.e. altruistic giving, contributions to public goods, trust, and trustworthiness) than those less affected by violence. Furthermore, both in Sierra Leone and Georgia, Bauer et al. (2014) study the effect of war-related violence on prosocial behavior dependent on group membership. Their results go along the same lines: severe victimization increases individual's egalitarian motivations when facing an individual from the same village (in-group) compared to one from another village (out-group). Gneezy and Fessler (2012) show that the behavior of Israeli citizens changes during wartime compared to peacetime. During the 2006 Israel-Hezbollah conflict, participants were more likely

to reciprocate an unkind act with unkindness and a kind act with kindness both stemming from an in-group member during a war period compared to peacetime.

Violent conflict is commonplace among humans. Despite all its negative consequences, it seems that intensified prosocial behavior is a result of conflict and plays an important role for the reconciliation of war-torn societies. The idea that ultimate good can originate from pronounced suffering is not a new one; at the individual level, the experience of flight can result in positive psychological change. Tedeschi and Calhoun (2004) coined the term 'post-traumatic growth' as the psychological mechanism behind the link of life-threatening experiences and a positive psychological change: individuals who have survived traumatic events may experience a higher gratefulness for life, altered priorities, and have more significant interpersonal relationships, among others (ibid.). In a similar way, wartime violence may affect behaviour positively, perhaps by modifying tendencies for social preferences that take the welfare of others into account or by altering beliefs (Blattman, 2009; Gneezy and Fessler, 2012; Voors et al., 2012; Bauer et al., 2014).

However, it is not clear how these war effects can be extrapolated for a population that has been forcibly displaced. Syrian refugees who have fled the war do not form part of a post-conflict society that faces the necessity of reconciliation. Moreover, they left Syria under very specific circumstances that differ even among their own. Hence, self-selection into asylum is a concern for research. Results from our previous study with Syrian participants living in Syria add to this conundrum: although severely victimized participants show higher levels of trust, they also tend to cooperate less in a prisoners' dilemma with subsequent peer punishment (El-Bialy et al., 2020).

Despite the evidence on the influence of specific conflicts on cooperativeness, antisocial punishment does not prevail in cross-country studies (Herrmann et al., 2008).

Rather, antisocial punishment coincides with environments where law enforcement is weak (e.g. places in which norms are often violated and legal sanctions are not reliably implemented), as well as societies with high levels of inequality (Sylwester et al., 2013). In turn, peer punishment promotes cooperation in societies with high levels of trust among strangers in comparisons to those societies in which family ties are strong (see, e.g., the meta-study by Balliet and Van Lange, 2013, with 83 studies across 18 societies).

Finally, in a previous study (El-Bialy et al., 2020) we found that severely victimized participants punish whenever possible, not distinguishing between their opponent's decisions. Thus, the experience of extreme violence deteriorates the appropriate use of sanctioning mechanisms. All of these results – both the deterioration of social cohesion and its recovery, as well as the devaluation of adequate punishment schemes through war experience – may be occurring at once, and, hence, the net effect of conflict on prosocial behavior and its reinforcement remains as an empirical question which motivates this study.

5.3 Hypotheses

Eliciting beliefs can decrease the amount of unobservable information in experimental research as using choice data alone to infer decision rules is problematic and may lead to wrong conclusions (Schotter and Trevino, 2014). For instance, Manski (2004) shows that proposers in an ultimatum game can make equal offers that are driven by very different combinations of preferences and beliefs. Therefore, we rely on participants' elicited beliefs as an additional element to the analysis. Likewise, there is evidence questioning whether behavior depends on beliefs. Overall, Smith (2013) finds empirical evidence supporting the conjecture that beliefs are endogenous to behavior. Yet, it could also be the case that participants show consensus bias and

hence think that others behave as they do (Engelmann and Strobel, 2007). Following these lines of thought in the literature, we test the very fundamental premise that our participants exhibit consistent beliefs and behavior; that is,

Hypothesis 1: Cooperators believe that other participants will also cooperate and defectors believe that other participants will also defect.

Regarding the effects of war on beliefs the formulation of a hypothesis is challenging. On the one hand, there is already experimental evidence suggesting that intense war experience boosts cooperation among refugees (e.g., Voors et al., 2012). However, this finding refers only to the observed choice and does not disentangle beliefs and tastes. Moreover, unlike earlier studies, we introduce a setting with peer punishment. For this type of games, our own research shows deterioration of cooperation once punishment opportunities are provided (El-Bialy et al., 2020). Yet again, we did not elicit beliefs, so that we could not differentiate between tastes for cooperativeness and expectations.

With regards to expectations, it could be that victimized individuals update their beliefs now believing that others cannot be trusted, as measured, for instance, by a decline of interpersonal and community trust (Walter et al., 1999; Collier et al., 2003). Following this line of argumentation, we would expect that participants with intense war experience have low expectations concerning others' cooperativeness. Despite potential positive effects of war experience concerning prosociality (e.g., Voors et al., 2012), it could be that participants update their beliefs that others cannot be trusted based on their negative experiences during war. This leads to our second Hypothesis:

Hypothesis 2: Victimization by war coincides with lower beliefs about other participants' cooperation.

One struggling observation in this context is antisocial punishment (Herrmann et al., 2008). Far away from being an irrational behavior, antisocial punishment is mainly aimed at decreasing other participants' payoff. By punishing cooperators, individuals may gain an advantageous inequality over others: Masclet et al. (2003) show that in the absence of a monetary punishment option, antisocial punishment decreases significantly compared to a scenario with a monetary punishment option. Along this line, Rand and Nowak (2011) find that antisocial punishment is a selfish motivated strategy. Participants use this strategy to gain strategic advantages and to protect themselves from potential competitors.[4] We assume that strategic considerations like being ahead of others are of major importance in war times and an important asset in the fight for survival. Therefore, we test whether preferences for antisocial punishment coincide with war experience:

Hypothesis 3: Antisocial punishment coincides with stronger victimization by war.

[4]It seems that antisocial punishment follows a rationale when we consider the relative payoff instead of the absolute one (Sylwester et al., 2013).

5.4 Experimental Procedure, Participants' Characteristics, and Victimization Index

The games analyzed in this paper are part of a larger study that comprised four other games.[5] All games were played by the participants in the same order by beginning with the dictator game in order to elicit social preferences and due to the simplicity of the choices, followed by more strategic games. The instructions were in Arabic. After completing the games, participants filled in a post-experiment survey including questions regarding their sociodemographic background, questions related to post-traumatic-stress-disorder (PTSD) symptoms of an abbreviated version of the Harvard Trauma Questionnaire containing items such as 'unable to feel emotions' that people sometimes experience after going through terrifying events (which we denote here as 'distress level'), and an extra chapter on the experiences related to war for the Syrian participants. In the distress part of the questionnaire, participants rate potential feelings of unease on a four point scale ranging from 1 'not at all' to 4 'extremely'. Participants could earn points during the games that were exchanged at the end of the experiments for real money. Payoffs were calculated by randomly matching participants at the end of the experiment without giving any feedback on other participants' choices. The payoff was handed out anonymously in envelopes based on personal codes for each participant. The average payoff was 9 Jordanian Dinars (equivalent to $12.70 at the time of the experiments).

By bringing devices to the field in order to study a non-student and non-weird population, our study is a lab-in-the field study. The sessions lasted an hour on average and were conducted in November 2018 in Jordan using tablets as devices. The study was conducted in several locations in the northern part of Jordan: in the Zaatari

[5]The other games measured reciprocity, trust, honesty, and time preferences. The study was conducted with Limesurvey. The open-source statistical software R was used for the analysis.

Refugee Camp in Mafraq and in buildings from several nongovernmental organisations (NGO) also located in Mafraq. NGO collaborators agreed to randomly invite Syrian refugees and Jordanians to participate in an academic study. Participants were informed orally or via electronic messages with the specific dates for the study. Two NGO collaborators were trained by our research team on the methods of our survey, who in turn also trained several survey assistants who supported us with logistical matters during the implementation of the study on site.

384 Syrians and 82 Jordanians participated in our study. Their sociodemographic characteristics are documented in Table 5.1. Around 50% of our participants are female. The average participant is around 30 years old and has 2.7 children, her highest degree of education is a high school degree, she belongs to the middle income level, and religion is extremely important to her. The distress level of our participants is on average 2.164 (conventionally, a level above 2.5 is considered as indicating that a person is in distress). To quantify the war experience of our participants, we construct an individual victimization index following the approaches of Bellows and Miguel (2009) and Voors et al. (2012).[6] Our index for victimization is constructed as an additive scale of experiences during war (coded as dummy variables) ranging from 0 to 5. We focus on five aspects: (1) loss of family members, (2) injured family members, (3) separation from nuclear family members, (4) economic loss, and (5) debt due to flight to Jordan. The mean is 1.7 with a standard deviation of 1.1, while the median is 2. We implement a median split in order to avoid any arbitrary classification of different victimization levels. That is, 47% of the Syrian sample scores either a 0 or a 1 (mildly victimized) and 53% of Syrians have at least

[6] Bellows and Miguel (2009) construct an index based on three measures, namely, family members killed, family members injured, and becoming a refugee because of the war. Voors et al. (2012) base their index on five measures, namely, rape, theft, forced labor, torture, and ambushes. Our index consists of five measures including both family threatening experiences and financial losses. We intentionally did not add personal questions about rape, ambushes, torture and forced labor to avoid re-traumatizing our participants.

a 2 (severely victimized).[7]

Table 5.1: Descriptive Statistics of Syrian Refugee Participants

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Age	384	31.148	11.144	16.000	22.000	39.000	80.000
Female	384	0.490	0.501	0	0	1	1
No. of children	366	2.749	2.744	0.000	0.000	4.000	15.000
Education	368	3.038	0.933	1.000	2.000	3.000	6.000
Income	378	2.820	1.295	1.000	2.000	4.000	5.000
Distress level	382	2.164	0.533	1.000	1.875	2.500	4.000
Importance of religion	381	3.906	0.310	2.000	4.000	4.000	4.000
Family loss	384	0.292	0.455	0	0	1	1
Family injured	386	0.220	0.415	0	0	0	1
Nuclear family member in Syria	387	0.646	0.479	0	0	1	1
Economic loss	378	0.180	0.385	0	0	0	1
Debt	380	0.368	0.483	0	0	1	1
Severely victimized	371	0.534	0.500	0	0	1	1
Victimization index	371	1.693	1.106	0.000	1.000	2.000	5.000

'Age' is a continuous variable from 16 to 80 years old. 'Female' is a dummy variable describing the gender of the participants. 'No. of children' is a continuous variable which denotes the number of children that participants have. 'Education' is a categorical variable describing participants' highest degree of education with the following answers: 1="read and write"; 2="primary school degree"; 3="high school degree"; 4="currently in university education"; 5="university degree"; 6="post-graduate degree". 'Income' is a categorical variable that describes participants' current income level ranging from the lowest 1 to the highest 5. The variable 'distress level' is categorical with levels that range from 1="not at all" to 4="extremely". 'Importance of religion' is a categorical variable ranging from 1="very important" to 4="not important at all". 'Family loss', 'family injured', 'nuclear family member in Syria, 'economic loss', and 'debt' are dummy variables. 'Severely victimized is a dummy variable for participants who have a victimization index of 2 or higher. Finally, 'victimization index' is our measure for war victimization that ranges from 0 to 5. Differences in number of observations denote missing values for the respective variables.

5.5 The Games

To measure altruism, we use a canonical dictator game (DG). In the game, each player has to make eight choices as the dictator between two payoff options. The complete payoff scheme is summarized in Table 5.2. Participants have to choose between Option X and Option Y. The first number stands for the number of points the dictator allocates to himself, while the second number denotes the points that

[7]Severe victimization and the distress level are significantly and positively correlated (ρ = 0.1327; p-value = 0.011), which highlights the psychological impact of being victimized by war. There is no significant correlation between a specific home city and severe victimization meaning that war victimization does not depend on the city of origin and all participants were similarly likely to be victimized by war when taking the home city into account (for Homs: ρ = 0.0351; p-value = 0.4992; for Daraa: ρ = -0.0497; p-value = 0.3397; for Damascus: ρ = 0.0086; p-value = 0.8681; for Aleppo: ρ = 0.0241;p-value = 0.644).

the recipient receives. In the first scenario, the dictator chooses between 180 points for himself and 180 points for the other participant (Option X) and 230 points to himself and 130 points to the other participant (Option Y). Options X and Y are varied such that X is always more altruistic than Y as it yields a higher payoff for the recipient at a cost for the dictator. The more altruistic option is also the more equal split (namely no difference in payouts rather than 100, 180, or 280). In options 1 to 3 (bloc 1) the total sum to be allocated equals 360 points for all Options X and Y, while in options 4 to 6 (bloc 2) the total sum to be allocated equals 300. By keeping the total amount constant throughout blocs 1 and 2, we avoid a scenario in which preferences for efficiency could collide with individual preferences for altruism. In Option 7, the altruistic option also allows for maximizing the total amount to be distributed, while in Option 8, it is the egoistic option that maximizes the total amount of points.[8] Throughout the paper we refer to altruistic participants if and only if they are consistent with their altruistic choice in every scenario of both blocs, that is, always choosing X over Y. After all participants have made their choices, they are randomly and anonymously matched with another player and assigned the role of either the dictator or the recipient without receiving feedback on the outcome. Only one randomly determined choice out of the total of eight payoff options becomes relevant for the payoff.

[8]Options 7 and 8 take inequality concerns into account and are not the focus of this paper. With these last options we are able to disentangle between participants who are altruistic but predominantly inequality concerned (when participants choose Option X in scenario 1 but then Option Y in scenario 8) and those who are egoistic but predominantly inequality concerned (when participants choose Option Y in scenario 1 but then Option X in scenario 7).

Table 5.2: Payoff Schemes of the Dictator Games

Scenario	**Option X_i**	**Option Y_i**
1	180/180	230/130
2	180/180	270/90
3	180/180	320/40
4	150/150	200/100
5	150/150	240/60
6	150/150	290/10
7	180/180	230/100
8	180/180	230/160

To measure cooperation with a second punishment stage, we use a one-shot prisoners' dilemma (PD). The payoff scheme is depicted in Figure 5.1. The dilemma emerges because a participant who defects while the other participant cooperates receives the highest payoff (170 points for defecting). The second highest payoff is given when both participants cooperate (140 points for each), however when one participant cooperates and the other defects, the cooperator receives the so-called 'sucker's payoff' (50 points), and hence, there is always an individual incentive to defect. Mutual implementation of the strategy to defect leads to a distribution of 80 points for each. In other words, the dominant strategy is to defect which leads to the Nash-equilibrium in which both participants are defectors. This equilibrium is not efficient since both would have been better off by cooperating.

Figure 5.1: Payoff Schemes of the Prisoners' Dilemma

		Player Two	
		Cooperate	Defect
Player One	Cooperate	140,140	50,170
	Defect	170,50	80,80*

Number left (right) of comma refers to Player One's (Two's) payoff. * indicates the equilibrium.

Immediately after participants made their choices, we elicited their first-order beliefs.

Since there is no feedback about the other participant's choices, we move to the punishment stage in which we elicit punishment behavior with the strategy method such that participants have to answer how they would punish when facing both a cooperator and a defector. Like this, we elicit all possible punishment strategies. There is no possibility here for revenge or for self-image motivations since the game will not be played again. Additionally, as there is no feedback, punishment in form of retaliation can only be blind since participants are not informed of the punishment that the other participant chooses. The cost for punishment is 10 points and those being punished suffer a loss of 40 points. This implies a price-to-impact ratio of 1/4. Here again, after all participants have made their choices, they are randomly and anonymously matched with another without receiving feedback on the outcome.

Finally, following empirical evidence from studies conducted not only with post-war societies but also during a period of war (Gneezy and Fessler, 2012; Bauer et al., 2014), we have introduced the treatment manipulation of the effect of the partner in the games to additionally test in-group dynamics on prosocial behavior as a robustness check.[9] Syrian participants interacted either with another Syrian or a Jordanian. The study design allows us to analyze altruism, cooperation, and punishment shown by the same participant in the same in-group and out-group conditions.

[9]There is an evolutionary approach to the possible effects that war can have on social behavior which creates a link between external threats and prosocial behavior and it highlights the importance of group cooperation to survive against external conflicts. Throughout human history, special aspects of prosocial behavior have very likely been shaped by intergroup conflict as it may have increased cooperation with members of the same group for the survival of the same (Choi and Bowles, 2007). More precisely, the scholars suggest that mainly during the Pleistocene and due to the extreme competition for resources, prosocial motivations towards the in-group in combination with parochialism - hostility towards individuals of another group - might have been evolutionary dominant. They explain this by the fact that groups with parochial altruists might have benefited from the willingness of some individuals to participate in hostile encounters with members of external groups in order to help fellow group members.

5.6 Results

The 'red thread' of this section slowly builds up to our most puzzling result that is responsible for the study's title. For this purpose, we start with the analysis of prosociality according to nationality and victimization, before adding it to the following analyses. Then, we continue with the analysis of cooperation and of the beliefs of cooperation also according to nationality and victimization. Finally, we present results on punishment and victimization taking into consideration the behavior and beliefs analyzed previously.

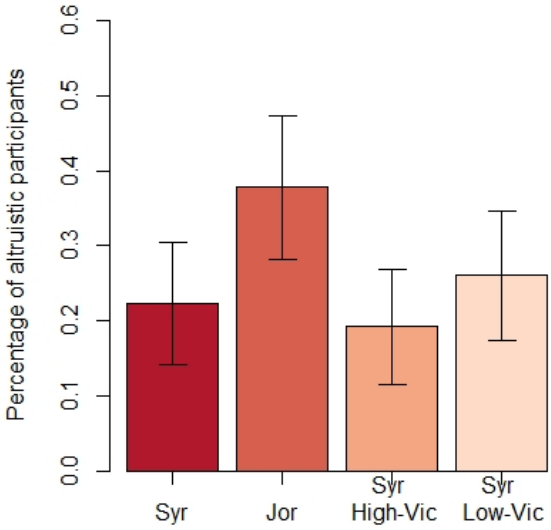
5.6.1 Prosociality

We begin with the degree of prosociality that participants reveal by their DG choices. Figure 5.2 shows altruism first according to nationality (Syrians and Jordanians) and then according to the level of victimization among the Syrian participants (severely victimized: 'Syr High-Vic' versus mildly victimized: 'Syr Low-Vic').[10] As mentioned above, our measure for altruism is quite conservative due to the fact that we only code someone as altruistic who consistently chooses the altruistic option throughout all six scenarios in the DG. In sum, Syrians are less altruistic than Jordanians (22.22% vs. 37.8%; Wilcoxon rank sum test, p-value = 0.0031). Furthermore, victimization does not correlate with altruism: 19.19% of Syrians who are severely victimized are altruists compared to 26.01% among the mildly victimized Syrians (Wilcoxon rank sum test, $p - value = 0.1164$). These results suggest that there is no correlation between altruism and war victimization in our setting.

To further statistically test whether victimization affects altruism we regress altruism on victimization in a probit regression model (Table 5.3). We find no robust

[10]For a robustness check on the effect of the partner see Figure 5.B.III and Table 5.B.I in the Appendix. In sum, there is no significant treatment effect among Syrians.

Figure 5.2: Distribution of Altruism According to Nationality and Victimization



evidence of an effect of victimization on altruism; hence, victimization appears to be orthogonal to prosocial behavior. Rather than contradicting previous results on the positive effects of war on prosocial behavior (Blattman, 2009; Gneezy and Fessler, 2012; Voors et al., 2012; Bauer et al., 2014), this study offers complementary insights. We consider our study rather as a complementary insight, since most of the literature on war and behavior is based on a population who lives in a post-conflict country, while in our study we concentrate on a population forcibly displaced across borders while the conflict is still ongoing. Thus, it could be the case that we are dealing with a different population compared to those individuals who decided to stay in Syria due to some kind of purging mechanism as presented by Gilligan et al. (2014). Following these scholars, a given society as a whole could change when there is a purging mechanism by which individuals who are less prosocial are more likely to decide to flee a war-torn country. This suggestion could explain why victimization is not correlated with altruism among refugees as less altruistic individuals could have left Syria resulting from this social purging mechanism. The only variable in the model that is significant at the 5% level is our dummy variable denoting the

females in our sample that is negatively and significantly correlated with altruism. Being a female is associated with a lower likelihood of choosing the altruistic option six times in a row of 14 percentage points.[11] Finally, both education and income are marginally and positively correlated with altruism.

Table 5.3: Average Marginal Effects of a Probit Regression on Altruism and War Victimization Controlling for Treatment and Sociodemographic Variables

	Dependent variable:	
	Altruism	
	probit	
	(1)	(2)
Victimization index	−0.04 (0.02)	−0.02 (0.02)
Treatment with Jordanian	−0.06 (0.04)	−0.06 (0.05)
Age		0.00 (0.00)
Female		−0.14** (0.05)
No. of children		0.00 (0.01)
Education		0.05* (0.02)
Income		0.04* (0.02)
Distress level		−0.02 (0.04)
Observations	371	341
Log Likelihood	−194.25	−168.47
Akaike Inf. Crit.	394.50	354.94

Note: The different number of observations is due to the fact that the *Victimization index* variable contains 16 missing observations and the sociodemographics the remaining 30 missings as all questions in the post-experimental survey were not mandatory. Asterisks denote the following significant levels: *p<0.1; **p<0.05; ***p<0.01. Standard errors are between parentheses.

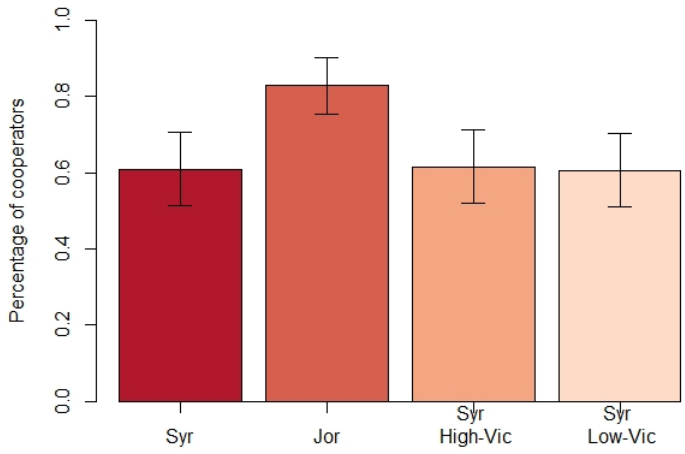
5.6.2 Cooperation

Figure 5.3 shows results for cooperation based on the decision to cooperate in the PD game taking into account the nationality of the participants and the level of war vic-

[11] This gender effect on altruism is in line with (Andreoni and Vesterlund, 2001) who show that females are more likely to be altruistic in an egalitarian way, while men are more likely to be either very altruistic or very egoistic.

timization among the Syrian participants.[12] There is less cooperation among Syrians than among Jordanians: 60.1% of Syrian participants are cooperators compared to 82.93% of Jordanian participants (Wilcoxon rank sum test, $p - value = 0.00016$).[13] Moreover, there is no significant difference between Syrians who are severely victimized ('Syr High-Vic') and those who are mildly victimized ('Syr Low-Vic') (61.62% vs. 60.69%; Wilcoxon rank sum test, p-value = 0.8563). In sum, we find no correlation between war victimization and cooperation among Syrian participants, excluding possible issues of self-selection into victimization due to a preference for cooperation.

Figure 5.3: Distribution of Cooperation According to Nationality and Victimization



Next, we regress cooperation on altruism and victimization controlling for sociodemographics (Table 5.4). Based on our Syrian participants only, we find that altruistic

[12] For a robustness check on the effect of the partner see Figure 5.B.I in the Appendix. In sum, there is no significant treatment effect among Syrians.

[13] One possible explanation for this difference could be the fact that there is a statistically significant difference between the levels of generalized mistrust among Syrians and Jordanians as elicited in the post-experimental questionnaire. 26.10% of Syrians state that "you almost can't be too careful in dealing with people" compared to 10.99% of Jordanians who do so (Wilcoxon rank sum test, $p - value = 0.0034$). Another further explanation could be given by the fact that Jordanians only faced a Syrian partner in their treatment scenario, hence a Jordanian partner is missing that could have lowered the average of cooperation if they were to favor Syrians, yet one could also imagine in-group favoritism among Jordanians that would have increased overall cooperation levels.

Syrians are also more likely to cooperate in the PD game. Altruism is thus positively and significantly associated with cooperation. There is no significant effect of either war victimization or the treatment scenario on cooperation. Once more we find that victimization and prosocial behavior (here cooperation) do not coincide. War victimization appears to be orthogonal to cooperation, which is positively correlated with altruism.[14] The link between cooperation and altruism has been previously illustrated: Capraro et al. (2014) find a strong correlation between a PD game and a subsequent DG that points in the direction of the existence of a mutual prosocial motivation fundamental to both altruism and cooperation.

Table 5.4: Average Marginal Effects of Victimization, Altruism, and Treatment on Cooperation Controlling for Sociodemographics

	Dependent variable:	
	Cooperation	
	probit	
	(1)	(2)
Victimization index	−0.01 (0.02)	−0.01 (0.03)
Altruism	0.12** (0.06)	0.13** (0.06)
Treatment with Jordanian	−0.01 (0.05)	−0.01 (0.06)
Age		0.00 (0.00)
Female		0.05 (0.06)
No. of children		0.00 (0.01)
Education		0.00 (0.03)
Income		−0.00 (0.02)
Distress level		0.03 (0.05)
Observations	371	341
Log Likelihood	−245.42	−223.26
Akaike Inf. Crit.	498.83	466.52

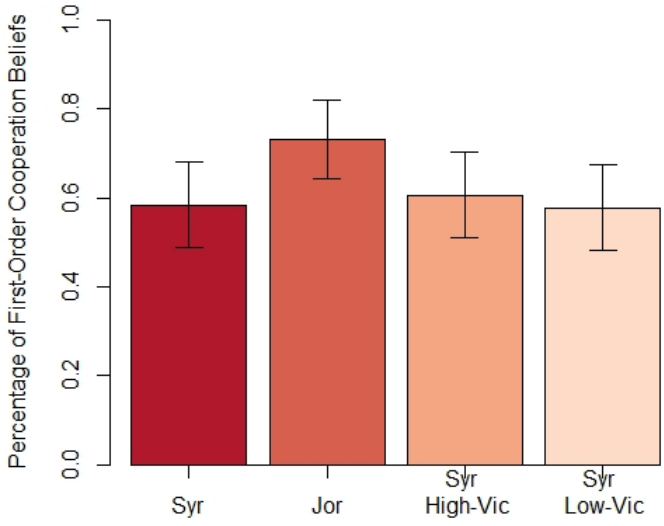
Note: The different number of observations is due to the fact that the *Victimization index* variable contains 16 missing observations and the sociodemographics the remaining 30 missings as all questions in the post-experimental survey were not mandatory. Asterisks denote the following significant levels: *p<0.1; **p<0.05; ***p<0.01. Standard errors are between parentheses.

[14] Among Syrian cooperators there are 53.74% severely victimized participants whereas there are 52.78% among defectors.

5.6.3 Beliefs of Cooperation

Following our Hypothesis 1, the low rate of cooperation among Syrians when compared to Jordanians is matched with a low level of cooperative beliefs of others.[15] This is depicted in Figure 5.4. Among Syrian participants, 58.4% believe that the other participants will cooperate compared to 73.17% among Jordanian participants (Wilcoxon rank sum test, $p - value = 0.0129$). There is no significant difference between Syrians who are severely victimized and those who are mildly victimized: among the severely victimized, 60.61% believe that the other participant will cooperate and among the mildly victimized 57.80% do so (Wilcoxon rank sum test, p-value = 0.5845). This result does not support our Hypothesis 2. Yet, the observation that prosocial behavior and elicited beliefs do not coincide with victimization of war does leave the possibility open for a common mechanism underlying both since neither is affected at all by the level of victimization.

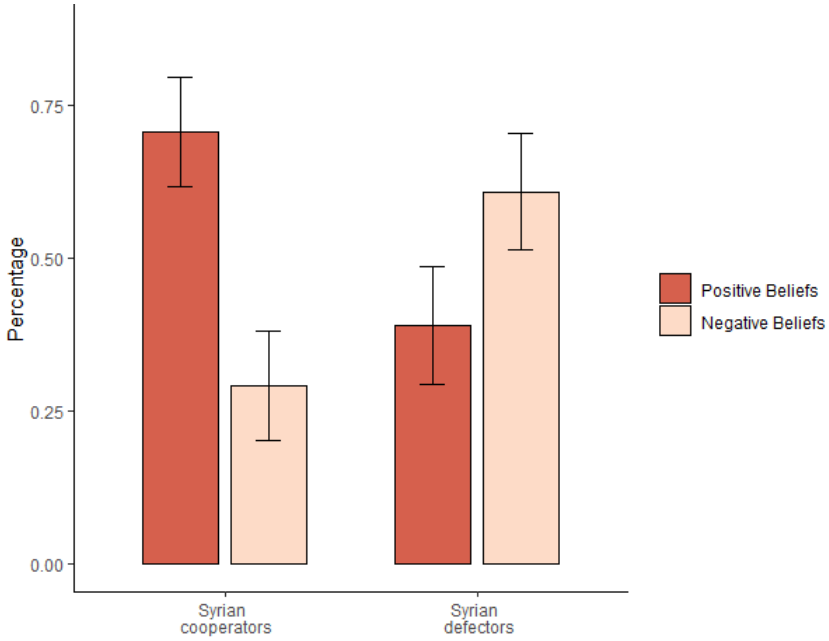
Figure 5.4: Distribution of Cooperation Beliefs According to Nationality and Victimization



[15] For a robustness check on the effect of the partner see Figure 5.B.II in the Appendix. In sum, there is no significant treatment effect among Syrians.

Let us have a look at the connection between beliefs and decisions. Figure 5.5 shows beliefs as a function of the decision to cooperate or to defect. Remember that 60.1% of our Syrian participants are cooperators. Cooperation and beliefs of cooperation positively correlate among Syrian participants (ρ= 0.3136; p-value= 0.0000).[16] More specifically, the majority of cooperators (70.76%) as well as the majority of defectors (60.93%) believe that others behave like themselves. These results support our Hypothesis 1: beliefs are positively correlated with behavior. In fact, altruism is positively correlated with the beliefs of cooperation (ρ=0.1611; p-value=0.0015).

Figure 5.5: Distribution of Beliefs According to the Decision to Cooperate or to Defect



In the following, we rely on beliefs and behavior as the dependent variables and include altruism and victimization as main explanatory variables (Table 5.5). We are, thus, assuming that both altruism and victimization are more exogenous than beliefs regarding the behavior of others. Taking the correlation between behavior

[16] See Figure 5.A.I in the Appendix for the distribution of beliefs among Jordanian participants: cooperation and beliefs of cooperation positively correlate (ρ= 0.3104; p-value= 0.0045).

and beliefs into account, we estimate four probit models in which we combine covariates of beliefs for cooperators and for defectors. In this way, we regress the positive beliefs (*'pB'*) and negative beliefs (*'nB'*) of cooperation (for cooperators and defectors respectively) on altruism and victimization controlling for the treatment and sociodemographics. Having a look at the variable 'severe victimization', overall results mainly show that there is no effect of war victimization on the beliefs and behavior, refuting our Hypothesis 2. However, being severely victimized marginally and positively correlates with being a defector holding positive beliefs (Model (6)). Altruism and behavior do show significant correlations. Altruists are more likely to be cooperators with positive beliefs (Models (1 - 2)). Additionally, there is a negative link between altruism and being a cooperator with negative beliefs . On the other side of the spectrum, altruists are less likely to be defectors with negative beliefs (Models (7 - 8)). This result shows that social preferences (here those with a consistent altruistic type) can impact the beliefs of others' willingness to cooperate. Throughout all models, there is no effect of the treatment scenario. Finally, among the sociodemographics, results show that being a female is positively and significantly correlated with cooperating despite holding negative beliefs. Whereas the number of children a family has is negatively and marginally correlated with being a cooperator who holds negative beliefs.

Table 5.5: Average Marginal Effects of Probit Regressions on the Four Combinations of Behavior with Beliefs with Victimization, Altruism, and Treatment as Main Explanatory Variables

	Dependent variable:							
	Cooperator pB		Cooperator nB		Defector pB		Defector nB	
	probit		*probit*		*probit*		*probit*	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Severe victimization	−0.01	−0.05	0.03	0.05	0.05	0.07*	−0.07	−0.07
	(0.05)	(0.06)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)
Altruism	0.23***	0.21***	−0.10**	−0.08*	−0.04	−0.03	−0.08*	−0.09*
	(0.06)	(0.07)	(0.04)	(0.05)	(0.04)	(0.05)	(0.05)	(0.05)
Treatment with Jordanian	0.04	0.04	−0.05	−0.05	0.00	0.01	0.02	0.01
	(0.06)	(0.06)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)	(0.05)
Age		0.00		−0.00		−0.00		0.00
		(0.00)		(0.00)		(0.00)		(0.00)
Female		−0.05		0.10**		0.04		−0.08
		(0.06)		(0.04)		(0.04)		(0.05)
No. of children		0.02		−0.02*		−0.01		0.01
		(0.01)		(0.01)		(0.01)		(0.01)
Education		0.02		−0.02		0.01		−0.00
		(0.03)		(0.02)		(0.02)		(0.03)
Income		−0.00		−0.00		−0.00		0.00
		(0.02)		(0.02)		(0.02)		(0.02)
Distress level		0.01		0.02		−0.01		−0.02
		(0.05)		(0.04)		(0.04)		(0.05)
Observations	371	341	371	341	371	341	371	341
Log Likelihood	−247.04	−223.55	−168.54	−155.45	−159.36	−141.86	−198.35	−177.97
Akaike Inf. Crit.	502.08	467.10	345.08	330.91	326.71	303.72	404.71	375.94

Note: The different number of observations is due to the fact that the *Severe victimization* variable contains 16 missing observations and the sociodemographics the remaining 30 missings as all questions in the post-experimental survey were not mandatory. Asterisks denote the following significant levels: *p<0.1; **p<0.05; ***p<0.01. Standard errors are between parentheses.

5.6.4 Punishment

Since the punishment decision is path dependent, that is, participants make their punishment choices dependent on their first decision to cooperate or not, we analyze punishment behavior dependent on whether participants are cooperators or defectors. Moreover, we elicit punishment strategies using the strategy method, as it enables us to analyze punishment behavior for situations in which participants face either a cooperator or a defector. In the following, we refer to antisocial punishment as a strategy of subjects to punish those who cooperate or to punish irrespectively of the other's behavior. As such, we classify antisocial punishers as either cooper-

ators or defectors who do not aim at punishing a norm violation or at increasing the overall payoff. For this purpose we pool the punishment of cooperators and the punishment of both cooperators and defectors together as antisocial punishment, hereby differentiating between cooperators and defectors.[17] Tables 5.6 - 5.7 show the distribution of the three different punishment strategies first with regard to nationality (for Syrians and Jordanians) and then with regard to the level of victimization among Syrians.

Table 5.6: Proportion of Punishment Strategies for Cooperators

	Syrians	**Jordanians**	**Syrians severely victimized**	**Syrians mildly victimized**
Cooperator *NP*	0.4492 (N=106)	0.6324 (N=43)	0.3934 (N=48)	0.5048 (N=53)
Cooperator *DP*	0.2500 (N=59)	0.1618 (N=11)	0.2459 (N=30)	0.2667 (N=28)
Cooperator *AP*	0.3008 (N=71)	0.2059 (N=14)	0.3607 (N=44)	0.2286 (N=24)

Note: *NP* refers to participants who refrain from punishment and stands for 'no punishment'. *DP* refers to the punishment of defectors and stands for 'defector punishment'. *AP* stands for 'antisocial punishment'.

Table 5.7: Proportion of Punishment Strategies for Defectors

	Syrians	**Jordanians**	**Syrians severely victimized**	**Syrians mildly victimized**
Defector *NP*	0.5099 (N=77)	0.7143 (N=10)	0.4737 (N=36)	0.5294 (N=36)
Defector *DP*	0.0993 (N=15)	0.0000 (N=0)	0.1053 (N=8)	0.1029 (N=7)
Defector *AP*	0.3907 (N=59)	0.2857 (N=4)	0.4211 (N=32)	0.3676 (N=25)

Note: *NP* refers to participants who refrain from punishment and stands for 'no punishment'. *DP* refers to the punishment of defectors and stands for 'defector punishment'. *AP* stands for 'antisocial punishment'.

Syrian cooperators show lower levels of 'no punishment' than Jordanian cooperators (for cooperators: Wilcoxon rank sum test, $p - value = 0.0079$; for defec-

[17] Rand et al. (2010) model a population to highlight how detrimental cooperators who punish both (CS) and cooperators who only punish other cooperators (CA) can be for the overall levels of cooperation in a given society. Especially, when the effect of punishment is greater than the cost of punishment, altruistic punishers are more likely to change into CAs or CSs than vice versa (they are victims of antisocial punishers, while CAs and CSs are not punished by altruistic punishers). Hence, antisocial punishment becomes a strategy usually implemented by cooperators. However, they argue that cooperation is not maintained by antisocial punishment since it is very likely that defectors who punish both become dominant after all.

tors: Wilcoxon rank sum test, $p - value = 0.145$). There is no significant difference between Syrians and Jordanians who punish a defector (for cooperators: Wilcoxon rank sum test, $p - value = 0.1287$; for defectors: Wilcoxon rank sum test, $p - value = 0.2197$). Taking the level of victimization into account, there is a significant difference among Syrian cooperators who are victimized and punish antisocially and those who are not victimized (Wilcoxon rank sum test, $p - value = 0.0308$), but not for Syrian defectors (Wilcoxon rank sum test, $p - value = 0.516$).[18] These results point in the direction of how war victimization may trigger antisocial punishment among cooperators but not among defectors, meaning that a differentiation between both groups makes sense to understand the mechanisms behind these possible triggers of antisocial punishment in the context of war. Figures 5.6a and 5.6b illustrate again this difference on punishment among Syrian cooperators (5.6a) and defectors (5.6b) dependent on the level of victimization (HV: severely victimized; LV: mildly victimized; 'nopun' stands for 'no punishment'; 'pundef' stands for 'punishment of defector'; 'antisopun' stands for 'antisocial punishment'.).

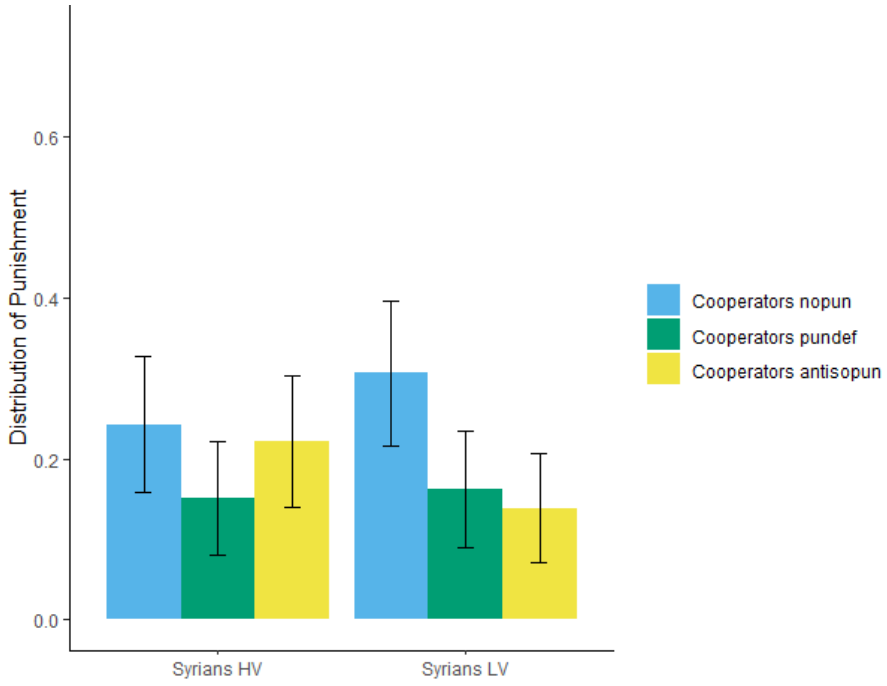
Figure 5.6a shows that Syrian cooperators who are severely victimized show higher levels of antisocial punishment compared to those mildly victimized, and this difference is statistically significant (2-sample test for equality of proportions: $\chi = 4.1719$, df $= 1$, $p - value = 0.0411$). Yet, among defectors this is not the case. There is no significant difference between severely and mildly victimized Syrians regarding antisocial punishment (due to the low number of observations: Wilcoxon rank sum test: $p - value = 0.6055$). Additionally, defectors are less likely to punish other defectors compared to cooperators (Wilcoxon rank sum test: $p - value = 0.0002$). In conclusion, the negative effect of war victimization on punishment among cooperators is in

[18] When pooling cooperators and defectors together who punish antisocially, there is a positive and significant correlation between the victimization index and antisocial punishment ($\rho = 0.1208$; $p - value = 0.0199$).

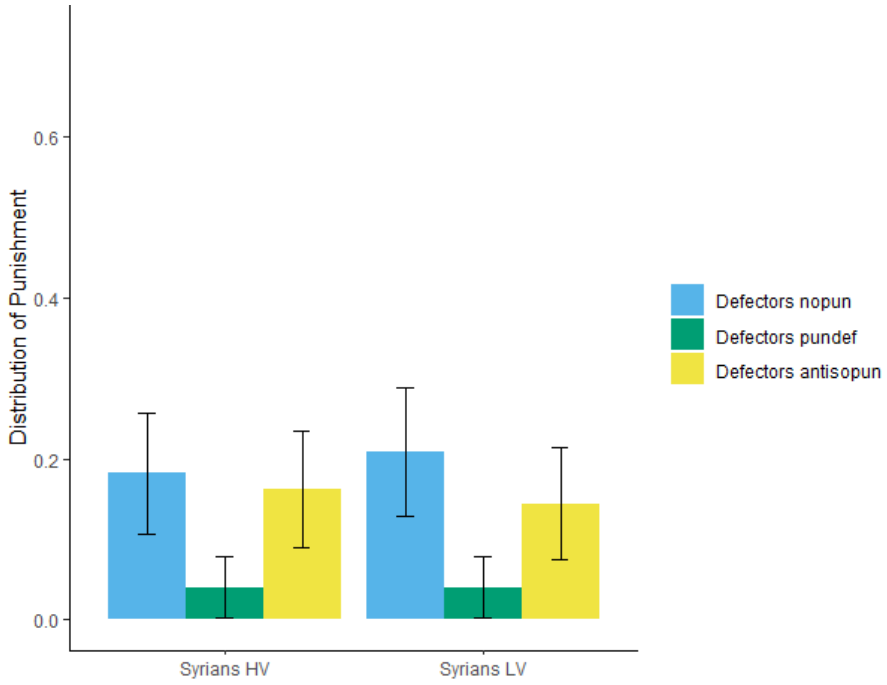
line with our Hypothesis 3 about the effects of war on antisocial punishment.[19] This result highlights the difference between cooperators and defectors in how they are affected by victimization when they have to implement a subsequent peer punishment mechanism.

[19]Table 5.B.II in the Appendix shows results for antisocial punishment among cooperators controlling for altruism and beliefs. Regression results also corroborate our Hypothesis 3. Table 5.B.III in the Appendix shows that there is no effect of victimization on antisocial punishment among defectors.

Figure 5.6: Punishment Behavior According to the Level of Victimization



(a) Cooperators



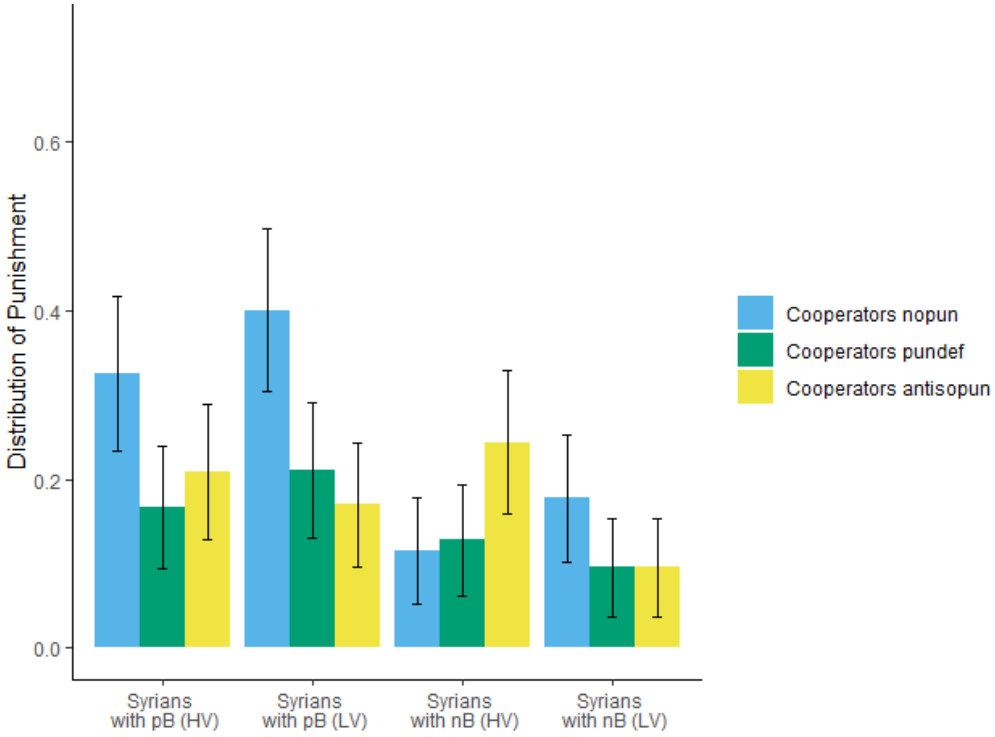
(b) Defectors

We further ask how the experiences of war interact with elicited beliefs as a supple-

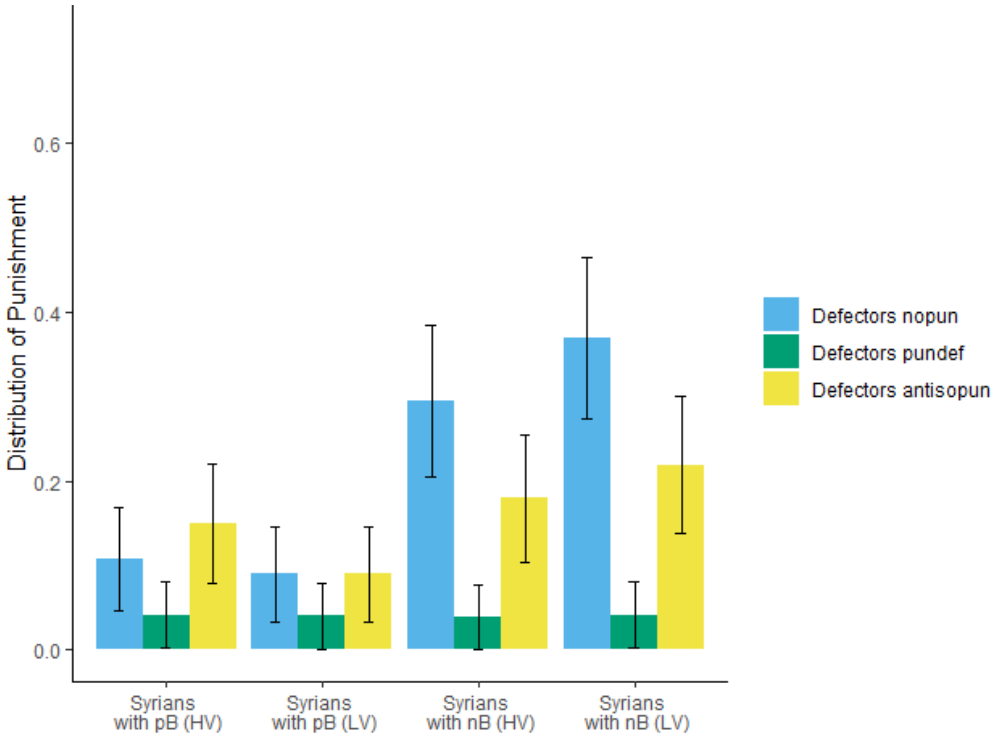
mentary motivational key of behavior when it comes to punishment. In this way, we can better study a possible link between belief, punishment, and war experiences. We are aware that the following findings are preliminary, as they are mainly conducted on an exploratory character without precedence in the literature until now. Figures 5.7a and 5.7b show the distribution of punishment dependent on both elicited beliefs and victimization.

Figure 5.7a shows that the effect of victimization among Syrian cooperators on antisocial punishment is robust to the addition of participants' elicited beliefs (Wilcoxon rank sum test: $p - value = 0.0537$). Cooperators with negative beliefs who are severly victimized tend to punish antisocially compared to those who are only mildly victimized. This is our main exploratory finding. Moreover, among this same group, there is more antisocial than prosocial punishment (Wilcoxon signed rank test: $p - value 0.0971$). Among the defectors, there is no effect of victimization on antisocial punishment (Figure 5.7b). However, the proportion of antisocial punishment is mainly and significantly higher compared to the proportion of prosocial punishment as seen above in Figure 5.6b (for Syrians with positive beliefs (HV): Wilcoxon signed rank test: $p - value = 0.00714$; for Syrians with negative beliefs (HV): Wilcoxon signed rank test: $p - value = 0.0083$; for Syrians with negative beliefs (LV): Wilcoxon signed rank test:$p - value = 0.0031$). The heterogeneity of behavior and beliefs in combination with punishment highlights the fact that one should be cautious when predicting punishment dependent on behavior only.

Figure 5.7: Punishment Behavior According to Beliefs and the Level of Victimization



(a) Cooperators



(b) Defectors

We, henceforward, focus on our main finding within the subsample of cooperators with negative beliefs to better understand possible covariates - among victimization - of antisocial punishment.[20] In Table 5.8 we regress punishment behavior on victimization, altruism, and the treatment scenario controlling for sociodemographic variables. Neither altruism nor the treatment scenario correlate with antisocial punishment.[21] Yet, being victimized increases the likelihood of being an antisocial punisher by 14 percentage points controlling for altruism, treatment, and sociodemographics. This is our main exploratory finding that shows that especially when cooperators expect the worst, the threshold of antisocial punishment is decreased by victimization, and hence, the experience of war negatively affects how peer punishment enforces social norms.

[20]For probit regression models for the other three subgroups on punishment dependent on the combination of behavior and belief see Tables (5.B.IV - 5.B.VI) in the Appendix. In sum, no effect of war victimization on punishment is found among the other subgroups.

[21]The lack of in-group dynamics in punishment behavior is in line with Goette et al. (2012) who also find in their social group treatment that punishment behavior is not affected by in-group favoritism.

Table 5.8: Average Marginal Effects of the Probit Regression Model on Punishment Schemes Among Cooperators with Negative Beliefs About the Cooperation of Others

	Dependent variable:					
	NP		*DP*		*AP*	
	probit		*probit*		*probit*	
	(1)	(2)	(3)	(4)	(5)	(6)
Victimization Index	−0.09	−0.10	−0.05	−0.04	0.15**	0.14**
	(0.06)	(0.06)	(0.05)	(0.05)	(0.06)	(0.06)
Altruism	0.26	0.21	−0.17	−0.20	−0.07	−0.000
	(0.19)	(0.22)	(0.12)	(0.12)	(0.20)	(0.23)
Treatment with Jordanian	0.02	0.01	−0.01	−0.03	0.01	0.06
	(0.14)	(0.15)	(0.12)	(0.13)	(0.14)	(0.15)
Age		0.01		−0.00		−0.01
		(0.01)		(0.01)		(0.01)
Female		−0.04		−0.12		0.12
		(0.14)		(0.13)		(0.14)
No. of children		0.00		−0.04		0.05
		(0.03)		(0.03)		(0.04)
Education		0.09		−0.04		−0.03
		(0.07)		(0.07)		(0.08)
Income		−0.02		−0.04		0.06
		(0.05)		(0.04)		(0.05)
Distress level		−0.20		0.05		0.15
		(0.19)		(0.15)		(0.18)
Observations	65	64	65	64	65	64
Log Likelihood	−38.65	−35.44	−36.33	−33.90	−40.05	−36.68
Akaike Inf. Crit.	85.31	90.89	80.66	87.80	88.10	93.37

Note: *NP* refers to participants who refrain from punishment and stands for 'no punishment'. *DP* refers to the punishment of defectors and stands for 'defector punishment'. *AP* stands for 'antisocial punishment'. The subsample is limited to cooperators with negative beliefs. The different number of observations is due to missing observations as all questions in the post-experimental survey were not mandatory. Asterisks denote the following significant levels: *p<0.1; **p<0.05; ***p<0.01. Standard errors are between parentheses.

5.7 Discussion

This paper is based on the analysis of two experiments that were run in the northern part of Jordan among Syrian refugees and their Jordanian hosts. In analyzing the experiments, we found a number of rather unexpected results: especially when cooperators expect the worst (negative cooperation beliefs), the threshold of antisocial

punishment is decreased by victimization; moreover, war victimization is associated with neither altruism nor cooperation (or the cooperation beliefs). We are very aware of the exploratory nature of the analysis regarding the interplay between beliefs, behavior, and victimization of war. We are, however, tempted to offer plausible narratives which might explain our puzzling results, namely that cooperators who don't believe that others will behave like themselves show higher levels of antisocial punishment when they are victimized by war.

Our first possible (and most tentative) explanation accounts for the study's title 'expect the worst and you will not be disappointed'. In our PD setting with elicited beliefs, we allow for heterogeneity of beliefs and behavior and, hence, there are four different types of participants: cooperators with positive beliefs, cooperators with negative beliefs, defectors with negative beliefs, and defectors with positive beliefs. One could further classify participants into those who are strategic and those who are not and hence do not seek to maximize their payoffs (perhaps because they follow a social norm).

On the one side, we would have defectors who presumably either show consensus bias or respond with the best answer to their belief of cooperation by defecting (in terms of payoff maximization). On the other side, we would have cooperators who are presumably not driven by payoff maximization and could then be divided between those who follow a norm or display consensus bias and those who cooperate but nevertheless expect the worst (namely defection by the other participant). The behavior of the latter group is in line with Bicchieri and Xiao's (2009) conjecture. Bicchieri and Xiao assume that participants have two different kinds of expectations that explain the fact that there are cooperators with negative beliefs. In this case, there exist both empirical expectations and normative expectations. For instance, in a society with high levels of corruption one could abstain from being corrupt

because of believing in a social norm against corruption (cooperators). Additionally, one could normatively expect others also to believe in a norm for abstaining from corruption at the same time as one could empirically expect others to be corrupt due to the fact that one knows that there are high rates of corruption. In this way, a cooperator who follows a norm for cooperation and expects the worst by stating that others will defect could be revealing his empirical expectation and not his normative one. In this scenario, it is also likely that in a society in which one expects the majority not to follow a social norm, the threshold for antisocial punishment decreases, in our case specifically, triggered by victimization.

The second possible (and least provocative) suggestion could be the fact that due to the nature of our game, cooperators with negative beliefs who are victimized do not update their beliefs when presented with the punishment options. Remember that we elicit punishment with the strategy method and we do not give feedback on the actual behavior of the other participant. Like this, a cooperator could be interpreted as punishing antisocially due to the fact that he does not update his beliefs when facing a hypothetical cooperator because he truly believes that the interaction will indeed happen with a defector. In this case, the punishment strategy would not take into account the strategy of the hypothetical other player as he does not expect him to really be a cooperator and it will be falsely be classified as antisocial punishment.

Finally, it seems that the motivations behind prosocial behavior do not apply to punishment and hence, participants would be in a way cognitively 'separating' the first and the second stage of the game. Gächter et al. (2010) argue that while cooperation is mainly affected by social preferences, punishment is rather linked to culture. Our case is in line with this suggestion. Culture has been defined in many different ways and it has a very broad coverage. Mainly, it encompasses distinctive features of everyday life shared by people in a place or time, such as "customary beliefs,

social forms, and material traits of a social group" (Merriam-Webster Dictionary, 2021). One could argue that how individuals deal with punishment is influenced by experiences that are part of culture, while cooperation is mainly driven by social preferences. Like this, norm based behavior, such as fairness and inequality aversion, can coexist with antisocial punishment. Our contribution adds victimization of war as a possible trigger for antisocial punishment that does not affect prosocial behavior. In which forms victimization affect cultural aspects of life is a big question that definitely needs further investigation.

5.8 Conclusion

We have analyzed, among Syrian refugees living in Jordan, the possible effects of victimization from war on prosocial behavior and punishment taking beliefs into account. We have shown that prosocial behavior and punishment may underlie different mechanisms regarding how these behavioral traits are affected by war: while victimization from war does not coincide with prosocial behavior it does coincide with antisocial punishment. More precisely and taking beliefs into account: cooperators who don't believe that others will cooperate show higher levels of antisocial punishment when they are victimized by war. Like this, we show empirical evidence that highlights the fact that participants who cooperate but follow the expression of 'expect the worst and you will never be disappointed' decrease their threshold for antisocial punishment possibly triggered by victimization. We further show that victimization does not coincide with altruism or cooperation (nor with elicited beliefs of cooperation), while cooperation is determined by participants' preferences for altruism. This excludes possible self-selection issues into victimization due to prosocial behavior in the past.

At this point, it is worth mentioning that participants in this study don't constitute

a representative sample of all Syrian refugees. It is important to avoid the generalization of these results, as participants belong to a very specific - though randomized - sample composed by particular vulnerable Syrian refugees living in Jordan. Put simply, results from this study shall not be interpreted in a causal manner as a whole and cannot be inferred beyond the current sample. Moreover, these results are very specific of Syrian refugees in Jordan and shall not be extended to Syrian refugees living in other countries or to other migrants. The particular reasons for fleeing the war-torn country are very specific to the individual circumstances that may even vary among the same Syrian sample. Hence, we acknowledge the possibility of self-selection among this sample, for instance, self-selection into asylum, specially regarding possible determinants that encompass background and personal traits that could further affect behavior.

For a society to thrive after a conflict, cooperators who are willing to incur costs in order to enhance the welfare of the group play an essential role. They are the ones who are mainly expected to impose peer punishment as a possible driver for cooperation. We find that antisocial punishment coincides with victimization among cooperators, yet not among defectors. In other words: punishment behavior among norm-driven individuals is affected by victimization from war, while it seems that strategic behavior (as shown by participants who behave in line with payoff maximization) is not. This finding has negative implications for the disciplining effect of peer punishment mechanisms of norm violators. In a worst case scenario, punishment could lead to a tragedy of the commons in which all individuals feel forced to implement punishment in order to protect themselves against others who can also punish. Especially if the state cannot provide the enforcement of law and legitimate legal institutions, the presence of antisocial punishment is detrimental for the reconciliation of a society. Even more, if antisocial punishment is mainly implemented by cooperators. This highlights the importance of the centralization of punishment

mechanisms and the long overdue psychological (and financial) management of victimization from war.

5.A Additional Statistical Analysis

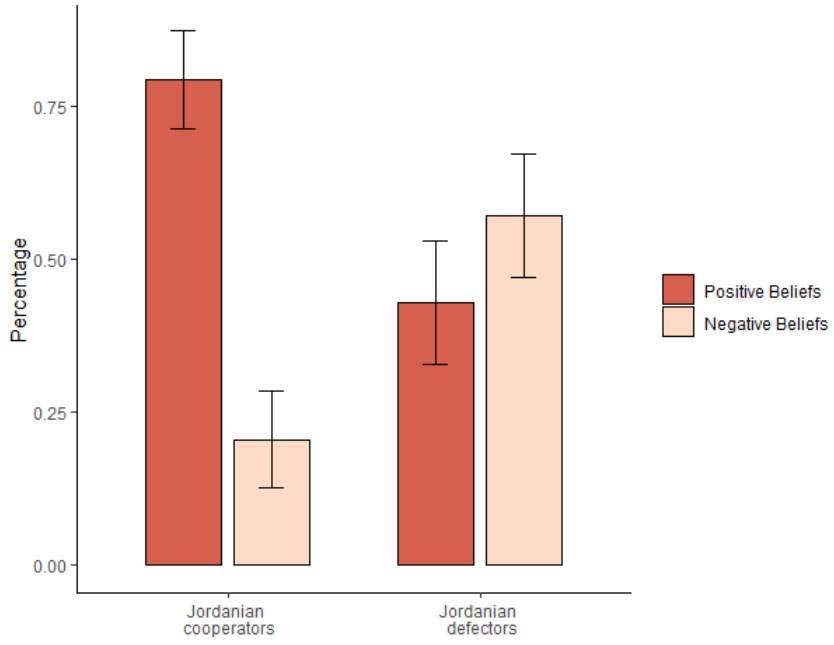
5.A.I Jordanian Participants

Table 5.A.I: Descriptive Statistics of Jordanian Participants

Variable	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Age	82	26.159	7.894	17	22	28	60
Female	81	0.543	0.501	0.000	0.000	1.000	1.000
No. of children	75	0.707	1.822	0.000	0.000	0.000	10.000
Education	77	4.208	1.080	1.000	3.000	5.000	6.000
Income	79	2.519	1.207	1.000	1.500	4.000	5.000
Distress level	82	2.096	0.525	1.000	1.875	2.375	3.812
Importance of religion	82	3.841	0.367	3	4	4	4

'Age' is a continuous variable from 16 to 80 years old. 'Female' is a dummy variable describing the gender of the participants. 'No. of children' is a continuous variable which denotes the number of children that participants have. 'Education' is a categorical variable describing participants' highest degree of education with the following answers: 1="read and write"; 2="primary school degree"; 3="high school degree"; 4="currently in university education"; 5="university degree"; 6="post-graduate degree". 'Income' is a categorical variable that describes participants' current income level ranging from the lowest 1 to the highest 5. The variable 'distress level' is categorical with levels that range from 1="not at all" to 4="extremely". 'Importance of religion' is a categorical variable ranging from 1="very important" to 4="not important at all".

Figure 5.A.I: Distribution of Beliefs According to the Decision To Cooperate or to Defect

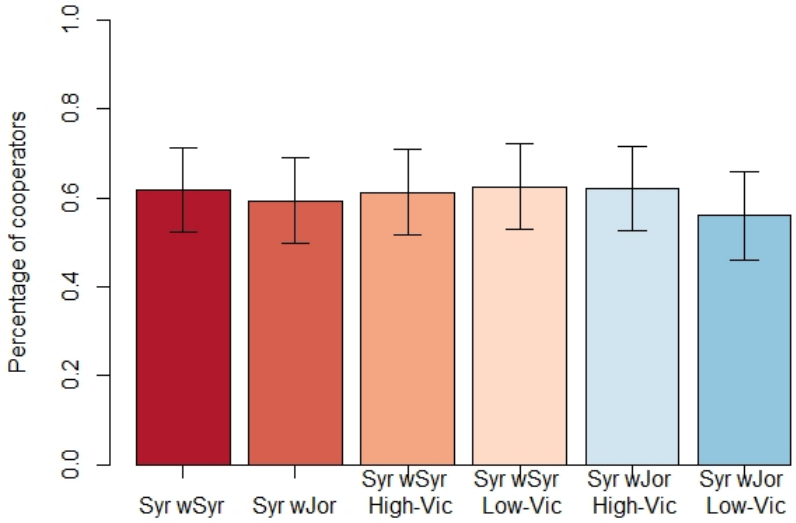


5.B Robustness Checks

5.B.I Cooperation

There is no significant treatment effect among Syrians: 61.78% of Syrians cooperate when they play with another Syrian compared to 59.38% when playing with a Jordanian without taking the level of victimization into account (Wilcoxon rank sum test, p-value = 0.6495). Taking the level of victimization into account, there is no significant treatment effect: 61.29% of Syrians who are severely victimized are cooperators when they play with another Syrian compared to 62.16% when playing with a Jordanian (Wilcoxon rank sum test, p-value=0.9043).

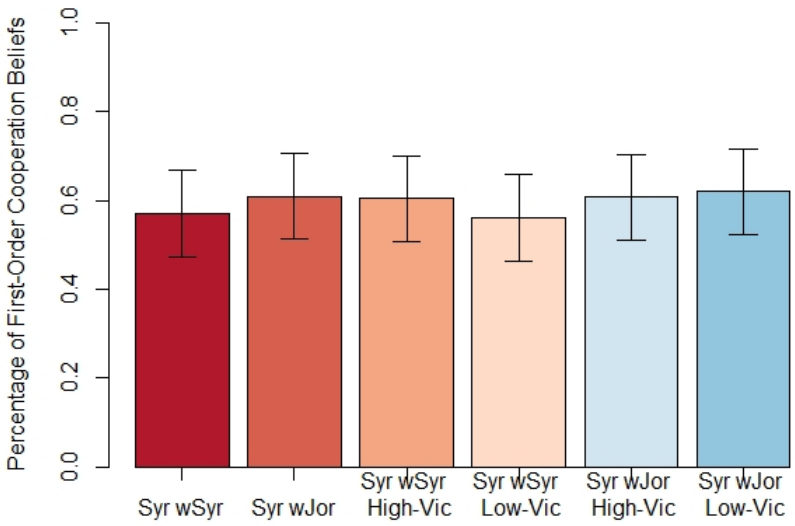
Figure 5.B.I: Distribution of Cooperation According to Treatment and Victimization



5.B.II Cooperation Beliefs

As an additional robustness check, we also test whether the respective interaction partner is associated with the beliefs in cooperation. The data shows no significant treatment effect between Syrian participants who play with another Syrian and those who play with a Jordanian (Wilcoxon rank sum test, p-value = 0.477). Taking the level of victimization into account, there is no significant treatment effect: 60.48% of Syrians who are severely victimized also expect others to cooperate when they play with another Syrian compared to 60.81% when playing with a Jordanian (Wilcoxon rank sum test, p-value = 0.965).

Figure 5.B.II: Distribution of Cooperation According to Treatment and Victimization



5.B.III Prosociality

24.32% of Syrians are altruistic when they play with another Syrian ('Syr wSyr') compared to 17.96% when playing with a Jordanian ('Syr wJor') without taking the level of victimization into account (Wilcoxon rank sum test, p-value = 0.1578). Taking the level of victimization into account, there is no significant treatment effect: 20.16% of Syrians who are severely victimized are always altruistic when they play with another Syrian ('Syr wSyr High-Vic') compared to 17.57% when playing with a Jordanian ('Syr wJor High-Vic') (Wilcoxon rank sum test, p-value=0.6561; see Table 5.B.I below for average marginal effects of the combination of victimization and treatments on altruism). Finally, although 29.27% of Syrians with low levels of victimization are always altruistic when they play with another Syrian ('Syr wSyr Low-Vic') compared to 18% when playing with a Jordanian ('Syr wJor Low-Vic') the difference is not statistically significant (Wilcoxon rank sum test, p-value=0.1273).

Figure 5.B.III: Distribution of Altruism According on Treatment and Victimization

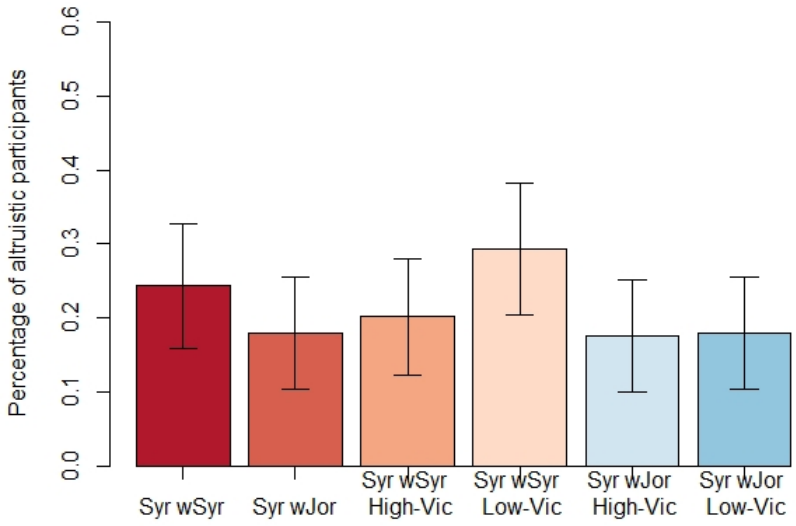


Table 5.B.I shows that there is no effect of the treatment scenarios on altruism. Meaning, the partner in the game does not affect the preference for prosociality as measures in the DG. Here, again, being a female decreases the likelihood of being altruistic all the way through the DG (by 15 percentage points). Finally, participants with higher levels of income are more likely to make altruistic decisions.

Table 5.B.I: Average Marginal Effects of Probit Regression on Altruism and Dummies for the combination of Victimization and Treatment controlling for Sociodemographic Variables

	Dependent variable:
	Altruism
	probit
Severely victimized Syrians 'wJor'	−0.07
	(0.06)
Severely victimized Syrians 'wSyr'	−0.05
	(0.05)
Mildly victimized Syrians 'wJor'	−0.09
	(0.06)
Age	0.00
	(0.00)
Female	−0.15**
	(0.05)
No. of children	0.00
	(0.01)
Education	0.05
	(0.02)
Income	0.04*
	(0.02)
Distress level	−0.01
	(0.04)
Observations	341
Log Likelihood	−168.55
Akaike Inf. Crit.	357.09
Note:	*p<0.1; **p<0.05; ***p<0.01

5.B.IV Victimization and Punishment

We regress the three punishment strategies (among Cooperators) on victimization, beliefs, altruism, treatment, and the sociodemographics. Results show that victimization positively correlates with antisocial punishment among cooperators (in line with Hypothesis 3). While the social preference for altruism is negatively linked to being an antisocial punisher and positively correlated with the absence of punishment whatsoever. Taking a look at the sociodemographics it seems that females tend to punish more than males, while age is negatively correlated with the antisocial strategy of punishment and marginally and positively correlated with refraining from punishment.

Table 5.B.II: Average Marginal Effects of a Probit Regression Model on Punishment Schemes among Cooperators

	Dependent variable:					
	No Punishment Cooperators		Punishment of Defectors Cooperators		Antisocial Punishment Cooperators	
	probit		*probit*		*probit*	
	(1)	(2)	(3)	(4)	(5)	(6)
Victimization index	−0.02	−0.01	−0.05	−0.05*	0.06**	0.06**
	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)	(0.03)
Belief of cooperation	0.11	0.07	−0.01	0.01	−0.09	−0.08
	(0.07)	(0.08)	(0.07)	(0.07)	(0.197)	(0.07)
Altruism	0.24***	0.18**	−0.05	−0.04	−0.19***	−0.14**
	(0.08)	(0.09)	(0.07)	(0.07)	(0.06)	(0.07)
Treatment with Jordanian	−0.04	0.00	0.07	0.05	−0.02	−0.03
	(0.07)	(0.08)	(0.06)	(0.07)	(0.07)	(0.07)
Age		0.01*		0.00		−0.01**
		(0.00)		(0.00)		(0.00)
Female		−0.15**		0.10		0.05
		(0.08)		(0.07)		(0.07)
No. of children		−0.01		−0.01		0.02
		(0.02)		(0.03)		(0.02)
Education		−0.02		0.02		−0.01
		(0.04)		(0.03)		(0.04)
Income		0.01		−0.02		0.01
		(0.03)		(0.02)		(0.03
Distress level		−0.10		0.05		0.05
		(0.08)		(0.07)		(0.07)
Observations	227	212	227	212	227	212
Log Likelihood	−148.21	−132.99	−126.97	−117.03	−129.71	−117.05
Akaike Inf. Crit.	306.42	287.98	263.93	256.07	269.43	256.10

Note: *p<0.1; **p<0.05; ***p<0.01

Here again, we regress the three punishment strategies (among defectors) on victimization, beliefs, altruism, treatment, and the sociodemographics. Results show that victimization does not affect antisocial punishment among cooperators. While the social preference for altruism is negatively linked to being an antisocial punisher and positively correlated with the absence of punishment whatsoever. Surprisingly, when defectors belief that others will cooperate they are more likely to punish (Models (1) - (2)). Taking a look at the sociodemographics it seems that those participants with higher levels of income tend to refrain from punishment in general, while those with lower levels of income tend to punish other defectors less.

Table 5.B.III: Average Marginal Effects of a Probit Regression Model on Punishment Schemes among Defectors

	Dependent variable:					
	No Punishment Defectors		Punishment of Defectors Defectors		Antisocial Punishment Defectors	
	probit		*probit*		*pobit*	
	(1)	(2)	(3)	(4)	(5)	(6)
Victimization index	−0.00	0.01	−0.01	−0.02	0.02	0.02
	(0.04)	(0.05)	(0.02)	(0.03)	(0.03)	(0.04)
Belief of cooperation	−0.22**	−0.19**	0.09	0.09	0.12	0.08
	(0.08)	(0.09)	(0.05)	(0.06)	(0.08)	(0.09)
Altruism	0.33***	0.36***	−0.04	−0.03	−0.28***	−0.31***
	(0.10)	(0.10)	(0.05)	(0.06)	(0.09)	(0.09)
Treatment with Jordanian	0.08	0.07	−0.07	−0.07	−0.01	0.02
	(0.09)	(0.10)	(0.05)	(0.05)	(0.09)	(0.09)
Age		−0.00		0.00		−0.00
		(0.01)		(0.00)		(0.01)
Female		−0.03		−0.00		0.06
		(0.10)		(0.06)		(0.10)
No. of children		0.03		−0.01		−0.01
		(0.03)		(0.01)		(0.02)
Education		−0.05		0.02		0.02
		(0.06)		(0.03)		(0.06)
Income		0.09**		−0.04**		−0.04
		(0.04)		(0.02)		(0.04)
Distress level		0.00		0.03		−0.06
		(0.09)		(0.05)		(0.08)
Observations	144	129	144	129	144	129
Log Likelihood	−92.49	−78.17	−45.57	−41.53	−91.91	−79.36
Akaike Inf. Crit.	194.97	178.35	101.15	105.06	193.83	180.73

Note: *p<0.1; **p<0.05; ***p<0.01

Here, we regress the punishment schemes on victimization and altruism for the other three combinations of behavior and beliefs that are not included in the main text: defectors with positive beliefs, defectors with negative beliefs, and cooperators with positive beliefs. For all three subsamples, there is no effect of war victimization on antisocial punishment.

Table 5.B.IV: Probit Regression on Punishment Schemes among Defectors with Positive Beliefs (pB))

	Dependent variable:					
	No Punishment Defectors pB		Punishment of Defectors Defectors pB		Antisocial Punishment Defectors pB	
	probit		*probit*		*probit*	
	(1)	(2)	(3)	(4)	(5)	(6)
Victimization index	−0.01	−0.02	−0.3	−0.04	0.04	0.07
	(0.05)	(0.08)	(0.04)	(0.05)	(0.06)	(0.08)
Altruism	0.15	0.24	0.02	0.07	−0.20	−0.26
	(0.17)	(0.20)	(0.13)	(0.15)	(0.16)	(0.17)
Treatment with Jordanian	0.05	0.11	−0.08	−0.09	0.02	0.07
	(0.14)	(0.17)	(0.09)	(0.09)	(0.14)	(0.16)
Age		0.00		0.01		−0.01
		(0.01)		(0.01)		(0.01)
Female		0.01		−0.11		0.15
		(0.18)		(0.12)		(0.18)
No. of children		−0.01		−0.01		0.02
		(0.04)		(0.03)		(0.04)
Education		−0.36***		0.07		0.21*
		(0.13)		(0.07)		(0.12)
Income		0.22**		−0.09*		−0.5
		(0.09)		(0.05)		(0.07)
Distress level		0.04		−0.04		−0.09
		(0.15)		(0.09)		(0.13)
Observations	58	52	58	52	58	52
Log Likelihood	−38.05	−26.79	−24.33	−19.97	−39.06	−31.78
Akaike Inf. Crit.	84.10	73.57	56.66	59.95	86.11	83.55

Note: *p<0.1; **p<0.05; ***p<0.01

Table 5.B.V: Probit Regression on Punishment Schemes among Defectors with Negative Beliefs (nB)

	Dependent variable:					
	No Punishment Defectors nB		Punishment of Defectors Defectors nB		Antisocial Punishment Defectors nB	
	probit		*probit*		*probit*	
	(1)	(2)	(3)	(4)	(5)	(6)
Victimization index	−0.00	0.01	0.00	−0.00	−0.00	0.00
	(0.04)	(0.06)	(0.12)	(0.41)	(0.04)	(0.05)
Altruism	0.42***	0.43***	−0.08**	−0.06*	−0.33***	−0.34***
	(0.09)	(0.10)	(0.03)	(0.03)	(0.09)	(0.09)
Treatment with Jordanian	0.09	0.09	−0.02	−0.02	−0.03	−0.00
	(0.11)	(0.13)	(2.61)	(2.51)	(0.11)	(0.12)
Age		−0.00		0.00		0.00
		(0.01)		(0.09)		(0.01)
Female		−0.12		0.02		0.04
		(0.13)		(2.56)		(0.12)
No. of children		0.04		−0.00		−0.03
		(0.03)		(0.32)		(0.03)
Education		0.05		−0.00		−0.04
		(0.07)		(0.27)		(0.07)
Income		0.07		−0.01		−0.03
		(0.05)		(0.98)		(0.04)
Distress level		−0.01		0.02		−0.06
		(0.13)		(2.38)		(0.12)
Observations	86	77	86	77	86	77
Log Likelihood	−53.184	−44.607	−20.119	−17.380	−52.106	−45.193
Akaike Inf. Crit.	114.367	109.214	48.238	54.761	112.213	110.385

Note: *p<0.1; **p<0.05; ***p<0.01

Table 5.B.VI: Probit Regression on Punishment Schemes among Cooperators with Positive Beliefs (pB)

	Dependent variable:					
	No Punishment Cooperators pB		Punishment of Defectors Cooperators pB		Antisocial Punishment Cooperators pB	
	probit		*probit*		*probit*	
	(1)	(2)	(3)	(4)	(5)	(6)
Victimization index	0.02	0.04	−0.05	−0.06	0.03	0.02
	(0.04)	(0.05)	(0.03)	(0.04)	(0.03)	(0.04)
Altruism	0.23***	0.14	−0.01	0.03	−0.20***	−0.15**
	(0.08)	(0.10)	(0.07)	(0.09)	(0.06)	(0.07)
Treatment with Jordanian	−0.06	−0.00	0.11	0.08	−0.04	−0.07
	(0.08)	(0.09)	(0.08)	(0.08)	(0.07)	(0.07)
Age		0.0		0.00		−0.01
		(0.01)		(0.00)		(0.00)
Female		−0.24**		0.21**		0.03
		(0.09)		(0.08)		(0.08)
No. of children		−0.01		−0.00		0.01
		(0.02)		(0.02)		(0.02)
Education		−0.05		0.06		−0.01
		(0.05)		(0.04)		(0.04)
Income		0.04		−0.02		−0.01
		(0.04)		(0.03)		(0.03)
Distress level		−0.06		0.02		0.06
		(0.09)		(0.07)		(0.07)
Observations	162	148	162	148	162	148
Log Likelihood	−108.07	−92.89	−89.69	−77.37	−87.99	−77.69
Akaike Inf. Crit.	224.15	205.78	187.39	174.75	183.97	175.37

Note: *p<0.1; **p<0.05; ***p<0.01

5.C Questionnaire for PTSD Symptoms

The questionnaire consists of questions related to PTSD symptoms that people sometimes have after experiencing hurtful or terrifying events, which we denote here as 'distress level'. In the distress part of the questionnaire, subjects could rate potential feelings of unease (e.g., 'Unable to feel emotions') on a four point scale ranging from 'not at all' to 'a little' to 'quite a bit' to 'extremely'.

The following are symptoms that people sometimes have after experiencing hurtful or terrifying events in their lives. Please read each one carefully and decide how much the symptoms bothered you in the past week.

Please choose the appropriate response for each item:

	Not at all	A little	Quite a bit	Extremely
Recurrent thoughts of memories of the most hurtful or terrifying events.				
Feeling as though the event is happening again.				
Recurrent nightmares.				
Feeling detached or withdrawn from people.				
Unable to feel emotions.				
Feeling jumpy, easily startled.				
Difficulty concentrating.				
Trouble sleeping.				
Feeling on guard.				
Feeling irritable or having outbursts of anger.				
Avoiding activities that remind you of the hurtful event.				
Inability to remember parts of the most hurtful events.				
Less interest in daily activities.				
Feeling as if you don't have a future.				
Avoiding thoughts or feelings associated with the hurtful events.				
Sudden emotional or physical reaction when reminded of the most hurtful events.				

5.D Game Instructions

5.D.I Prisoners' Dilemma

Now consider yourself to be in the following situation in which you may collaborate with a (treatment).[22] Hence there are two people interacting.

Here are the rules:

The game has two stages.

In stage 1, each person chooses simultaneously between two options, X and Y. In stage 2, each person chooses simultaneously between two options, Q and P. In stage 1, choosing X leads to 50 points for the choosing person and 90 points for the other; choosing Y yields 80 points for the choosing person and 0 points for the other. Therefore, if both persons choose X, each person earns 140 points, if both persons choose Y, each person earns 80 points. If one person chooses X, but the other Y, the first choosing X earns 50 points, while the one choosing Y earns 170 points.

In stage 2, persons are informed on the option chosen by the other person. Then each person has the opportunity to destroy points of the other person at own cost, or leave them as they are. That is, in stage two you (and the other) can choose either Q implying no punishment for the other person and no cost for you, or P leading to a deduction of 40 points from the other's payoff and a decrease of your

[22] For the sample used in this paper: Syrians were told that they are playing with another Syrian or a Jordanian participant and Jordanians were told they are playing with another Jordanian or a Syrian participant.

income by 10 points.

Have a look at those three examples:

1. You choose X, the other X. You and the other earn 140 points each. You then choose Q, while the other chooses P. 40 points are destroyed from your income and 10 points deduced from the other's income. You end up with 100 points, the other with 130 points.

2. You choose Y, the other Y. You and the other earn 80 points each. You then choose Q, the other chooses Q as well. No points are destroyed nor deduced. You end up with 80 points, the other with 80 points as well.

3. You choose X, the other Y. You earn 50 points and the other earns 170 points. You then choose P, while the other chooses Q. 40 points are destroyed from the other's income and 10 points deduced from your income. You end up with 40 points, the other with 130 points.

Please look at the following page. On the basis of those examples, please choose how you are going to behave in this situation.

After all participants have completed the questionnaire, we will randomly select you and (treatment) and reward you both according to your decisions.

What will you choose in stage 1?

I choose

Please choose only one of the following answers:

o X (this implies 50 points for me and 90 points for the other)

o Y (this implies 80 points for me and 0 points for the other)

What will you choose in stage 2?*

*If the other player chooses X (in combination with your decision X in stage 1 this yields 140 point for you and 140 points for the other):

Please choose only one of the following answers:

o Q (this implies 0 points destruction for the other and 0 points decrease for your income)

o P (this implies 40 points destruction for the other and 10 points decrease for your income)

What will you choose in stage 2?*

*If the other player chooses Y (in combination with your decision X in stage 1 this yields 50 points for you and 170 points for the other):

Please choose only one of the following answers:

o Q (this implies 0 points destruction for the other and 0 points decrease for your income)

o P (this implies 40 points destruction for the other and 10 points decrease for your income)

What will you choose in stage 2?*

*If the other player chooses X (in combination with your decision Y in stage 1 this yields 170 points for you and 50 points for the other):

Please choose only one of the following answers:

o Q (this implies 0 points destruction for the other and 0 points decrease for your income)

o P (this implies 40 points destruction for the other and 10 points decrease for your income)

What will you choose in stage 2?*

*If the other player chooses Y (in combination with your decision Y in stage 1 this yields 80 points for you and 80 points for the other):

Please choose only one of the following answers:

o Q (this implies 0 points destruction for the other and 0 points decrease for your income).

o P (this implies 40 points destruction for the other and 10 points decrease for your income).

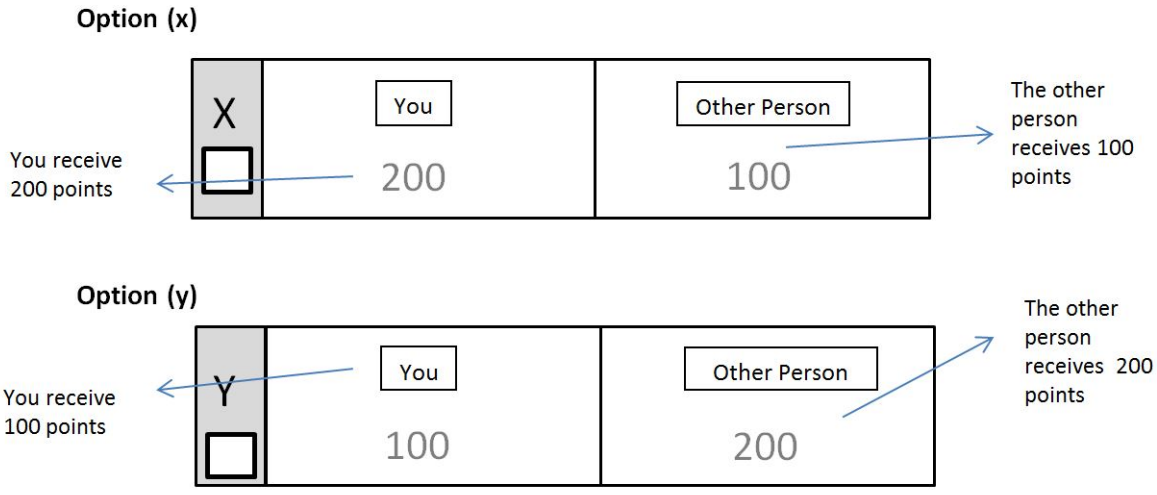
5.D.II Dictator Game

You are given two options: Option (X) and Option (Y).

Both options allow you to distribute a total amount of points between YOU and a (treatment).[23] Hence there are two people interacting.

Have a look at this example:

- Please choose Option (X) or Option (Y).



[23]For the sample used in this paper: Syrians were told that they are playing with another Syrian participant or a Jordanian participant and Jordanians were told they are playing with another Jordanian participant or a Syrian participant.

- If you choose Option (X) you will receive 200 points and the other person receives 100 points.
- If you choose Option (Y) you will receive 100 points and the other person receives 200 points.
- After all participants have completed the questionnaire, we will match you with (treatment). We will pay you both according to one randomly chosen decision.

Which option do you choose in the following 8 situations?

	You	Other Person
X	180	180
Y	230	130

	You	Other Person
X	180	180
Y	270	90

	You	Other Person
X	180	180
Y	320	40

	You	Other Person
X	150	150
Y	200	100

	You	Other Person
X	150	150
Y	240	60

	You	Other Person
X	150	150
Y	290	10

	You	Other Person
X	180	180
Y	230	100

	You	Other Person
X	180	180
Y	230	160

Chapter 6. Sharing is Caring? - An Experimental Study on Children in Employment and Prosociality among Syrian Refugee Minors in Lebanon

Abstract

Refugee children face more threats to their development and are more likely to be employed than the average child. Yet, there is a lack of empirical evidence of how the refugee humanitarian crisis is affecting child development. The current study raises the question of how the burden of engaging in the family work of caregiving among minors is linked to social behavior. For this purpose, two one-shot games, namely a dictator game and a simplified version of the prisoners' dilemma with no feedback on the decision of the partners were conducted with Syrian refugee minors who live in Lebanon. Results show that children who have to take care of young, old or sick family members from the same household, share less when it comes at a personal cost and cooperate less compared to those who do not provide caregiving. There is no evidence of a gender gap in caregiving nor in social behavior. Finally, being engaged in caregiving coincides with having less Lebanese friends and running house chores. Implications go beyond school attendance programs to support child development and their integration in Lebanese society.

Keywords: children, war, employment, labor, migration, human development, cooperation, altruism, lab-in-the-field experiments.

JEL Codes: J13, E24, F66, O15, C71, D64, C99.

6.1 Introduction

Around 152 million minors are in child labor around the globe: children between 5 and 11 years old form the largest share of child laborers (ILO, 2017).[1] Additionally, the presence of child labor in countries affected by armed conflict is 77% higher than the average in the rest of the world (ibid.). Yet, not all forms of employment activities among minors are classified by the International Labor Organization (ILO) as child labor and are, hence, rarely assessed as potential causes of concern for child development. For instance, activities related to helping the household, the family business or earning pocket money are acknowledged as light work. If they are undertaken considering children's needs, they can have positive impacts on their development and the financial situation of the family as well as equipping minors with a set of useful skills and experience (ibid.). However, engaging in light work in the family such as caregiving, can also be a burden that deprives children of their childhood and, hence be detrimental for their well-being and emotional and social development (Robson et al., 2006). The motivation behind this study is to shed some light on the link between between family light work and social behavior.

The Syrian war is entering its 10th year and the majority of Syrian refugees are likely to stay in exile for years to come. Refugee minors are not only very likely to have gone through traumatic experiences in their home countries, but have to deal with new challenges upon arrival in the host country. Studies on the determinants of child labor show that changes in parent's wages, availability of credit, and situations of acute poverty matter (Ray, 2000; Grootaert, 1999). It is no surprise that refugee minors face more threats to their personal development than the average child does

[1] 'Child labor' basically refers to: 1) Work carried out by minors below the legal minimum working age of usually 15 years old (although 14 years old is also possible in countries with undeveloped economies), and 2) 'worst forms of child labour', namely 'work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development' (ILO, 2017).

(Verme et al., 2016). Although seeking refuge across borders provides safety from immediate threat, it can also be a critical situation characterized by a progressive deterioration of resources such as savings and possessions. It has been reported that refugee families feel forced to rely on their children as *breadwinners* and *carers*[2] as a result of - in part - altered family dynamics (Plan, Lebanon Crisis Response, 2017). As late childhood and early adolescence are crucial stages for the development of social behavior (Fehr et al., 2008), the burden of contributing to the household can have a negative effect on child development that encompasses adapting behavior that is socially desirable (Becker, 2007; The Children's Society., 2020). Child development and the integration of minors in the host society is a matter of vital importance for social cohesion in the region. In particular, poor child development can negatively affect the way in which children interact with each other and grow up to be a healthy and productive part of society (Dahl et al., 2018); and, in general, it is an obstacle for economic growth (Gertler et al., 2014). The Syrian war and its resulting refugee crisis constitutes a current context in which the question of the effects of light family work on social behavior looms large.

To answer this question, I conduct experimental games with Syrian refugee minors. I ask if - and to what extent - providing family work in form of caregiving negatively affects social behavior among Syrian refugee minors. For this purpose, two one-shot games, namely a dictator game (DG) and a simplified version of the prisoners' dilemma (PD game) with no feedback on the decision of the partner, were conducted in the Bekaa valley in Lebanon. To quantify their level of engagement in light family work, a post-experimental brief survey was distributed in which participants stated whether they were caregivers and whether they helped with the harvest among the usual sociodemographic questions.

[2]This study refers to young carers following the definition of Becker (2007): "children and young persons under 18 who provide care, assistance or support to another family member. They [...] assume a level of responsibility that would usually be associated with an adult."

This study shows empirical evidence of a negative association between family work and prosocial behavior: Syrian refugee minors, who have to take care of young, old or sick family members at home, are less cooperative and less egalitarian when it comes at a personal cost compared to non-young-carers. Females are not systematically more relied upon as caregivers, however, males self-report significantly higher levels of overall happiness than females. Moreover, there is no significant evidence of a gender difference in behavior. Finally, being a carer coincides with fewer Lebanese friends and with carrying out house chores. The lack of leisure time and the burden of additional responsibility of carrying out several household activities illustrate the multidimensional nature of this issue as several aspects of a child's life are compromised by time-consuming working activities. These results point to the direction of a negative link between the burden of family light work and the process of adapting prosocial behavior during childhood.

The contribution of this study is two-fold and concerns both the nature of the sample and the method of the study. First, to this date, there is no published experimental essay in economics conducted with Syrian refugee minors to analyze the link between prosocial behavior and children engaged in light family work. The present study contributes to the strands of literature on refugee studies and child development by tackling the issue of employment among minors in the specific context of asylum. Second, conducting experimental games to measure prosocial behavior (instead of inquiring about behavior through surveys) is new to the study of children in employment and its link to child development.

The outline of this study is organized as follows. In the next section, I will touch upon the literature to which this study contributes. Then, the theoretical framework and the hypotheses are introduced. In Section 4, the Lebanese context is described. The experimental design is presented in Section 5, followed by the description of the

procedure of the study in Section 6. Participants' characteristics are described in detail in Section 7. Section 8 presents the results of the games as well as of covariates of caregiving. Finally, Section 9 concludes, followed by the discussion in Section 10.

6.2 Literature Review

6.2.1 Social Behavior and Child Development

The study of social behavior among minors has become popular as the interest is increasing in how social behavior develops during childhood in order to better comprehend adult behavior.[3] The question of whether minors act rationally (in terms of payoff maximization) was postulated almost two decades ago. In their seminal work, Harbaugh et al. (2001) and Harbaugh et al. (2003) first analyzed how minors make economic decisions in experimental setups measuring rational behavior through revealed preferences. Their findings show that minors make choices that are mainly in line with both utility maximization and strategic behavior. However, the differences in age regarding preferences for fairness point to a process of learning social preferences - or socialization - throughout childhood. Thus, preferences for altruism, conditional cooperation, and equity are adapted gradually during the first two decades of life and are expected to change little afterwards (Harbaugh et al., 2003).

Several subsequent studies go along these lines and underline the fact that children adapt prosocial behavior during childhood and early adolescence such as inequality aversion. Prosocial behavior is broadly defined as a behavior motivated by a concern for others' well-being that is aimed at benefiting others (Staub, 2013). For instance, Fehr et al. (2008) explore prosocial behavior in early stages of life. Their findings

[3]For a comprehensive review on the development of research on behavior among minors see Sutter et al. (2019).

point to the development of egalitarian sharing during childhood. They show that inequality aversion develops between the ages of 3 and 8 and that at ages 3 and 4 the majority of children are self-interested. In particular, Fehr et al. (2013) further analyse egalitarianism, spitefulness, and altruism with the addition of parochialism - i.e. the difference between an in- and an out-group partner - among a sample of over 700 minors. While egalitarianism remains high at the age of 8 to 11 years old, altruistic motives become more salient later on during adolescence. Overall, spitefulness strongly decreases with age and, most interestingly, parochialism develops during adolescence presumable in the course of socialization due to increasing exposure to membership in new social constellations. This experiment points to a parallel development of altruism and parochialism during early adolescence. Finally, Cárdenas et al. (2014) study the cultural aspect of the development of socioeconomic behavior in childhood. Overall, they find no robust difference among cooperation rates between Colombian and Sweden children in their experimental setup. Yet, Colombian girls cooperate less than Swedish girls. This suggests that differences in cooperation between minors may differ across countries pointing to the important role of socialization which is culture specific. Child development seems to matter for the adaption of social behavior. When this process is disrupted social behavior could remain undeveloped with negative effects for the structure of society as a whole as other-regarding preferences are fundamental for the ability of individuals to cooperate in large groups of genetically unrelated individuals (Henrich et al., 2005; Fehr et al., 2008). This study contributes to the literature of the development of social behavior during childhood by focusing on preferences for altruism, egalitarianism, spitefulness, and cooperation, and the possible links between these preferences among young participants who belong to a non-WEIRD society (Henrich et al., 2010).[4]

[4]By the acronym 'WEIRD' Henrich et al. (2010) highlight the fact that the main body of

6.2.2 Family Work and Child Development

Qualitative studies have shown - albeit not with refugee minors - that engaging in caregiving and child labor can be detrimental for minor's well-being and their emotional and professional development. Al-Gamal et al. (2013) interviewed a total of 4000 minors in Jordan. Their results show that minors who report to be both attending school and working are more likely to show psychosocial problems compared to children who only work or who only attend school. Moreover, in their study with Ethiopian child laborers, Fekadu et al. (2006) found that childhood behavioral and emotional disorders are more likely to appear among child laborers than among non-laborers. Further down the road, adults who were former child laborers are more likely to behave in a violent and antisocial way (Kerig and Becker, 2015). This empirical evidence points to a negative relation between child labor and child development in particular. In general, early interventions in child development show an increase of a forth of average earnings from a full time job (Gertler et al., 2014) and it has been estimated that programs for early child development generate a benefit of 7.3 dollars for every dollar invested (García et al., 2017). Put simply, investment in child development yields returns for the individual and for the society as a whole. The importance of child development for the individual and for society as a whole is a main driver of the motivation of this study.

Caregiving has also been associated with negative behavioral outcomes. Young caregivers in the USA are more likely to show anxious or depressed behaviour, and behave antisocially, particularly at school compared to those who are not caring for a family member (National Alliance for Caregiving in Collaboration with the United Hospital Fund, 2005). But also, social isolation, emotional suffering, and

research is conducted with western, educated, industrialized, rich, and democratic (WEIRD) participants. This begs the questions of the accuracy of the understanding of human behavior and psychology as most people in the world are not WEIRD.

shouldering heavy responsibilities are some of the negative impacts experienced by young caregivers interviewed in Zimbabwe (Robson et al., 2006). Yet, there is also evidence of positive outcomes prescribed to minor's caregiving. Among others, a sense of responsibility, maturity and empathy haven been associated by minors in caregiving activities (Evans and Thomas, 2009; Stamatopoulos, 2018). Possibly, the positive effects mentioned mirror the emotional framework in which caregiving is performed, namely, the family. This particular context is characterized by attachment, reciprocity, a sense of duty, and affection among others. However, Stamatopoulos (2018) coins the term 'young carer penalty' as she finds that the disadvantages of caregiving outbalance the benefits reported by caregiving minors who face long-term harm to their emotional, social, and professional developments. In the specific context of this study, it is highly likely that, rather than being a volunteer choice made by minors, caregiving and child labor usually come as an imposed mean to address an acute need in the family (Evans and Thomas, 2009; Becker, 2007). I contribute to this literature by measuring prosocial behavior and studying its link to light family work among Syrian refugee minors.

6.3 Theoretical Framework and Hypotheses

The most important place in which prosocial behavior is acquired is in the family. By now, some scholars refer to this process as 'socialization' which involves the acceptance of conventional forms of behavior to facilitate the smooth conduct of group interaction (Grusec, 2011). In psychology, parenting is seen as a powerful tool for socialization due to the principal caregiving role of parents, particularly because they control resources and manage children's environment. However, for some minors this might not be the case. When minors have to shoulder responsibilities that would otherwise be done by adults - their parents for instance - the process of socialization

is disturbed probably causing negative effects on child development. Assuming that prosocial behavior such as altruism is learned gradually during the first decades of life, the internalization of local norms and values play a fundamental role as they are adapted in individual preferences for social behavior during early socialization (Henrich et al., 2005). Thus, social development among minors is fundamental for prosocial behavior. Consensus is arising among biomedical researchers around the idea that adverse childhood experiences have deep-routed and long-term effects on both the neuro-regulatory system and behavior all the way through childhood into adulthood (Anda et al., 2010). The theoretical rationale underlying this process is known as 'safe base', a secure relationship which is key to the ability of children for obtaining fundamental social skills. The absence of a 'safe base' links early maltreatment and neglect with the later development of antisocial behavior (Kerig and Becker, 2015). This 'safe base' is commonly provided by a stable family structure that does not misses out on child development. It is likely that after fleeing from a civil war, family structures get distorted leading to a completely or partial loss of the 'safe base' with negative outcomes for child development. In this study, some Syrian refugee minors report having to take care of the young, the ill or the old at home - a task which is normally provided by an adult. This study sheds some light on the link between caregiving family light work and social behavior through testing the following hypothesis:

Hypothesis 1: Syrian refugee minors engaged in caregiving show lower levels of prosocial behavior compared to those who are not engaged in caregiving.

The gender dimension of socialization has also been studied previously. The empirical evidence points in the direction of a gender gap on altruism among teenagers but not among younger children (Harbaugh et al., 2003; Dreber et al., 2014). Not only norms and social behavior are internalized during the first two decades of life,

but also values are. Following Fan and Marini (2000), specific value orientations are acquired during late childhood and adolescence that can determine gender roles. For instance, gender stereotypes such as the role of women as *carers* for others and the role of men as *breadwinners* are influenced by the local values learned during childhood and adolescence. Syria ranks fairly low on the Global Gender Gap Report (2020), namely rank number 150 out of 153 countries, slightly above Pakistan, Iraq, and Yemen. The questions arises of a gender difference among Syrian refugee minors' prosocial behavior due to stereotypical gender roles. It is likely that Syrian females learn value orientations on the importance of being concerned for the well-being of others and, hence, show higher levels of a preference for prosocial behavior in the games. The gender difference in behavior based on the stereotypical role of females as being more unselfish and concerned about others' well-being is tested through the following hypothesis:

Hypothesis 2: Young Syrian females are more likely to show prosocial behavior compared to young Syrian males.

6.4 Background of the Study in Lebanon

The study took place within the context of the refugee humanitarian crisis in Lebanon. Lebanon has the highest number of refugees *per capita* worldwide; out of 6 people 1 is a refugee under the responsibility of the United Nations High Commissioner for Refugees (UNHCR).[5] In total, around 1 million are registered as Syrian refugees with UNHCR and reside mainly in Bekaa, Beirut, and North Lebanon (UNHCR, 2021). The whole country lacks official refugee camps and refugees live in informal tent settlements. Syrian refugees living in these settlements are at very high risk of suffering from poor living conditions, combined with financial, legal,

[5]Adding Palestinian refugees under UNRWA's responsibility the amount rises to 1 in 4 for Lebanon (UNHCR, 2017)

and security problems (Kazour et al., 2017). Following the UNHCR poverty line of US$ 5.25 (2005 PPP) *per capita* per day, 64% of refugees in Lebanon live under the poverty line (Verme et al., 2016). Even though child labor below the age of 14 years is illegal in Lebanon, it has become a growing concern mainly in the agricultural sector and mostly among Syrian refugees (Plan, Lebanon Crisis Response, 2017).

6.5 Experimental Design

The study consists of two main parts: the experimental games and the postexperimental survey. Two games were implemented in this study. The cooperation game - a novel version of the Prisoner's Dilemma developed by Cárdenas et al. (2014) for pre-adolescents - and three allocation games in form of a dictator game as introduced by Fehr et al. (2008).[6] The order of the games was permuted to control for possible order effects. The concluding survey included some basic sociodemographic questions and several questions from the Statistical Information and Monitoring Program on Child Labor (SIMPOC) which was initially developed by the ILO for stand-alone child labor surveys. This questionnaire was completed anonymously and privately.

6.5.1 Dictator Games

The dictator games (also referred to as allocation games) consist of three simple decision-making tasks. Participants have to choose between two differing allocations that assign points to themselves and a randomly chosen counterpart. The prosocial game depicts a choice between ten points for the decision maker and ten points for the recipient (10,10), and the allocation (10,0), ten points for the decision maker and zero points for the recipient. In the envy game a participant has to decide between

[6]The payoff scheme of the allocation games was standardized to match the cooperation game.

allocations (10,10) and (10,20). Finally, the sharing game describes a choice between (10,10) and (20,0). The payoff scheme of the allocation games can be described as follows. Be X_i and Y_i the two options in dictator game i; d(Y_i) denotes the payoff of the dictator and r(Y_i) the recipient's payoff in option Y_i of game i. The option Y_i, is clearly egalitarian, as it allocates the same amount of points to the dictator and the receiver (i.e., d(Y_i) = r(Y_i)). The option X_i is varied. In the prosocial game, the choice of X_1 creates advantageous inequality for the dictator (i.e., $d(X_1) - r(X_1) > d(Y_1) - r(Y_1)$). In the envy game, the option X_2 creates disadvantageous inequality for the dictator (i.e., $d(X_2) - r(X_2) < d(Y_2) - r(Y_2)$). Finally, in the sharing game, the option of X_3 creates again advantageous inequality for the dictator, but this time making an egalitarian choice is costly for the dictator ($d(X_3) > d(Y_3)$ and $r(Y_3) > r(X_3)$).

6.5.2 Simplified Version of the Prisoners' Dilemma

In the PD game, participants are randomly chosen to play in pairs and have to decide individually and privately in which way to divide a total of 10 balls. This game is a a continuous prisoners' dilemma, since it is a one-shot, two player task, in which participants take ten decisions sequentially without feedback during the decision-making process. Each participant decides between a private bin that gets him three points for each ball deposited in it ('3 points for yourself and 0 points for the other player') and a public bin that gets two points per ball per child ('2 points for yourself and 2 points for the other player'). The 20 balls were placed in the middle of the library room and bins were at each end, so that each child had her own private and public bin and had to run from the middle to her end with the balls one after another.[7] This combination of some physical exercise, effort, and

[7]The baskets were labelled with a 'Me' and 'Me and You' to make the difference between the private and the public baskets visible.

pay-off scheme facilitates the understanding of an experimental set-up for school-aged-children (Cárdenas et al., 2014). The single measure of cooperation in this game is the total number of balls positioned in the public bin per child. At the end of the study, each child earned a different amount of points depending on their decisions and the decisions of the other player, ranging from 20 to 50 points. Participants were the only ones who could see the interior of their baskets during the game and the number of points was not announced publicly.

6.6 Procedure of the Study

This study was conducted in May 2018 in one of the portable schools established by a Lebanese NGO with the aim of bringing quality education and a safe space to around 650 Syrian refugee children, who live in informal tent settlements in the Bekaa Valley. The Lebanese NGO was formally contacted per email after establishing a connection to one of the financial partners in Germany.[8] The study took place during school time under the supervision of a school tutor and at least two experimenters. The study was conducted with pen and pencil on paper and comprehended four sessions - three with 20 students and one with 22 students - that lasted on average 2 hours each. Each participant had a randomly distributed ID to avoid revealing their names. The study was developed in English, but it was conducted in Arabic. The English version was translated by Arabic speaking researchers from the University of Hamburg.[9] The instructions of the games were written in a clear, simple, and easy to understand language as were the survey questions. To guarantee children's attention the instructions were not just read out loud, instead, an Arabic speaking researcher from the University of Hamburg explained the games

[8]Several Skype conversations and email exchange with the project manager followed - in which I introduced myself and explained the scope of the study - before finally entering the library full of a majority of enthusiastic children.

[9]To guarantee proficiency in Syrian dialect, the translator was of Syrian nationality.

going through different scenarios each time and adding oral control questions at the end of each instruction set. Further questions were answered privately. The overall activities designed for this study were somewhat equal to those that children would do during a normal day of school, containing some physical exercise, and answering some questions. The game was incentivized, participants were informed (anonymously through their personal ID) about their number of points gained in the games. At the end of the study, the 'market place' was opened in which points were exchangeable for different child-friendly goods at an exchange rate set up by the experimenter. The total amount of points was not revealed publicly and each child could privately exchange her points for goods in the 'market place'. To avoid satiation effects, the 'market place' had different goods for exchange and their popularity among children was consulted with the project manager beforehand (i.e. lollipops, colorful pencils, balls, bubble gums, crayons, etc.).

This study was part of a larger institutional review board (IRB) report on research with Syrian refugees to revise the methods proposed. In addition, the content of the study was approved by the Lebanese NGO, to ensure that the study could not cause any sort of emotional stress, given the tense social and political situation in the region. An informative flyer in Arabic about the scope of the study was sent to the project manager, who shared it with the school supervisors and tutors. Tutors then informed the students - who were randomly chosen at school - about the study. The students were given another flyer with informational content and an opting-out consent form for their parents.[10] In case of opting-out, parents were asked to return a signed short note with the disapproval to participate. Additionally, at the beginning of each session, the experimenter asked the students for their oral assent to participate in the study in order to take student's willingness to participate into

[10]For logistical reasons it was advised by the NGO on-site to implement an opt-out system as families were already familiar with it.

account.[11] Participants were then reminded about their rights and their anonymity was explained (we kindly asked them to not write their names on the paper-based survey). It was assured that the information will only be used for academic research and, finally, it was also made clear that participants could skip any survey questions they wished and they could quit the study at any time.

6.7 Participants' Characteristics

Table 6.1 summarizes information regarding some sociodemographic aspects. On average, participants were around 12 years old at the time of the study. Around 54% of participants are females. The number of younger siblings ranges between 0 and 10 and the average is 1.55. Around half of participants stated to have Lebanese friends. Almost a fourth of the sample pertains to a low socioeconomic status. Virtually a third of participants report to have experienced economic loss, when comparing the socioeconomic status in Syria and in Lebanon. The overall level of happiness with their lives in the present does not appear to be worrisome: 3.975 in a scale with a maximum of 5. However, females significantly report a lower level of overall happiness compared to males (3.56 compared to 4.42).[12] Around 83% of participants stated that they provide caregiving ('help at home taking care of the sick, the old, and the young'), out of which 31 are males and 36 are females. There is no significant difference between genders in providing caregiving. Approximately, 4% stated that they work in the harvest. This number is relatively low compared to the report on child labor among Syrian refugee children in Lebanon published by Habib et al. (2019).[13] Moreover, a majority of 89.5% states to run house chores

[11] No child opted out and one did not give her oral assent.

[12] Wilcoxon rank sum test: p-value = 0.0080

[13] Habib et al. (2019) found that around 55% of Syrian refugee minors were working at the time of the study, out of which 75% were engaged in the agricultural sector. Yet, only around 18.3% of the working minors were participating in some form of learning activity at the same time.

during their free time. Finally, regarding the intensity and the company during the work activities, 20% of participants stated to have contributed to the household the week before the study was conducted and around one third did so with the present of at least one of their parents.

Table 6.1: Sociodemogrpahic Variables

Variable	N	Mean	St. Dev.	Min	Max
Age	80	11.775	1.006	9	14
Female	82	0.537	0.502	0	1
Younger siblings	82	1.549	1.737	0	10
Lebanese friends	81	0.543	0.501	0	1
Low socioeconomic status	79	0.228	0.422	0	1
Economic loss	74	0.311	0.466	0	1
Happiness	79	3.975	1.230	1	5
Carer	81	0.827	0.380	0	1
Works in harvest	82	0.037	0.189	0	1
House chores	76	0.895	0.309	0	1
Worked last week	82	0.207	0.408	0	1
Works with parents	82	0.341	0.477	0	1

'Age' is a continuous variable from 9 to 14 years old. 'Female' is a dummy variable describing the gender of the participants. 'Younger siblings' is a continuous variable from 0 to 10. 'Lebanese friends' is a dummy variable that denotes whether participants have friends with the Lebanese nationality. 'Low socioeconomic status' is a dummy for participants who currently belong to the lowest economic status. 'Economic loss' is a dummy variable for those participants who have experienced an economic loss due to the war. 'Happiness' is a categorical variable ranging from the lowest 1 to the highest 5. 'Carer' is a dummy describing the engagement in caregiving in the family. 'Works in the harvest' denotes those participants who state that work in the harvest. 'House chores' is another dummy variable for those who state that they run chores for the household. 'Worked last week' and 'works with parents' are dummies describing these aspects of children's employment.

6.8 Results

6.8.1 Descriptive Statistics of the Games

Figure 6.1 shows the relative frequency of egalitarian choices throughout the three DG with 95% confidence intervals.[14] Remember that the egalitarian choice in the prosocial game shows a preference for avoiding advantageous inequality at no personal cost in order to distribute points equally, while in the envy game the equal split avoids a distribution with disadvantageous inequality (also at no individual cost). In the sharing game, the egalitarian choice is costly for the participant as she decides to forgo 10 points in order to choose an equal distribution avoiding advantageous inequality. Around 49% of participants choose the egalitarian option in the prosocial game, compared to around 60% of egalitarian choices in the envy game and roughly 26% in the sharing game. The proportion of participants choosing the egalitarian option in the sharing game is significantly different to the proportions of participants choosing the egalitarian option in both the prosocial and the envy games.[15] Results indicate that participants lower their willingness to choose the equal split of points when it is costly to them. These results are in line with previous findings, which also find that the willingness to equally distribute the amount of points significantly decreases when it becomes costly to the individual compared to a scenario with an equal split without costs (Fehr et al., 2008, 2013).[16]

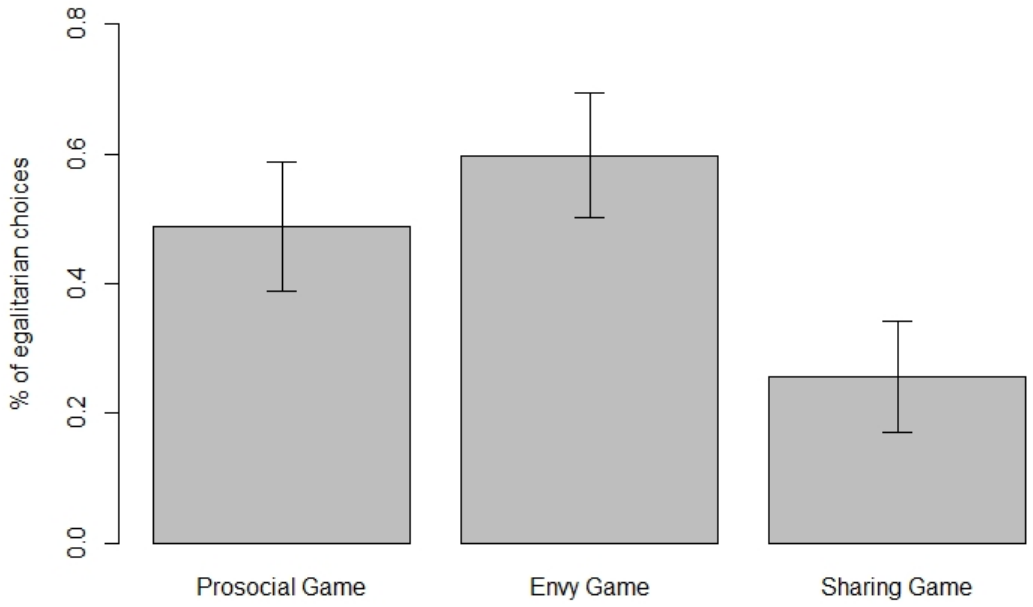
Table 6.2 summarizes the different behavioral types that can be derived from the pattern of choices per participant throughout the three DG. Overall, three behavioural

[14]The open-source statistical software R was used for the analysis.

[15]For the prosocial game and envy game: 2-sample test for equality of proportions with continuity correction: p-value = 0.2099; for the prosocial game and sharing game: 2-sample test for equality of proportions with continuity correction: p-value = 0.0036; for the envy game and sharing game: 2-sample test for equality of proportions with continuity correction: p-value = 0.0000

[16]See Figure 6.A.I in the Appendix for a distribution of egalitarian choices throughout the games according to caregiving among participants.

Figure 6.1: Relative Frequency of Egalitarian Choices across Games



types are classified, following a similar classification in Fehr et al. (2008): egalitarian, altruistic, and spiteful. Egalitarian participants choose either the equal split in all three games (i.e. (10,10), (10,10), and (10,10)) or in all games except for when it becomes costly to share in the sharing game. Altruistic participants choose the option that increases the payoff of the receiver in all three games or in all games except for the sharing game. Finally, spiteful participants are those who choose the option that reduces the payoff of the receiver in all three games.

Following this classification, Figure 6.2 shows the relative frequency of behavioral types among participants. 25.6% of participants fall under the egalitarian type, while there are 23.2% altruist and 31.7% spiteful participants.[17] Although 29.55%

[17] 19.5% of participants do not follow any of the behavioral patterns explained above. Out of this 19.5% there exist the following mixed behavioral patterns: 68.8% choose X_1, X_2, X_3 (in points: (10,0),(10,20),(20,0)), 12.5% choose X_1, Y_2, Y_3 (in points: (10,0),(10,10),(10,10)), and

Table 6.2: Definition of Behavioral Types

Type	Prosocial Game	Envy Game	Sharing Game
Egalitarian	(10,10)	(10,10)	(10,10)
	(10,10)	(10,10)	(20,0)
Altruistic	(10,10)	(10,20)	(10,10)
	(10,10)	(10,20)	(20,0)
Spiteful	(10,0)	(10,10)	(20,0)

of females are altruists and 15.79% of males are altruists, there is no statistical significant difference in the proportion of behavioral types among genders.[18] These results hint at an absence of gender difference in prosocial behavior. The modal type is the spiteful behavioral type. This resonates with the fact that only 25.61% of participants chose the egalitarian option in the sharing game and, hence, prefer an advantageous unequal distribution in this game (in points: (20,0)). This share of the spiteful behavioral type is clearly higher than the proportion of spiteful participants found in Fehr et al. (2008), who show a peak of spitefulness of 22% among participants who are between 3 - 6 years old that decreases from there on, and slightly higher than the share of 23% of spiteful participants who are on average 12 - 13 years old found in Fehr et al. (2013). These differences post the question of an environmental or cultural effect on the development and adaptation of preferences for egalitarianism and a decrease of the preference for spitefulness during early adolescence.[19]

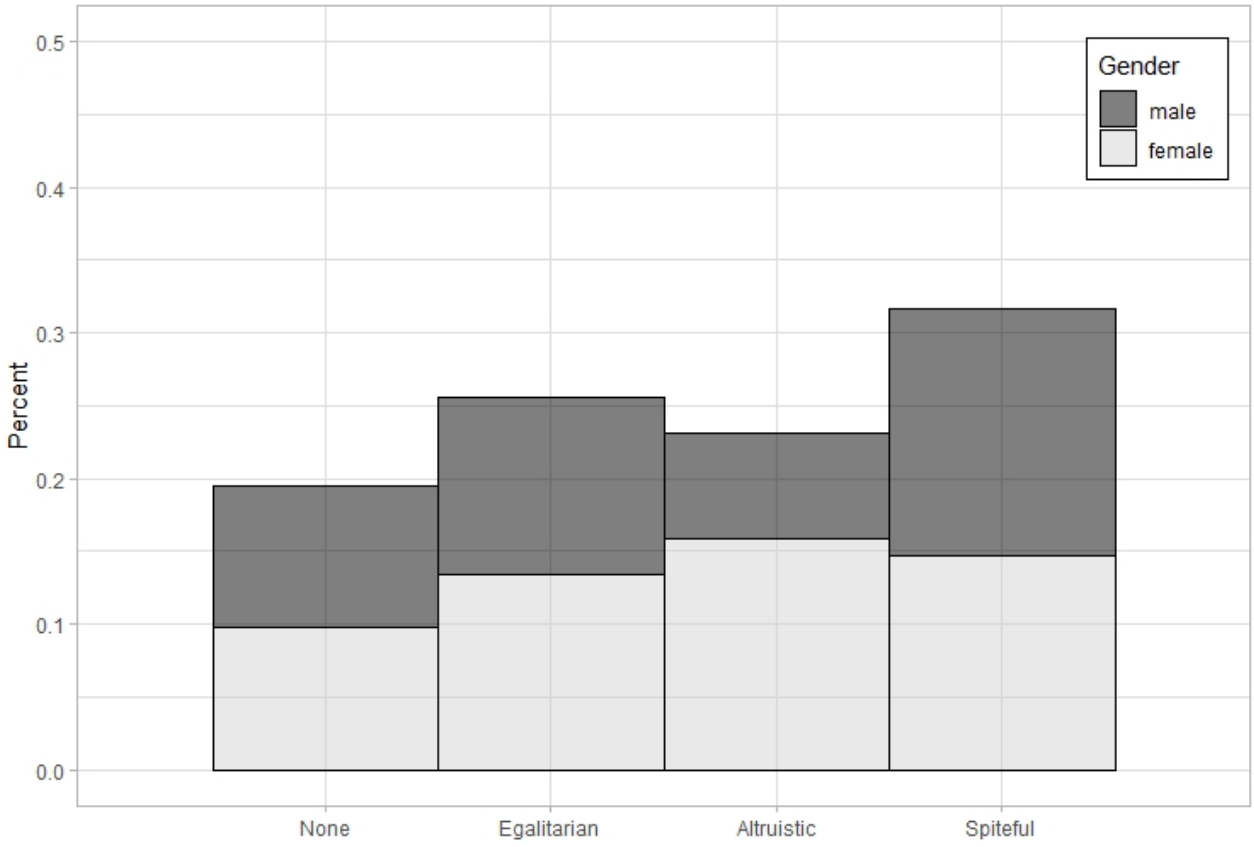
Moving forward to the descriptive statistics of the PD game, Figure 6.3 shows cooperative behavior. Bars display the proportion of individuals who placed between

18.8% choose X_1, X_2, Y_3 (in points: (10,0),(10,20),(10,10)).

[18] For no behavioral type: 2-sample test for equality of proportions with continuity correction: $\chi = 0.0023$, df = 1, p-value = 0.962; for egalitarians: 2-sample test for equality of proportions with continuity correction: $\chi = 4.059\text{e-}31$, df = 1, p-value = 1; for altruists: 2-sample test for equality of proportions with continuity correction: $\chi = 1.4635$, df = 1, p-value = 0.2264; for spiteful: 2-sample test for equality of proportions with continuity correction: $\chi = 0.47699$, df = 1, p-value = 0.4898.

[19] See Figure 6.A.II in the appendix for the distribution of behavioral types according to whether participants are caregivers or not.

Figure 6.2: Relative Frequency of Behavioral Types divided by Gender

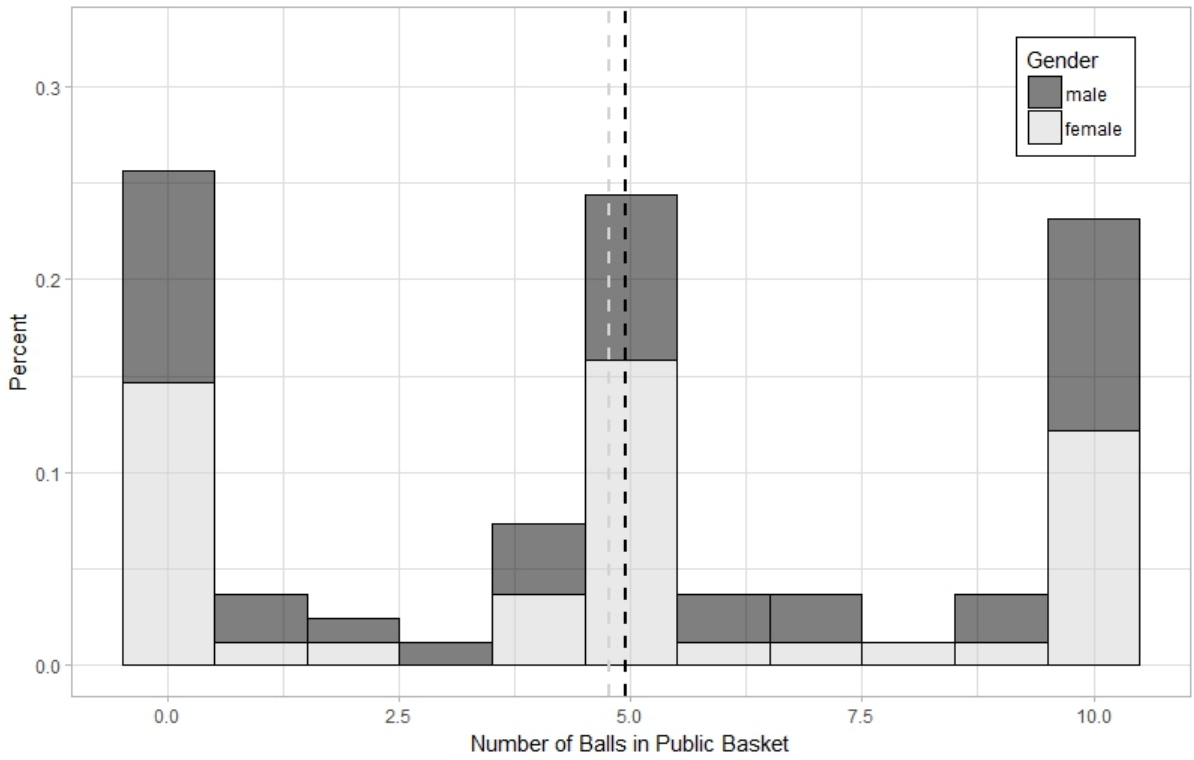


0 and 10 balls in the public basket, i.e. the measure for cooperative behavior in this game. Here again, there are no significant differences across genders in cooperation.[20] On average, 4.85 balls were placed in the public basket (regardless of participants' gender) out of a maximum of 10. This result is slightly above the average of 4.11 found by Cárdenas et al. (2014). Finally, analogous to these scholars, the distribution of the data has three modi: participants either cooperate to a full extent, not at all or they split the number of points equally. This result points to a common norm for cooperative behavior adapted during childhood.[21]

[20] Wilcoxon rank sum test: p-value = 0.8268

[21] See Figure 6.A.III in the Appendix for the distribution of cooperation according to whether participants are caregivers or not.

Figure 6.3: Distribution of Cooperation



6.8.2 Regression Analysis of the Games

In order to address the research questions regarding a link between caregiving and prosocial behavior as well as a gender difference in social behavior, several probit regression models are estimated along with an ordinary least squares (OLS) model. Table 6.3 shows average marginal effects for the probit models. The dependent variables for models (1) - (6) denote the egalitarian choice in the DG, while in for models (7) - (8) it is the number of balls shared in the public basket. Several control variables are introduced: a continuous variable for age, a dummy for being a female, a dummy for same gender of the counterpart (exclusively for the cooperation game), a continuous variables denoting the number of younger siblings in the family, a dummy variable for belonging to a low socioeconomic status, and, finally, a control dummy variable for the order of the games. All controls are inspired by previous

studies on other-regarding preferences of minors mentioned above (Fehr et al., 2008, 2013; Cárdenas et al., 2014).

Table 6.3: Regression Analysis on Egalitarian Choices and Cooperation

	Dependent variable:							
	Egalitarian Choice Prosocial game		Egalitarian Choice Envy game		Egalitarian Choice Sharing game		No. of Balls Shared Cooperation game	
	probit		*probit*		*probit*		*OLS*	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Carer	−0.137	−0.139	−0.166	−0.194	−0.257*	−0.310*	−1.158	−1.688*
	(0.140)	(0.151)	(0.129)	(0.131)	(0.138)	(0.160)	(1.073)	(0.964)
Age		−0.044		−0.042		0.004		−0.304
		(0.058)		(0.057)		(0.041)		(0.367)
Female		0.143		−0.145		0.123		−0.173
		(0.119)		(0.117)		(0.087)		(0.771)
Same gender								0.387
								(0.776)
Younger sibling		−0.045		0.056		−0.018		0.530**
		(0.036)		(0.0377)		(0.022)		(0.223)
Low socioeconomic status		−0.021		0.036		−0.012		−1.093
		(0.145)		(0.138)		(0.096)		(0.907)
Dictator game first		0.164		−0.164		0.441***		−3.963***
		(0.117)		(0.114)		(0.088)		(0.777)
Constant							5.800***	11.065**
							(0.970)	(4.596)
Observations	82	77	82	77	82	77	82	77
Adjusted R^2							0.002	0.288
Log Likelihood	−56.349	−49.967	−54.533	−48.686	−44.706	−27.361		
Akaike Inf. Crit.	116.699	113.933	113.067	111.371	93.412	68.722		
F Statistic							1.164 (df = 1; 80)	5.392*** (df = 7; 69)

Note: The different number of observations is due to the fact that the *age* variable contains 2 missing observations and the *low socioeconomic status* variable, 3. Asterisk denote the following significant levels: *p<0.1; **p<0.05; ***p<0.01. Standard errors are between parentheses.

Coefficients show an absence of significant determinants for choosing the egalitarian option in the prosocial and the envy games. Yet, there is evidence of a negative link between providing caregiving to family members and choosing the egalitarian option in the sharing game, i.e. when it becomes personally costly to choose an equal split. This points to the direction of a higher sensitivity for the costs of prosocial behavior that coincides with providing caregiving. Model (6) shows that being a carer decreases the likelihood of choosing the egalitarian option in the sharing game by 31 percentage points, *ceteris paribus*. In other words, those who engage in caregiving in their families, share less with their peers when it comes at a personal cost. Moreover, those participants who are caregivers cooperate less in the PD game (model 8)

when adding the usual sociodemographic control variables (marginally significant). In sum, the coefficient for caregiving is negatively associated but not significantly with the egalitarian options in the prosocial and the envy games, yet it is significantly and negatively associated throughout the two remaining games: caregivers share less when it comes at a personal cost and cooperate less than those who are not engaged in caregiving. These results partly corroborate the first hypothesis regarding the negative link between caregiving and prosocial behavior. Moreover, there is no effect of the gender dummy on the outcomes of the games supporting the descriptive statistics that already hinted in this direction. This result refutes the second Hypothesis of a gender gap in prosocial behavior possibly triggered by stereotypical gender roles adapted through socialization during the first two decades of life.

In line with Fehr et al. (2008) - who show that among children with siblings, the youngest children are 17% less willing to cooperate than children with younger siblings - having younger siblings is positively correlated with cooperation. Additionally, there is no income effect. Hence, the doubt whether scarce resources make the prices more valuable to participants from households with low income disappears. Furthermore, there is no significant effect of being paired with the same gender for the cooperation game. Finally, the dummy denoting the order of the games is significant. When there are multiple games implemented in a study, usually researchers ask themselves whether there is an effect of the order of the games on behavior. However, the value of asking this important question normally comes at a cost, for instance in terms of decreasing the sample size. In this study, the order of the games was altered to control for a possible effect on the outcome of the games. The order of the games has an effect on the choices in the sharing game and the cooperation game. Like this, it seems that participants who play the dictator games first, are more likely to choose the egalitarian option and subsequently cooperate less in the

PD game.[22] This is in line with Harbaugh et al. (2003), who devote an entire chapter to the effect of the order of the games among minors in their study of the dictator and the ultimatum games. They find similar results: when the dictator game is played first, the offers are higher than when it is played second. Here, playing the dictator games first increases the likelihood of choosing the egalitarian option by 44 percentage points (model 6) and it decreases cooperation by 3.96 units (model 8), *ceteris paribus*.[23].

Table 6.4 shows the behavioral type elicited through the three DG. All models display average marginal effects. There is no evidence of a link between caregiving and any of the behavioral types. Unfortunately, one possible reason for this lack of empirical evidence could be that there are around 20% of participants who do not follow any behavioral type, and, hence the total number of observations is limited (N= 19 for altruists, N=21 for egalitarians, and N=26 for spiteful participants). In this way, a higher number of observations could solve this challenge faced here. Results show, however, a marginal significant and negative correlation between having younger siblings and altruism. Moreover, the order of the games seems to negatively affect spitefulness as those who play the dictator game first are less likely to be spiteful. Finally, having a low socioeconomic status in Lebanon is marginally associated with revealing a mixed strategy in the DG. In sum, results show that

[22]During the experiment it was made clear that in the second game the participant pairs were newly matched. It was not stated at the beginning of the study that it was composed of two games, participants found out after the first game that there was a second one that followed. Yet, it could be the rare case that children misunderstood this important part of the instructions and interpreted both experimental games as one unique game.

[23]Order effects can confound results when there is a systematical association with a key independent variable. To further test whether one group is systematically more affected by the order of the games than the other (carers vis-à-vis non-carers) I conduct several Wilcoxon rank sum tests. As a result I can confirm that carers and non-carers are equally susceptible to the order of the games. For the cooperation game: carer (allocation game first) and carer (allocation game second) yields a p-value = 0.000035; and non-carer (allocation game first) and non-carer (allocation game second) yields a p-value = 0.0345. For the sharing game: carer (allocation game first) and carer (allocation game second) yields a p-value = 0.0016 and non-carer (allocation game first) and non-carer (allocation game second) yields a p-value = 0.0013.

behavioral types are not linked to being a carer, but to several sociodemographic variables and the order of the games.

Table 6.4: Regression Analysis on Covariates of Behavioral Types

	Dependent variable:							
	Altruistic type		Egalitarian type		Spiteful type		Mixed type	
	Probit		*probit*		*probit*		*probit*	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Carer	0.039	0.051	−0.176	−0.213	0.062	0.090	0.076	0.083
	(0.116)	(0.113)	(0.136)	(0.147)	(0.128)	(0.133)	(0.101)	(0.100)
Age		−0.015		−0.031		0.006		0.037
		(0.049)		(0.050)		(0.054)		(0.044)
Female		0.155		−0.037		−0.115		−0.026
		(0.097)		(0.105)		(0.111)		(0.093)
Younger siblings		−0.062*		0.017		0.036		0.005
		(0.035)		(0.030)		(0.031)		(0.028)
Low socioeconomic status		−0.176		0.204		−0.207		0.223*
		(0.086)		(0.137)		(0.110)		(0.131)
Dictator game first		0.154		−0.022		−0.189*		0.031
		(0.096)		(0.103)		(0.107)		(0.091)
Observations	82	77	82	77	82	77	82	77
Log Likelihood	−44.336	−36.668	−45.724	−41.451	−51.110	−42.745	−40.232	−35.526
Akaike Inf. Crit.	92.672	87.336	95.448	96.903	106.221	99.491	84.464	85.052

Note: The different number of observations is due to the fact that the *age* variable contains 2 missing observations and the *low socioeconomic status* variable, 3. Asterisk denote the following significant levels: *p<0.1; **p<0.05; ***p<0.01. Standard errors are between parentheses.

Now moving to a conjoint analysis of behavior in the games, Table 6.5 shows the relation between the different behavioral types (the baseline is a mixed behavioral type) and cooperation in the PD as the dependent variable. The reasons for analysing a possible link between behavior in both games is inspired by results among adults that show a strong correlation between behavior in a PD game and a subsequent DG. Capraro et al.'s (2014) results hint to the existence of a mutual prosocial motivation fundamental to both altruism and cooperation. In Table 6.5, the usual sociodemographics are added as controls as well as the variable determining whether participants are carers or not. The variable for being a carer is not significantly linked to cooperation. Here again, those participants with younger siblings cooperate more. Moreover, there is no evidence of a correlation between any behavioral type and cooperation compared to the baseline of a mixed behavioral type (model

1). Finally, the order of the games seems to affect behavior in general: when participants play the PD game in second place, they tend to cooperate less than when they play it in the first place.

In model 2, three interaction terms are introduced in order to test whether a behavioral type is more sensitive to the order of the games compared to those who have a mixed strategy. The coefficients for the behavioral types indicate the difference between each of them and those having a mixed strategy. Among participants who play the DG in second place, egalitarian participants cooperate more in the PD game compared to those with a mixed strategy, as shown by the variable *Egalitarian* (technically, an increase of cooperation by 3.7 balls, p-value < 0.05). The first treatment difference is shown with the variable *Dictator game first*: the coefficient shows the difference between *None∗Dictator game first* and *None*. It seems that the order of the games does not affect participants with a mixed strategy significantly. The following interaction term shows that the effect of the order of the games remains insignificant for participants who are spiteful, as shown by the coefficient for *Spiteful∗Dictator game first*. Yet, the relation between prosocial behavior and cooperation seems to be affected by the treatment: when the dictator game is played first, the cooperation levels of egalitarians and altruists decrease significantly.[24] This relation hints to a possible moral licensing bias displayed by participants who behave prosocially, i.e. participants allow themselves to be more selfish after behaving in a way that favors the other participants when they reveal their preferences in the dictator game in the first place (Blanken et al., 2015).

[24]F-tests for linear hypothesis testing of the effect of interaction terms yield significant results: *Dictator game first* + *Spiteful∗Dictator game first* $= 0$, $p - value = 0.02646$; Dictator game first + *Egalitarian∗Dictator game first* $= 0$, $p - value = 0.0005$; Dictator game first + *Altruistic∗Dictator game first* $= 0$, $p - value = 0.0033$.

Table 6.5: Regression Analysis on the Relation Between Behavioral Types and Cooperation

	Dependent variable:	
	No. of balls shared	
	PD game	
	OLS	
	(1)	(2)
Carer	−1.444	−1.263
	(0.989)	(0.986)
Age	−0.265	−0.260
	(0.372)	(0.373)
Female	−0.100	0.079
	(0.792)	(0.810)
Same gender	0.254	0.537
	(0.804)	(0.826)
Low socioeconomic status	−1.215	−1.610
	(0.974)	(1.004)
Younger siblings	0.503**	0.536**
	(0.232)	(0.232)
Spiteful	0.549	1.810
	(1.125)	(1.491)
Egalitarian	1.449	3.677**
	(1.131)	(1.610)
Altruistic	0.295	2.515
	(1.196)	(1.826)
Dictator game first	−3.918***	−1.030
	(0.819)	(1.732)
Spiteful * Dictator game first		−2.397
		(2.192)
Egalitarian * Dictator game first		−4.357*
		(2.257)
Altruistic * Dictator game first		−4.145*
		(2.481)
Constant	9.859**	8.000
	(4.835)	(4.952)
Observations	77	77
Adjusted R^2	0.277	0.291
F Statistic	3.909*** (df = 10; 66)	3.396*** (df = 13; 63)

Note: The number of observations is due to the fact that the *age* variable contains 2 missing observations, the *low socioeconomic status* variable has 3, the *economic loss* variable has 8 missings, and the *Lebanese friends* variable, 1. Asterisk denote the following significant levels: *p<0.1; **p<0.05; ***p<0.01. Standard errors are between parentheses.

6.8.3 Covariates of Young-carers

The particular reasons that coincide with minors' engagement in caregiving are very likely to be multifaceted, complex, and context specific. Factors such as gender, family structure, low income, and a lack of alternatives, have been shown to play a role in caregiving (Becker, 2007). To further investigate the possible covariates of Syrian refugee children who become carers within their family, the following Probit regression model is estimated. Table 6.6 shows the marginal effects of possible covariates of caregiving. This possible covariates are inspired by findings of previous research that might coincide with the need to become a caregiver in addition to the control variables used in the previous regression models. They can inform about possible underlying explanations for the negative association between caregiving and prosocial behavior, however they are mainly correlational and have to be interpreted with caution as an inverse causality cannot be excluded here. The provision of caregiving may limit the ability to catch-up or compete with others who do not have to engage in caregiving, for instance, as there is less time left for homework or studying. This may lead to systematic imbalance if, for example, females are more prone to engage in caregiving. Several studies have found that female young carers outnumber male young carers (Folbre, 2006; Stamatopoulos, 2018). However, in this study, there is no evidence of a gender difference in caregiving. Moreover, there is no significant age effect on caregiving. Additionally, the number of younger siblings does not coincide with being a carer; this underlines the fact that caregiving does not only coincide with having younger siblings but also includes taking care of older and sick family members as stated by participants.

Table 6.6: Average Marginal Effects of the Probit Regression Model on Covariates of Being a Caregiver

	Dependent variable:
	Carer
	Probit
Age	−0.008
	(0.035)
Female	−0.126
	(0.089)
Low socioeconomic status	−0.200
	(0.162)
Younger siblings	0.053
	(0.036)
Lebanese friends	−0.210**
	(0.084)
Economic loss	0.152**
	(0.071)
House chores	0.540**
	(0.225)
Observations	68
Log Likelihood	−22.14
Akaike Inf. Crit.	60.28

Note: The number of observations is due to the fact that the *age* variable contains 2 missing observations, the *low socioeconomic status* variable, 3, the *economic loss* variable has 8 missings, and the *Lebanese friends* variable, 1. Asterisks denote the following significant levels: *p<0.1; **p<0.05; ***p<0.01. Standard errors are between parentheses.

Moreover, Stamatopoulos (2018) shows that young caregivers rarely have time to socially interact with other children in their leisure time outside of school. In line with these findings, the model presents a negative and significant correlation between having Lebanese friends and being a carer. Since the school in which the study was conducted runs for Syrian refugee children exclusively, students can only make friends with Lebanese children during their leisure time out of school hours. Hence, having no or little spare time to interact with the Lebanese society outside of school can be detrimental for the integration in the host society. However, it could also be

the case that children become caregivers because they don't have Lebanese friends. As mentioned earlier, results cannot rule out a reverse causality and they ought to be carefully interpreted. The model further shows evidence for a positive and significant correlation between running house chores and caregiving. As Evans and Thomas (2009) mention, house chores are a further step that young carers take from *caring about* to *caring for* a family member. House chores are likely to be time-consuming, particularly in rural areas and irregular settlements as it is the case in this study, in which there is a highly likelihood of a lack of basic services such as water supply. Presumably, the lack of leisure time, which is defined as time free of constrains related to school and social obligations with the family (Kleiber and Barnett, 1980), is negatively associated with child development as socialization through both parenting and the free interaction with other children are important tools to learn behavior that is socially desirable such as inequality aversion that remains unfolded (ibid.). Finally, those participants who state having experienced an economic loss due to the war in Syria are more likely to engage in caregiving. This resonates with previous evidence on possible determinants of child labor, which include changes in parent's wages, availability of credit, and situations of acute poverty (Ray, 2000; Grootaert, 1999). All in all, these results show the multifaceted dimension of the link between caregiving and child development.

6.9 Conclusion

The current study analyses the relationship between caregiving and prosocial behavior of Syrian refugee minors, drawing on the tools provided by experimental economics. The findings show empirical evidence for a negative link between taking care of the young, the ill or the old at home, and economic preferences for cooperation and altruism. In this study, children who are caregivers at home share less

when it comes at a personal cost and cooperate less than those who are not taking care of other family members in the household. One could argue, that a person who supposedly and voluntarily has a taste for caring for the welfare of others is likely to refrain from free-riding and to cooperate and show prosocial behavior instead, if engaging in caregiving grows from a concern for others which is a precondition for preferences that take into consideration the welfare of others. To put it in the words of popular wisdom: *sharing is caring*. Yet, this study does not support this saying: those who care for their family do not share more with their peers. One could, hence, derive from this fact, that caregiving is not provided out of a precondition for caring for others that would support the prosocial behavior of children who help and cooperate with their families. In contrast, caregiving is more likely imposed on minors who are subject to carrying this burden of responsibility that an adult should be providing that would point to the fact that minors are obliged to meet family needs. The resulting burden of caregiving and lack of leisure time may disrupt the process of socialization. Given the fact that adversities during late childhood and early adolescence can affect behavior negatively, they may eventually have a further impact on the quality of institutions and the reconstruction of the Syrian society, since children are an important part of the future.

Further results show that participants with younger siblings cooperate more than those without younger siblings, in line with previous literature. Regarding the behavioral types, this study does not show evidence for covariates that may influence behavioral patterns in the DG. Finally, the presence of an effect of the order of the games is worth mentioning as it does not affect all behavioral types equally. Participants who behave prosocially in the first game, tend to compensate this behavior cooperating less in the subsequent PD game and, hence, possibly show moral licensing bias. This hints to the importance of controlling the order of the games for research undertaken with minors.

Final additional results from this study on the possible covariates of caregiving show that females are not systematically more relied upon as caregivers than males. Moreover, caregiving coincides with less leisure time. In this study, caregiving is associated with having less Lebanese friends from outside of school compared to those minors who do not provide caregiving. Furthermore, the fact that young-carers are likely to carry out other responsibilities in the household such as run house chores, puts to the front the intensity of the responsibilities that can go hand-in-hand with caregiving. Finally, economic conditions affect the process of becoming a caregiver in the family. Participants who stated having experienced an economic loss due to the war in Syria are also more likely to engage in caregiving than those who did not state experiencing economic loss. In sum, these covariates highlight the multifaceted, complex, and context specific nature of becoming a carer.

6.10 Discussion

Needless to say, participants in this study don't constitute a representative sample of all Syrian refugee children. It is important to avoid the generalization of these results, as participants belong to a very specific - though randomized - sample composed by particular vulnerable minors which are given the chance to attend school by a local NGO. It is worth discussing that results from this study cannot be interpreted in a causal manner and cannot be generalized beyond the current study. The results found here cannot be extended to other Syrian refugee populations living in other countries nor can they be extended to other refugee populations beyond the Syrian one. The reasons for fleeing the home country during war happened under very specific circumstances that may vary even among the same nationality. Hence, hereby I acknowledge the possibility of self-selection among the sample in the current study, specially when it comes to covariates regarding background and personal

traits that could further affect behavior.

For future thorough investigation on light work in the household, a fine-grid framework is needed in which the difference between an inter-generational contract in a household and a worrisome burden of work for a child is developed. Caregiving can be an outcome of the interaction of several factors such as: the demand and the availability of informal care within a family or community, the deficiency of health and financial care, and the lack of income-generating opportunities. The purpose of this study is to present empirical evidence that sheds some light on the difficulties that young caregivers experience and the potential negative link between caregiving and child development through measuring prosocial behavior. As a final remark, the results presented in this study harmonize with the definition of the ILO of child labor (although caregiving is not officially recognized as child labor since it is mainly an unpaid service within the own household). Child labor is defined as "work that deprives children of their childhood, their potential and their dignity, and that is harmful to physical and mental development" (ILO, 2021). Some scholars do agree on the fact that unpaid caregiving is labor - to be exact, care-work - and should be addressed as such (Brown and Stetz, 1999). Yet, the purpose of this study is to deliver exploratory empirical evidence on the link between caregiving and prosocial behavior of minors and not to build on the care-work argument. Whether prosocial behvaior is susceptible to caregiving is a question that is still open to thorough investigation. However, one thing is clear, knowing more about the potential obstacles for the development of prosocial behavior during childhood and adolescence is a requirement for any significant intervention.

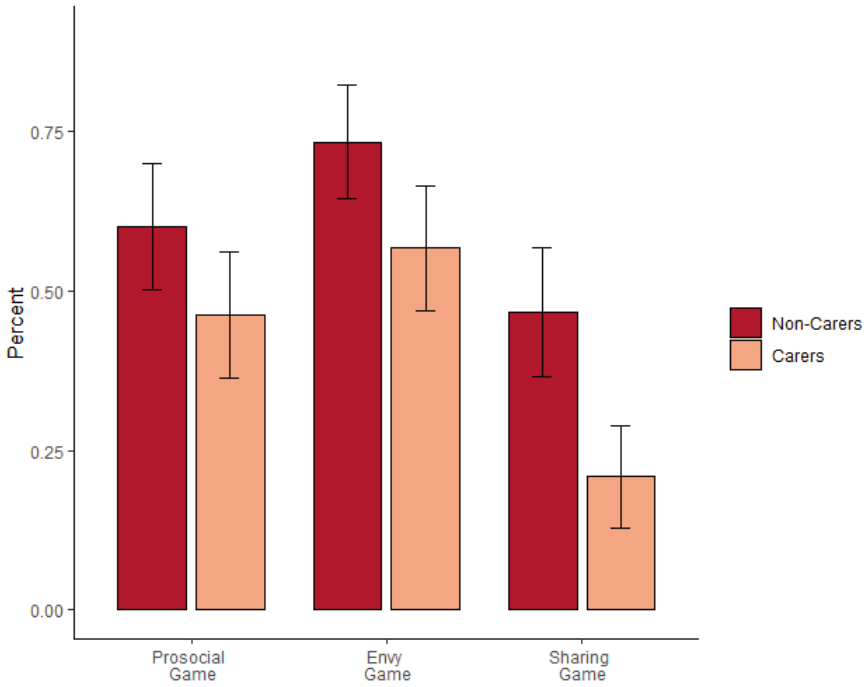
6.A Additional Statistical Analysis

6.A.I Proportion of Egalitarian Choices According to Caregiving

The following figure shows the relative frequencies of egalitarian choices throughout all three dictator games taking into account whether participants are engaged in caregiving or not. 95% confidence intervals are included. The figure shows a marginal significant difference between participants providing caregiving and those who don't when an egalitarian option becomes costly (sharing game).[25] Put simply, those who care, share less. This hints at a negative link between light family work and prosocial behavior due to a higher sensitivity towards a prosocial decision that is costly to oneself among participants who are engaged in caregiving.

[25]For the prosocial game: 2-sample test for equality of proportions with continuity correction: $\chi = 0.45696$, df $= 1$, $p - value = 0.499$; for the envy game: 2-sample test for equality of proportions with continuity correction: $\chi = 0.80109$, df $= 1$, $p - value = 0.3708$; for the sharing game: 2-sample test for equality of proportions with continuity correction: $\chi = 3.027$, df $= 1$, $p - value = 0.0819$.

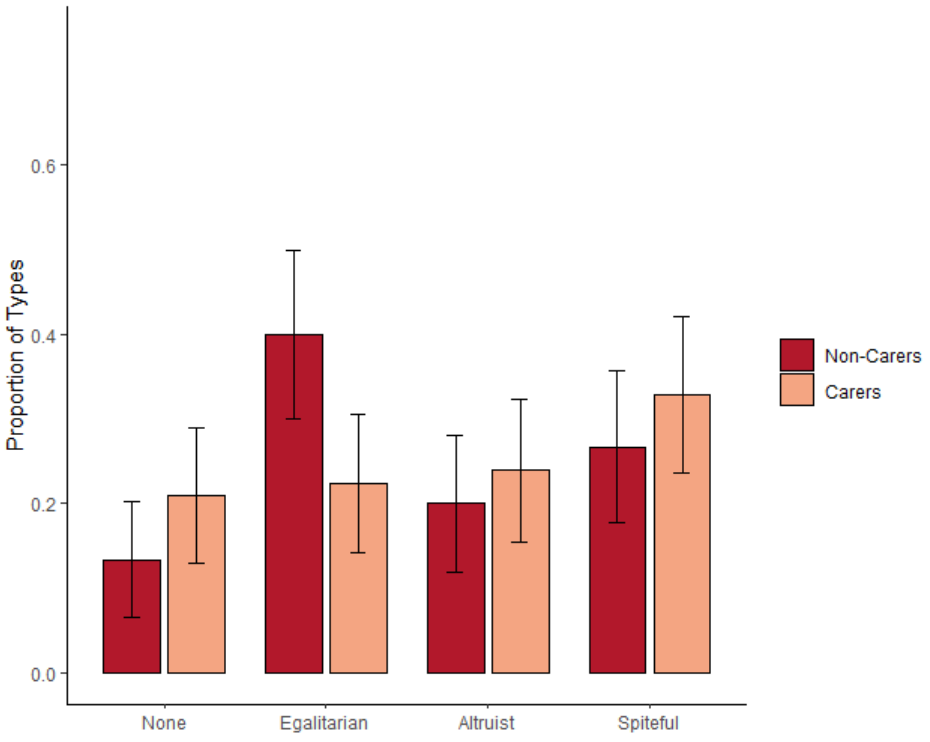
Figure 6.A.I: Relative Frequency of Egalitarian Choices



6.A.II Proportion of Behavioral Types According to Caregiving

The following figure shows the proportion of behavioral types according to whether participants are engaged in caregiving or not. Around 21% of caregivers are egalitarians compared to 40% of non-caregivers, however this difference is not statistically significant (2-sample test for equality of proportions with continuity correction: p-value = 0.2777). There is no evidence of a difference among those who follow a spiteful or no behavioral type at all (For no behavioral type: 2-sample test for equality of proportions with continuity correction: p-value = 0.7583; for spiteful behavioral type: 2-sample test for equality of proportions with continuity correction: p-value = 0.8751). For the altruist behavioral type there are unfortunately not enough observations for a statistical test between both groups.

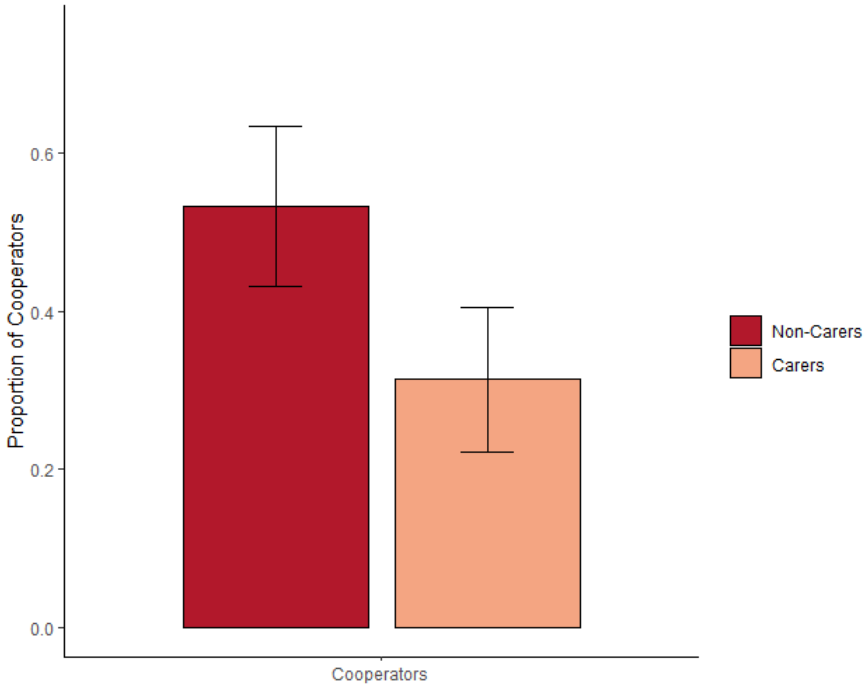
Figure 6.A.II: Relative Frequency of Behavioral Types divided by Caregiving



6.A.III Proportion of High-Cooperators According to Caregiving

To include the variable of interest regarding whether participants are engaged in caregiving or not, Figure 6.A.III shows the proportion of participants who cooperate according to caregiving. Here, cooperators are defined as those participants who share more than half of their points with the other participant in the PD game. 31.34% of participants who are engaged in caregiving contribute more than half of the balls to the public basket, while 53.33% of participants who do not provide caregiving share more than half in the PD game, however this difference is statistically insignificant (Fisher's Exact Test: p-value = 0.1383).

Figure 6.A.III: Relative Frequency of High-Cooperators divided by Caregiving



6.B Robustness Checks

6.B.I Egalitarian Choices and Cooperation

Here, a regression model is estimated without controlling for the order of the games. Again, caregivers are less likely to make the egalitarian choice in the sharing game compared to those who do not provide caregiving (decrease by 30.9 percentage points). Moreover, caregivers also share lower amounts of balls in the sequential PD game. Having a look at the sociodemographics, when boys play with other boys and when girls play with other girls there is a positive correlation with the amount of balls shared in the PD game. Additionally, students with younger siblings cooperate more, however those belonging to the low socioeconomic status cooperate less (model (4)). This last result could be explained by the fact that the 'special stuff' exchanged at the end of the sessions has a higher individual value for those with a lower financial household status.

Table 6.B.I: Average Marginal Effects of the Regression Model on Egalitarianism (1) - (3) and Cooperation (4) (without controlling for the order of the games)

	Dependent variable:			
	Prosocial game	Envy game	Sharing game	No. of balls shared
	probit	*probit*	*probit*	*OLS*
	(1)	(2)	(3)	(4)
Carer	−0.158	−0.176	−0.309**	−1.234*
	(0.148)	(0.133)	(0.146)	(1.119)
Age	−0.045	−0.040	−0.010	−0.179
	(0.058)	(0.057)	(0.049)	(0.426)
Female	0.161	−0.162	0.140	−0.742
	(0.118)	(0.114)	(0.100)	(0.889)
Same Gender				1.464*
				(0.869)
Younger Siblings (No.)	−0.037	0.049	−0.010	0.380**
	(0.036)	(0.038)	(0.030)	(0.258)
Low Socioeconomic Status	−0.009	0.024	0.015	−1.296**
	(0.144)	(0.138)	(0.123)	(1.055)
Constant				7.268
				(5.283)
Observations	77	77	77	77
Adjusted R^2				0.034
Log Likelihood	−50.921	−49.688	−39.313	
Akaike Inf. Crit.	113.841	111.376	90.627	
F Statistic				1.444 (df = 6; 70)

Note: Asterisk denote the following significant levels: *p<0.1; **p<0.05; ***p<0.01. Standard errors are between parentheses.

6.B.II Caregiving Dependent on the Behavioral Types

Here, as a robustness check we regress caregiving on the behavioral types from the DG game (model (1)) and on being a cooperator (measured by a dummy for those who share more than half) (model (2)). In this way, it is possible to exclude with high likelihood self-selection issues into caregiving due to social preferences for altruism, egalitarianism, or cooperation.

Table 6.B.II: Average Marginal Effects of the Probit Regression Model of Covariates of Caregiving Controlling for (1) the Behavioral Types and (2) Being a Cooperator

	Dependent variable:	
	Carer	
	probit	
	(1)	(2)
Age	−0.005	−0.004
	(0.032)	(0.036)
Female	−0.115	−0.134
	(0.084)	(0.092)
Low socioeconomic status	−0.212	−0.229
	(0.172)	(0.170)
Younger siblings	0.038	0.047
	(0.030)	(0.032)
Lebanese friends	−0.213***	−0.208**
	(0.081)	(0.084)
Economic loss	0.150**	0.144**
	(0.071)	(0.073)
House chores	0.610***	0.534**
	(0.233)	(0.236)
Spiteful	0.033	
	(0.104)	
Egalitarian	−0.103	
	(0.143)	
Altruist	−0.079	
	0.160)	
Cooperator		−0.101
		(0.098)
Observations	68	68
Log Likelihood	−21.226	−21.511
Akaike Inf. Crit.	64.451	61.022

Note: Asterisk denote the following significant levels: *p<0.1; **p<0.05; ***p<0.01. Standard errors are between parentheses.

6.C Instruction of the Games

Procedures

Each session in this experiment lasted approximately 2 hours for 20 children, including the sociodemographic questionnaire and the prize distribution. All participants privately exchange their points for sweets, stickers, crayons, etc., from the 'exchange shop' at the end of the session.

The sessions were run during two days. The instructions were presented orally (following the script attached below) at the beginning of each session with the help of posters. The instructor made pauses letting the children raise their hands for questions, which were answered privately. An English translation is presented below.

Dictator Game

Welcome to our game. Before we start, we will explain the rules of our game to you. From now on, please don't speak to your neighbors and listen carefully. You can earn points in this game which you can exchange for some 'special stuff' at the end of the game. It is important that you listen carefully now, to make sure that you understand the rules of our game. We will stop frequently during our explanation and allow you to ask questions. There are no right or wrong answers, it is your choice that counts. The others will not learn what your choice was. And your choices are not connected to your names, but to a personal ID that we will give you shortly before starting. It is important that you keep this number with you until the end. At the end, we will call you to the front one by one by your personal IDs so that you can exchange your points at the 'market place'. So here, every choice is anonymous and private.

Everybody OK so far?

We will play a game in which you have to decide how to divide points between yourself and another student. You will make three different decisions. We have brought an example here. Let's look at the example together (show the poster). In this game you get to decide how to divide the points between you and another student in this room. You all play person 1 and then we will match you in groups of two and randomly decide who of you get to implement their choices for the points payoff.

Everybody OK so far?

In the example poster, there are two possible ways to allocate the points: the option on the left-hand side and the option on the right-hand side. With option 'left' you get ten points and the other student with whom you play gets ten points. With option 'right' you get twenty points and the other student gets twenty points. Depending on which option you want to choose, you point to the left- or the right-hand side when you come to the front.

Everybody OK so far?

Let's assume that someone would like to divide the money according to the option 'right'. How much would he or she earn and how much would the other student with earn in this case? Right, he or she would get twenty points and the other student will get twenty points, too.

Everybody OK so far?

As we mentioned earlier, you will have to make decision three times between different allocations of points. The three decisions differ from each other in how the points that can be divided.

Control Questions

All subjects had to answer control questions in order to check the understanding of the experiment. These were posed out loud in the classroom until it was clear that everybody understood the game. Then, they were all called to the front by their IDs to privately choose between the real options of the game presented on posters to them.

Prisoners' Dilemma

Welcome to another game. Before we start, we will explain the rules of our game to you. From now on, please don't speak to your neighbors and listen carefully. You can earn points in this game which you can exchange for some 'special stuff' at the end of the game. It is important that you listen carefully now, to make sure that you understand the rules of our game. We will stop frequently during our explanation and allow you to ask questions.

Everybody OK so far?

We will play a game in which you have to decide how to divide ten balls between yourself and another student. For this purpose, you will have a basket in the middle of the room with your ten balls (either orange or yellow) and two other baskets at your end of the room with the labels 'Me' and 'Me and You'. If you decide to put a ball in the 'Me' basket you will get 3 points and the other player will get 0, while if you put the ball in the 'Me and You' basket you will get two points and the other player will get two points. You are only allowed to get a ball at a time from the middle of the room until you have allocated all of your ten balls. In this game we will randomly match groups of two people again. The total amount of points depends on your own decision plus the decisions of the other player.

Everybody OK so far?

In this example there are two balls in the 'Me' basket and two balls in the 'Me and You' basket of player 1. This means that he or she earns 6 points from the 'Me' basket and 4 points from the 'Me and You' basket and the other player earns 0 points from the 'Me' basket and 4 points from the 'Me and You' basket. So, in the end he or she has 10 points and the other player has 4 points. The total amount of points will depend on what player 2 decides. Both play at the same time without communicating with each other so they do not know what the other player does.

Everybody OK so far?

Control Questions

All subjects had to answer control questions in order to check the understanding of the experiment. Examples of distributions of balls were posed out loud in the classroom until it was clear that everybody understood the game. Then, they were all called to the front in randomly matched pairs by their IDs in order to privately choose between the 'Me' and the 'Me and You' baskets, ball per ball for ten times.

Chapter A Summaries

Chapter A. Summary of the Dissertation

This cumulative dissertation aims at contributing to the literature on what shapes economic preferences in the real-world settings of forced migration and civil war. All five essays have in common the implementation of experiments to study prevalent behavioral concepts, such as trust, altruism, risk-seeking, cooperation, peer punishment, and honesty. This dissertation starts by contributing to the literature on the behavioral effects of key aspects of environmental factors related to migration that are relevant for the hosting societies. Finally, it adds to the literature on the behavioral effects of the individual experience of civil war and child employment for society as a whole.

The first essay studies preferences for trust and trustworthiness of Syrian refugees living in Germany and how the ways they interact with the host society may shape their behavior towards another Syrian or a German participant. Empirical data shows that Syrian participants engaging in bonding networks positively discriminate against other Syrians. Staying in a refugee camp seems to be a key barrier to the proliferation of social networks between hosts and refugees. The second essay studies the possible effects of the current living conditions of refugees in Jordan on their economic preferences and their confidence in their future. Results show that feeling as if having no future coincides with both more egoistic and more risk-seeking behavior. Family separation and staying in a refugee camp in Jordan coincide with the feeling of having no future. The third essay studies the preference for truth-telling of Syrian refugees in Jordan and German, and with Germans, Jordanians, as well as with Syrians living in Syria. Results contribute to the literature on a universal preference for truth-telling. However, there are systematic differences in the frequency and the pattern of refraining from telling the truth between refugees and non-refugees that are associated with higher age; and a longer stay in the host country is positively correlated with a lower propensity to lie. In the fourth

essay, we ask whether the experience of war affects prosocial behavior and peer punishment by incorporating elicited beliefs into the analysis. Results show that war victimization coincides with antisocial punishment. The threshold of antisocial punishment is decreased by victimization especially when cooperators expect the worst (negative cooperation beliefs), and hence the experience of war negatively affects how peer punishment enforces social norms. Finally, the fifth essay studies an especially vulnerable group, namely, Syrian refugee children. This last essay raises the question of how the burden of engaging in caregiving to family members is linked to the economic preferences for altruistic sharing and cooperation. Results show that children who have to take care of young, old or sick family members from the same household, share less when it comes at a personal cost and cooperate less compared to those who do not provide caregiving.

In sum, this dissertation shows scientific evidence that contributes to two categories of experimental economics: 'searching for facts' and 'whispering in the ears of princes'. On the one hand, my co-authors and I add to the debate among experimentalists on what shapes economic preferences by conducting lab-in-the-field experiments mainly in naturalistic environments with migrants who have been forcedly displaced from their homes. On the other hand, we deliver empirical evidence for the possible links between human behavior and life experiences, and between living conditions derived from war and forced migration. A better understanding of these complex contexts is relevant for efficient policy recommendations that wish to rely on empirical evidence.

Chapter A. Zusammenfassung der Dissertation

Diese kumulative Dissertation ist ein Beitrag zum Diskurs über sozioökonomische Präferenzen im Kontext von Zwangsmigration und Bürgerkrieg. Alle fünf Essays verbindet die Durchführung von Experimenten, zur Untersuchung vorherrschender Konzepte der Verhaltensökonomie wie Vertrauen, Altruismus, Risikobereitschaft, Kooperation, Peer-Bestrafung, und Ehrlichkeit. Diese Dissertation beginnt mit einem Beitrag zu den Auswirkungen von Schlüsselaspekten spezieller Umweltfaktoren im Zusammenhang mit Migration auf das Verhalten von Geflüchteten, das für die Integration in die Aufnahmegesellschaften relevant ist. Schließlich ergänzt sie die Literatur zu den Verhaltenseffekten der individuellen Erfahrung von Bürgerkrieg und Kinderarbeit auf die Gesellschaft als Ganzes.

Der erste Essay untersucht Präferenzen für Vertrauen und Vertrauenswürdigkeit von in Deutschland lebenden syrischen Geflüchteten und wie die Art und Weise, wie sie mit der Aufnahmegesellschaft interagieren, ihr Verhalten gegenüber einem anderen syrischen oder deutschen Teilnehmenden beeinflussen kann. Empirische Daten zeigen, dass syrische Teilnehmende, die sich in *bonding* sozialen Netzwerken engagieren, andere Syrer positiv diskriminieren. Der Aufenthalt in einem Flüchtlingslager scheint ein wesentliches Hindernis für die Entstehung sozialer Netzwerke zwischen Gastgebern und Geflüchteten zu sein. Der zweite Essay untersucht mögliche Auswirkungen der aktuellen Lebensbedingungen in Jordanien auf die sozioökonomischen Präferenzen von Geflüchteten und auf ihr Vertrauen in die eigene Zukunft. Die Ergebnisse zeigen, dass das Gefühl, keine Zukunft zu haben, sowohl mit egoistischerem als auch mit risikofreudigerem Verhalten zusammenfällt. Weiterhin zeigen unsere Zahlen, dass die Familientrennung und der Aufenthalt in einem Flüchtlingslager in Jordanien mit dem Gefühl, keine Zukunft zu haben einhergehen. Der dritte Essay untersucht unsere Ergebnisse zur Ehrlichkeit bei einem Würfelexperiment mit syrischen Geflüchteten in Jordanien und Deutschland sowie mit Deutschen, Jordaniern und Syrern, im jeweiligen Herkunfstsland. Die Ergeb-

nisse tragen zur Literatur über eine universelle Präferenz für Ehrlichkeit bei. Es gibt jedoch systematische Unterschiede in der Häufigkeit und dem Muster dieser Präferenz zwischen Geflüchteten und Nicht-Geflüchteten. Die Daten zeigen, dass höheres Alter bei Geflüchteten und die Präferenz zur Wahrheit negativ korrelieren, während ein längerer Aufenthalt im Gastland einen positiven Einfluss auf diese Präferenz hat. Im vierten Essay fragen wir, ob die Kriegserfahrung das prosoziale Verhalten und die Peer-Bestrafung beeinflusst. Dabei wird beobachtet welchen Einfluss die Erwartungen an das Verhalten der Anderen haben. Die Ergebnisse zeigen, dass die Viktimisierung durch Krieg mit antisozialer Peer-Bestrafung einhergeht. Vor allem wenn Kooperatoren *das Schlimmste* erwarten (negative Kooperationserwartungen des Anderen), wird die Schwelle der antisozialen Peer-Bestrafung durch die Viktimisierung gesenkt. Somit wirkt sich die Kriegserfahrung negativ darauf aus, wie Peer-Bestrafung zu sozialen Normen beitragen kann. Schließlich untersucht der fünfte Essay eine besonders gefährdete Gruppe, nämlich syrische, geflüchtete Minderjährige. Dieser letzte Teil der Dissertation wirft die Frage auf, wie die Pflege von Angehörigen im eigenen Haushalt mit den sozioökonimischen Präferenzen für altruistisches Teilen und Kooperation zusammenhängt. Die Ergebnisse zeigen, dass Kinder, die junge, alte oder kranke Familienmitglieder betreuen müssen, weniger teilen und weniger kooperieren als diejenigen, die zuhause nicht arbeiten müssen.

Zusammenfassend zeigt diese Dissertation wissenschaftliche Belege, die zu zwei Kategorien der experimentellen Wirtschaftsforschung beitragen: ,,auf der Suche nach Fakten" und ,,flüstern in die Ohren der Fürsten". Auf der einen Seite tragen wir zur Forschung zur Prägung von sozioökonomische Präferenzen bei, indem wir *lab-in-the-field* Experimente hauptsächlich in naturalistischen Umgebungen mit Geflüchteten durchführen. Andererseits liefern wir empirische Belege für mögliche Zusammenhänge zwischen Lebensbedingungen und menschlichem Verhalten, die für effiziente Politikempfehlungen relevant sind.

Chapter B. List of Publications

El-Bialy, N., Fraile Aranda, E., Nicklisch, A, Saleh, L., and Voigt, S. (in press). A sense of no future in an uncertain present: Altruism and risk-seeking among Syrian refugees in Jordan. *Journal of Refugee Studies.*

List of Tables

List of Figures

Bibliography

Abbink, K. and Herrmann, B. (2011). The moral costs of nastiness. *Economic inquiry*, 49(2):631–633.

Abeler, J., Nosenzo, D., and Raymond, C. (2019). Preferences for truth-telling. *Econometrica*, 87(4):1115–1153.

Akay, A., Martinsson, P., Medhin, H., and Trautmann, S. T. (2012). Attitudes toward uncertainty among the poor: an experiment in rural ethiopia. *Theory and Decision*, 73(3):453–464.

Al-Gamal, E., Hamdan-Mansour, A. M., Matrouk, R., and Nawaiseh, M. A. (2013). The psychosocial impact of child labour in Jordan: A national study. *International Journal of Psychology*, 48(6):1156–1164.

Allen, R. (2010). The bonding and bridging roles of religious institutions for refugees in a non-gateway context. *Ethnic and Racial Studies*, 33(6):1049–1068.

Alpak, G., Unal, A., Bulbul, F., Sagaltici, E., Bez, Y., Altindag, A., Dalkilic, A., and Savas, H. A. (2015). Post-traumatic stress disorder among syrian refugees in turkey: a cross-sectional study. *International journal of psychiatry in clinical practice*, 19(1):45–50.

Anda, R., Tietjen, G., Schulman, E., Felitti, V., and Croft, J. (2010). Adverse childhood experiences and frequent headaches in adults. *Headache: The Journal of Head and Face Pain*, 50(9):1473–1481.

Andreoni, J. and Vesterlund, L. (2001). Which is the fair sex? gender differences in altruism. *The Quarterly Journal of Economics*, 116(1):293–312.

Andreozzi, L., Ploner, M., and Saral, A. S. (2020). The stability of conditional cooperation: beliefs alone cannot explain the decline of cooperation in social dilemmas. *Scientific reports*, 10(1):1–10.

Andrighetto, G., Zhang, N., Ottone, S., Ponzano, F., D'Attoma, J., and Steinmo, S. (2016). Are some countries more honest than others? evidence from a tax compliance experiment in sweden and italy. *Frontiers in psychology*, 7:472.

Aoun, A., Joundi, J., and El Gerges, N. (2018). Post-traumatic stress disorder symptoms and associated risk factors: A crosssectional study among syrian refugees. *British Journal of Medical Practitioners*, 11(1).

Ariely, D. and Jones, S. (2012). *The (honest) truth about dishonesty*. Harper Collins Publishers New York.

Balliet, D. and Van Lange, P. A. (2013). Trust, punishment, and cooperation across 18 societies: A meta-analysis. *Perspectives on Psychological Science*, 8(4):363–379.

BAMF, B. f. M. u. F. (2016a). Das bundesamt in zahlen 2015. asyl, migration und integration.

BAMF, B. f. M. u. F. (2016b). The stages of the german asylum procedure – an overview of the individual procedural steps and the legal basis. *Nuremberg: Federal Office for Migration and Refugees (BAMF)*.

Barr, A. and Serra, D. (2010). Corruption and culture: An experimental analysis. *Journal of Public economics*, 94(11-12):862–869.

Bauer, M., Blattman, C., Chytilová, J., Henrich, J., Miguel, E., and Mitts, T. (2016). Can war foster cooperation? *Journal of Economic Perspectives*, 30(3):249–74.

Bauer, M., Cassar, A., Chytilová, J., and Henrich, J. (2014). War's enduring effects on the development of egalitarian motivations and in-group biases. *Psychological science*, 25(1):47–57.

Baumeister, R. F., Vohs, K. D., and Oettingen, G. (2016). Pragmatic prospection: How and why people think about the future. *Review of General Psychology*, 20(1):3–16.

Becker, S. (2007). Global perspectives on children' s unpaid caregiving in the family: Research and policy on 'young carers' in the UK, Australia, the USA and sub-Saharan Africa. *Global Social Policy*, 7(1):23–50.

Bellows, J. and Miguel, E. (2009). War and local collective action in sierra leone. *Journal of public Economics*, 93(11-12):1144–1157.

Berg, J., Dickhaut, J., and McCabe, K. (1995). Trust, reciprocity, and social history. *Games and economic behavior*, 10(1):122–142.

Bicchieri, C. and Xiao, E. (2009). Do the right thing: but only if others do so. *Journal of Behavioral Decision Making*, 22(2):191–208.

Binswanger, H. P. (1980). Attitudes toward risk: Experimental measurement in rural india. *American journal of agricultural economics*, 62(3):395–407.

Bisin, A. and Verdier, T. (2011). The economics of cultural transmission and socialization. In *Handbook of social economics*, volume 1, pages 339–416. Elsevier.

Blanken, I., van de Ven, N., and Zeelenberg, M. (2015). A meta-analytic review of moral licensing. *Personality and Social Psychology Bulletin*, 41(4):540–558.

Blattman, C. (2009). From violence to voting: War and political participation in uganda. *American political Science review*, pages 231–247.

Blattman, C. and Miguel, E. (2010). Civil war. *Journal of Economic literature*, 48(1):3–57.

BMZ (2017). Helping refugees build a future. *Bundesministerium für Zusammenarbeit und Entwicklung*, [last visited 14.06.2021]: https://www.bmz.de/en/publications/type_of_publication/information_flyer/information_brochures/Materialie315_flucht.pdf.

Bock, O., Baetge, I., and Nicklisch, A. (2014). hroot: Hamburg registration and organization online tool. *European Economic Review*, 71:117–120.

Boyd, M. (1989). Family and personal networks in international migration: recent developments and new agendas. *International migration review*, 23(3):638–670.

Branas-Garza, P., Cobo-Reyes, R., Espinosa, M. P., Jiménez, N., Kovářík, J., and Ponti, G. (2010). Altruism and social integration. *Games and Economic Behavior*, 69(2):249–257.

Brown, M.-A. and Stetz, K. (1999). The labor of caregiving: a theoretical model of caregiving during potentially fatal illness. *Qualitative health research*, 9(2):182–197.

Bruhin, A., Janizzi, K., and Thöni, C. (2020). Uncovering the heterogeneity behind cross-cultural variation in antisocial punishment. *Journal of Economic Behavior & Organization*, 180:291–308.

Burt, R. S. (1997). The contingent value of social capital. *Administrative science quarterly*, pages 339–365.

Callen, M., Isaqzadeh, M., Long, J. D., and Sprenger, C. (2014). Violence and risk preference: Experimental evidence from afghanistan. *American Economic Review*, 104(1):123–48.

Cantó-Milà, N. and Seebach, S. (2015). Desired images, regulating figures, constructed imaginaries: The future as an apriority for society to be possible. *Current Sociology*, 63(2):198–215.

Capraro, V., Jordan, J. J., and Rand, D. G. (2014). Heuristics guide the implementation of social preferences in one-shot prisoner's dilemma experiments. *Scientific reports*, 4(1):1–5.

Cárdenas, J. C., Dreber, A., Von Essen, E., and Ranehill, E. (2014). Gender and cooperation in children: Experiments in Colombia and Sweden. *PLoS ONE*, 9(3):1–7.

Cassar, A., Grosjean, P. A., and Whitt, S. (2011). Civil war, social capital and market development: Experimental and survey evidence on the negative consequences of violence. *Social Capital and Market Development: Experimental and Survey Evidence on the Negative Consequences of Violence (November 10, 2011). UNSW Australian School of Business Research Paper*, (2011ECON14).

Cecchi, F., Leuveld, K., and Voors, M. (2016). Conflict exposure and competitiveness: Experimental evidence from the football field in sierra leone. *Economic Development and Cultural Change*, 64(3):405–435.

Cettolin, E. and Suetens, S. (2019). Return on trust is lower for immigrants. *The Economic Journal*, 129(621):1992–2009.

Charara, R., Forouzanfar, M., Naghavi, M., Moradi-Lakeh, M., Afshin, A., Vos, T., Daoud, F., Wang, H., El Bcheraoui, C., Khalil, I., et al. (2017). The burden of mental disorders in the eastern mediterranean region, 1990-2013. *PloS one*, 12(1):e0169575.

Chaudhuri, A., Paichayontvijit, T., and Smith, A. (2017). Belief heterogeneity and contributions decay among conditional cooperators in public goods games. *Journal of Economic Psychology*, 58:15–30.

Choi, J.-K. and Bowles, S. (2007). The coevolution of parochial altruism and war. *science*, 318(5850):636–640.

Chung, M. C., Shakra, M., AlQarni, N., AlMazrouei, M., Al Mazrouei, S., and Al Hashimi, S. (2018). Posttraumatic stress among syrian refugees: trauma exposure characteristics, trauma centrality, and emotional suppression. *Psychiatry*, 81(1):54–70.

Cinyabuguma, M., Page, T., and Putterman, L. (2006). Can second-order punishment deter perverse punishment? *Experimental Economics*, 9(3):265–279.

Coffé, H. and Geys, B. (2007). Toward an empirical characterization of bridging and bonding social capital. *Nonprofit and Voluntary Sector Quarterly*, 36(1):121–139.

Coleman, J. S. (1988). Social capital in the creation of human capital. *American journal of sociology*, 94:S95–S120.

Colletta, N. J. and Cullen, M. L. (2000). *Violent conflict and the transformation of social capital: Lessons from Cambodia, Rwanda, Guatemala, and Somalia*, volume 795. World Bank Publications.

Collier, P. et al. (2003). *Breaking the conflict trap: Civil war and development policy*. World Bank Publications.

Council on Foreign Relations (2021). Syria's civil war: The descent into horror. [last visited: 06.04.2021]: https://www.cfr.org/article/syrias-civil-war.

Dahl, R. E., Allen, N. B., Wilbrecht, L., and Suleiman, A. B. (2018). Importance of investing in adolescence from a developmental science perspective. *Nature*, 554(7693):441–450.

Dreber, A., von Essen, E., and Ranehill, E. (2014). Gender and competition in adolescence: task matters. *Experimental Economics*, 17(1):154–172.

Ehlers, A. and Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour research and therapy*, 38(4):319–345.

El-Bialy, N., Fraile Aranda, E., Nicklisch, A., Saleh, L., and Voigt, S. (2020). Syrian civil war victims trust each other, but punish when and whomever they can. *ILE Working Paper Series*.

El-Bialy, N., Fraile Aranda, E., Nicklisch, A., Saleh, L., and Voigt, S. (in press).

A sense of no future in an uncertain present: Altruism and risk-seeking among syrian refugees in jordan. *Journal of Refugee Studies*.

Elliott, S. and Yusuf, I. (2014). Yes, we can; but together: Social capital and refugee resettlement. *Kotuitui: New Zealand Journal of Social Sciences Online*, 9(2):101–110.

Engelmann, D. and Strobel, M. (2007). Preferences over income distributions: Experimental evidence. *Public Finance Review*, 35(2):285–310.

Eshel, I., Samuelson, L., and Shaked, A. (1998). Altruists, egoists, and hooligans in a local interaction model. *American Economic Review*, pages 157–179.

Evans, R. and Thomas, F. (2009). Emotional interactions and an ethics of care: Caring relations in families affected by hiv and aids. *Emotion, Space and Society*, 2(2):111–119.

Fan, P.-L. and Marini, M. M. (2000). Influences on gender-role attitudes during the transition to adulthood. *Social Science Research*, 29(2):258–283.

Fehr, E., Bernhard, H., and Rockenbach, B. (2008). Egalitarianism in young children. *Nature*, 454(7208):1079–1083.

Fehr, E. and Fischbacher, U. (2003). The nature of human altruism. *Nature*, 425(6960):785–791.

Fehr, E. and Gächter, S. (2002). Altruistic punishment in humans. *Nature*, 415(6868):137–140.

Fehr, E., Glätzle-Rützler, D., and Sutter, M. (2013). The development of egalitarianism, altruism, spite and parochialism in childhood and adolescence. *European Economic Review*, 64:369–383.

Fekadu, D., Alem, A., and Hägglöf, B. (2006). The prevalence of mental health problems in Ethiopian child laborers. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 47(9):954–959.

Figley, C. R. (1995). *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized*. Number 23. Psychology Press.

Figley, C. R. (2002). Compassion fatigue: Psychotherapists' chronic lack of self care. *Journal of clinical psychology*, 58(11):1433–1441.

Fischbacher, U. and Föllmi-Heusi, F. (2013). Lies in disguise—an experimental study on cheating. *Journal of the European Economic Association*, 11(3):525–547.

Fischbacher, U. and Gachter, S. (2010). Social preferences, beliefs, and the dynamics of free riding in public goods experiments. *American economic review*, 100(1):541–56.

Fischbacher, U., Gächter, S., and Fehr, E. (2001). Are people conditionally cooperative? evidence from a public goods experiment. *Economics letters*, 71(3):397–404.

Folbre, N. (2006). Measuring care: Gender, empowerment, and the care economy. *Journal of human development*, 7(2):183–199.

Foner, N. and Alba, R. (2008). Immigrant religion in the us and western europe: Bridge or barrier to inclusion? *International migration review*, 42(2):360–392.

Gächter, S. and Herrmann, B. (2009). Reciprocity, culture and human cooperation: previous insights and a new cross-cultural experiment. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1518):791–806.

Gächter, S., Herrmann, B., and Thöni, C. (2010). Culture and cooperation. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 365(1553):2651–2661.

Gächter, S. and Schulz, J. F. (2016). Intrinsic honesty and the prevalence of rule violations across societies. *Nature*, 531(7595):496–499.

García, J. L., Heckman, J. J., Leaf, D. E., and Prados, M. J. (2017). The life-cycle benefits of an influential early childhood program. Technical report, National Bureau of Economic Research.

Gertler, P., Heckman, J., Pinto, R., Zanolini, A., Vermeersch, C., Walker, S., Chang, S. M., and Grantham-McGregor, S. (2014). Labor market returns to an early childhood stimulation intervention in jamaica. *Science*, 344(6187):998–1001.

Gilligan, M. J., Pasquale, B. J., and Samii, C. (2014). Civil war and social cohesion: Lab-in-the-field evidence from nepal. *American Journal of Political Science*, 58(3):604–619.

Global Gender Gap Report (2020). Global gender gap report, 2020. *World Economic Forum*, [last visited: 15.06.2021]: http://www3.weforum.org/docs/WEF_GGGR_2020.pdf.

Gneezy, A. and Fessler, D. M. (2012). Conflict, sticks and carrots: war increases prosocial punishments and rewards. *Proceedings of the Royal Society B: Biological Sciences*, 279(1727):219–223.

Gneezy, U. and Imas, A. (2017). Lab in the field: Measuring preferences in the wild. In *Handbook of economic field experiments*, volume 1, pages 439–464. Elsevier.

Goette, L., Huffman, D., and Meier, S. (2012). The impact of social ties on group interactions: Evidence from minimal groups and randomly assigned real groups. *American Economic Journal: Microeconomics*, 4(1):101–15.

Goodman, J. H. (2004). Coping with trauma and hardship among unaccompanied refugee youths from sudan. *Qualitative health research*, 14(9):1177–1196.

Granovetter, M. S. (1973). The strength of weak ties. *American journal of sociology*, 78(6):1360–1380.

Grootaert, C. (1999). *Child labor in Cote d'Ivoire: incidence and determinants*. The World Bank.

Grusec, J. E. (2011). Socialization processes in the family: Social and emotional development. *Annual review of psychology*, 62:243–269.

Habib, R. R., Ziadee, M., Abi Younes, E., Harastani, H., Hamdar, L., Jawad, M., and El Asmar, K. (2019). Displacement, deprivation and hard work among syrian refugee children in lebanon. *BMJ Global Health*, 4(1).

Harbaugh, W. T., Krause, K., and Berry, T. R. (2001). Garp for kids: On the development of rational choice behavior. *American Economic Review*, 91(5):1539–1545.

Harbaugh, W. T., Krause, K., and Liday, S. J. (2003). Bargaining by children. *University of Oregon Economics Working Paper*, (2002-4).

Hassan, M., Mansour, S., Voigt, S., and Gadallah, M. (2019). When syria was in egypt's land: Egyptians cooperate with syrians, but less with each other. *Public Choice*, pages 1–26.

Heath, A., Yu, S., et al. (2005). Explaining ethnic minority disadvantage. *Understanding social change*, pages 187–224.

Henrich, J., Boyd, R., Bowles, S., Camerer, C., Fehr, E., Gintis, H., McElreath, R., Alvard, M., Barr, A., Ensminger, J., et al. (2005). "economic man" in cross-

cultural perspective: Behavioral experiments in 15 small-scale societies. *Behavioral and brain sciences*, 28(6):795–855.

Henrich, J., Heine, S. J., and Norenzayan, A. (2010). Most people are not weird. *Nature*, 466(7302):29–29.

Herrmann, B., Thöni, C., and Gächter, S. (2008). Antisocial punishment across societies. *Science*, 319(5868):1362–1367.

Hirschman, C. (2004). The role of religion in the origins and adaptation of immigrant groups in the united states 1. *International Migration Review*, 38(3):1206–1233.

Hurlbert, J. S., Haines, V. A., and Beggs, J. J. (2000). Core networks and tie activation: What kinds of routine networks allocate resources in nonroutine situations? *American Sociological Review*, pages 598–618.

ILO (1975). Migrant workers (supplementary provisions) convention. *International Labour Organization*, [last visited 14.06.2021]: https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C143.

ILO (2017). Global estimates of child labour: Results and trends, 2012-2016. *International Labour Organization, Geneva*, [last visited: 15.06.2021]: https://www.ilo.org/wcmsp5/groups/public/@dgreports/@dcomm/documents/publication/wcms_575499.pdf.

ILO (2021). What is child labour. [last visited: 15.06.2021]: https://www.ilo.org/ipec/facts/lang--en/index.htm.

Jeworrek, S., Leisen, B. J., and Mertins, V. (2020). Gift-exchange in society and the social integration of refugees: Evidence from a field, a laboratory, and a survey experiment. Technical report, IWH Discussion Papers.

Jiang, T. (2013). Cheating in mind games: The subtlety of rules matters. *Journal of Economic Behavior & Organization*, 93:328–336.

Joseph, S., Dalgleish, T., Thrasher, S., and Yule, W. (1997). Impulsivity and post-traumatic stress. *Personality and Individual Differences*, 22(2):279–281.

Kahneman, D. and Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2):263–291.

Kajackaite, A. and Gneezy, U. (2017). Incentives and cheating. *Games and Economic Behavior*, 102:433–444.

Kasarda, J. D. and Janowitz, M. (1974). Community attachment in mass society. *American sociological review*, pages 328–339.

Kazour, F., Zahreddine, N. R., Maragel, M. G., Almustafa, M. A., Soufia, M., Haddad, R., and Richa, S. (2017). Post-traumatic stress disorder in a sample of Syrian refugees in Lebanon. *Comprehensive Psychiatry*, 72:41–47.

Kerig, P. K. and Becker, S. P. (2015). 12 early abuse and neglect as risk factors for the development of criminal and antisocial behavior. *The development of criminal and antisocial behavior*, pages 181–199.

Khadjavi, M. and Tjaden, J. D. (2018). Setting the bar-an experimental investigation of immigration requirements. *Journal of Public Economics*, 165:160–169.

Kim, Y.-I. and Lee, J. (2012). Long run impact of traumatic experience on attitudes toward risk: study of korean war and its impact on risk aversion. In *paper delivered at the 4th Annual Meeting on the Economics of Risky Behaviors, Bahçeşehir University, Istanbul (April 2012)*, volume 43.

Kleiber, D. A. and Barnett, L. A. (1980). Leisure in childhood. *Young Children*, pages 47–53.

Kocher, M. G., Martinsson, P., Matzat, D., and Wollbrant, C. (2015). The role of beliefs, trust, and risk in contributions to a public good. *Journal of Economic Psychology*, 51:236–244.

Larsen, L., Harlan, S. L., Bolin, B., Hackett, E. J., Hope, D., Kirby, A., Nelson, A., Rex, T. R., and Wolf, S. (2004). Bonding and bridging: Understanding the relationship between social capital and civic action. *Journal of Planning Education and Research*, 24(1):64–77.

Lie, B. (2002). A 3-year follow-up study of psychosocial functioning and general symptoms in settled refugees. *Acta Psychiatrica Scandinavica*, 106(6):415–425.

Lin, N. (2002). *Social capital: A theory of social structure and action*. Number 19. Cambridge university press.

Manski, C. F. (2004). Measuring expectations. *Econometrica*, 72(5):1329–1376.

Masclet, D., Noussair, C., Tucker, S., and Villeval, M.-C. (2003). Monetary and nonmonetary punishment in the voluntary contributions mechanism. *American Economic Review*, 93(1):366–380.

Mazar, N. and Ariely, D. (2010). Sequential influences on dishonest behavior. *ACR North American Advances*.

Menahem, G., Doron, G., and Itzhak Haim, D. (2011). Bonding and bridging associational social capital and the financial performance of local authorities in israel. *Public Management Review*, 13(5):659–681.

Merriam-Webster Dictionary (2021). [last visited: 17.05.2021]: https://www.merriam-webster.com/dictionary/culture.

Mikhael, D. and Norman, J. (2018). Refugee youth, unemployment and extremism: countering the myth. *Forced Migration Review*, (57):57–58.

Mollica, R. F., Caspi-Yavin, Y., Bollini, P., Truong, T., Tor, S., and Lavelle, J. (1992). The harvard trauma questionnaire: validating a cross-cultural instrument for measuring torture, trauma, and posttraumatic stress disorder in indochinese refugees. *Journal of nervous and mental disease*.

Mouw, T. (2006). Estimating the causal effect of social capital: A review of recent research. *Annu. Rev. Sociol.*, 32:79–102.

Nan, X. and Qin, Y. (2019). How thinking about the future affects our decisions in the present: effects of time orientation and episodic future thinking on responses to health warning messages. *Human communication research*, 45(2):148–168.

National Alliance for Caregiving in Collaboration with the United Hospital Fund (2005). Young care-givers in the u.s.: Report of findings, september 2005. *Bethesda, MD:NAC*, [last visited: 15.06.2021]: https://www.caregiving.org/wp-content/uploads/2020/05/youngcaregivers.pdf.

Nowak, M. A. (2006). Five rules for the evolution of cooperation. *science*, 314(5805):1560–1563.

Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge university press.

Paxton, P. (2002). Social capital and democracy: An interdependent relationship. *American sociological review*, pages 254–277.

Plan, Lebanon Crisis Response (2017). Plan 2017–2020. *The Government of Lebanon and the United Nations*.

Potters, J. and Stoop, J. (2016). Do cheaters in the lab also cheat in the field? *European Economic Review*, 87:26–33.

Putnam, R. D. et al. (2000). *Bowling alone: The collapse and revival of American community*. Simon and schuster.

Rand, D. G., Armao IV, J. J., Nakamaru, M., and Ohtsuki, H. (2010). Anti-social punishment can prevent the co-evolution of punishment and cooperation. *Journal of theoretical biology*, 265(4):624–632.

Rand, D. G. and Nowak, M. A. (2011). The evolution of antisocial punishment in optional public goods games. *Nature communications*, 2(1):1–7.

Ratcliffe, M., Ruddell, M., and Smith, B. (2014). What is a "sense of foreshortened future?" a phenomenological study of trauma, trust, and time. *Frontiers in Psychology*, 5:1026.

Ray, R. (2000). Analysis of child labour in peru and pakistan: A comparative study. *Journal of population economics*, 13(1):3–19.

Rieger, M. O., Wang, M., and Hens, T. (2015). Risk preferences around the world. *Management Science*, 61(3):637–648.

Robson, E., Ansell, N., Huber, U. S., Gould, W. T., and van Blerk, L. (2006). Young caregivers in the context of the hiv/aids pandemic in sub-saharan africa. *Population, Space and Place*, 12(2):93–111.

Roth, A. E. (1995). Learning in extensive-form games: Experimental data and simple dynamic models in the intermediate term. *Games and economic behavior*, 8(1):164–212.

Salehyan, I. (2007). Refugees and the study of civil war. *Civil Wars*, 9(2):127–141.

Sanders, J. M. and Nee, V. (1996). Immigrant self-employment: The family as social capital and the value of human capital. *American sociological review*, pages 231–249.

Scheier, M. F. and Carver, C. S. (1993). On the power of positive thinking: The benefits of being optimistic. *Current directions in psychological science*, 2(1):26–30.

Schmidt, K. M. (2009). The role of experiments for the development of economic theories. *Perspektiven der Wirtschaftspolitik*, 10:14–30.

Schotter, A. and Trevino, I. (2014). Belief elicitation in the laboratory. *Annu. Rev. Econ.*, 6(1):103–128.

Schulz, A. J., Israel, B. A., Zenk, S. N., Parker, E. A., Lichtenstein, R., Shellman-Weir, S., and AB, L. K. (2006). Psychosocial stress and social support as mediators of relationships between income, length of residence and depressive symptoms among african american women on detroit's eastside. *Social science & medicine*, 62(2):510–522.

Scott, J. (1988). Social network analysis. *Sociology*, 22(1):109–127.

Sensenbrenner, J. and Portes, A. (2018). Embeddedness and immigration: Notes on the social determinants of economic action. In *The Sociology of Economic Life*, pages 93–115. Routledge.

Shalvi, S., Dana, J., Handgraaf, M. J., and De Dreu, C. K. (2011). Justified ethicality: Observing desired counterfactuals modifies ethical perceptions and behavior. *Organizational Behavior and Human Decision Processes*, 115(2):181–190.

Shoeb, M., Weinstein, H., and Mollica, R. (2007). The harvard trauma questionnaire: adapting a cross-cultural instrument for measuring torture, trauma and posttraumatic stress disorder in iraqi refugees. *International Journal of Social Psychiatry*, 53(5):447–463.

Smith, A. (2013). Estimating the causal effect of beliefs on contributions in repeated public good games. *Experimental Economics*, 16(3):414–425.

Stamatopoulos, V. (2018). The young carer penalty: Exploring the costs of caregiving among a sample of Canadian youth. *Child and Youth Services*, 39(2-3):180–205.

Statistical Information and Monitoring Program on Child Labor (2017). Child labor statistics. *International Labor Organization*, [last visited: 15.06.2021]: https://www.ilo.org/ipec/ChildlabourstatisticsSIMPOC/lang--en/index.htm.

Staub, E. (2013). *Positive social behavior and morality: Social and personal influences*. Elsevier.

Stolle, D. and Rochon, T. R. (1998). Are all associations alike? member diversity, associational type, and the creation of social capital. *American Behavioral Scientist*, 42(1):47–65.

Sutter, M., Zoller, C., and Glätzle-Rützler, D. (2019). Economic behavior of children and adolescents–a first survey of experimental economics results. *European Economic Review*, 111:98–121.

Sylwester, K., Herrmann, B., and Bryson, J. J. (2013). Homo homini lupus? explaining antisocial punishment. *Journal of Neuroscience, Psychology, and Economics*, 6(3):167.

Tedeschi, R. G. and Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, 15(1):1–18.

The Children's Society. (2020). Supporting young-carers. *The Children's Society Org.*, [last visited: 15.06.2021]: https://www.childrenssociety.org.uk/what-we-do/our-work/supporting-young-carers.

UNHCR (2017). Global trends: Forced displacement in 2017. *United Nations High Commissioner for refugees*, [last visited: 15.06.2021]: https://www.unhcr.org/globaltrends2017/.

UNHCR (2018). Jordan – fact sheet. *United Nations High Commissioner for refugees*, [last visited 02.02.2021]: https://reliefweb.int/sites/reliefweb.int/files/resources/FactSheetJordanFebruary2018-FINAL_0.pdf.

UNHCR (2021). Syria regional refugee response, lebanon. *United Nations High Commissioner for refugees, Operational Data Portal*, [last visited: 15.06.2021]: https://data2.unhcr.org/en/situations/syria/location/71.

Van Staveren, I. and Knorringa, P. (2007). Unpacking social capital in economic development: How social relations matter. *Review of social economy*, 65(1):107–135.

Verme, P., Gigliano, C., Wieser, C., Hedlund, K., Petzoldt, M., and Santacroce, M. (2016). The Welfare of Syrian Refugees: Evidence from Jordan and Lebanon. Technical report, UNHCR and The World Bank Group.

Viceisza, A. C. (2016). Creating a lab in the field: Economics experiments for policymaking. *Journal of Economic Surveys*, 30(5):835–854.

Voors, M. J., Nillesen, E. E., Verwimp, P., Bulte, E. H., Lensink, R., and Van Soest, D. P. (2012). Violent conflict and behavior: a field experiment in burundi. *American Economic Review*, 102(2):941–64.

Walter, B. F., Snyder, J. L., and Snyder, J. (1999). *Civil wars, insecurity, and intervention*. Columbia University Press.

Whitt, S. and Wilson, R. K. (2007). The dictator game, fairness, and ethnicity in postwar bosnia. *American Journal of Political Science*, 51(3):655–668.

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Erklärung

Hiermit erkläre ich, Elisa Fraile Aranda, dass ich keine kommerzielle Promotionsberatung in Anspruch genommen habe. Die Arbeit wurde nicht schon einmal in einem früheren Promotionsverfahren angenommen oder als ungenügend beurteilt.

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