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## A Sense of No Future in an Uncertain Present: Altruism and Risk-Seeking among Syrian Refugees in Jordan

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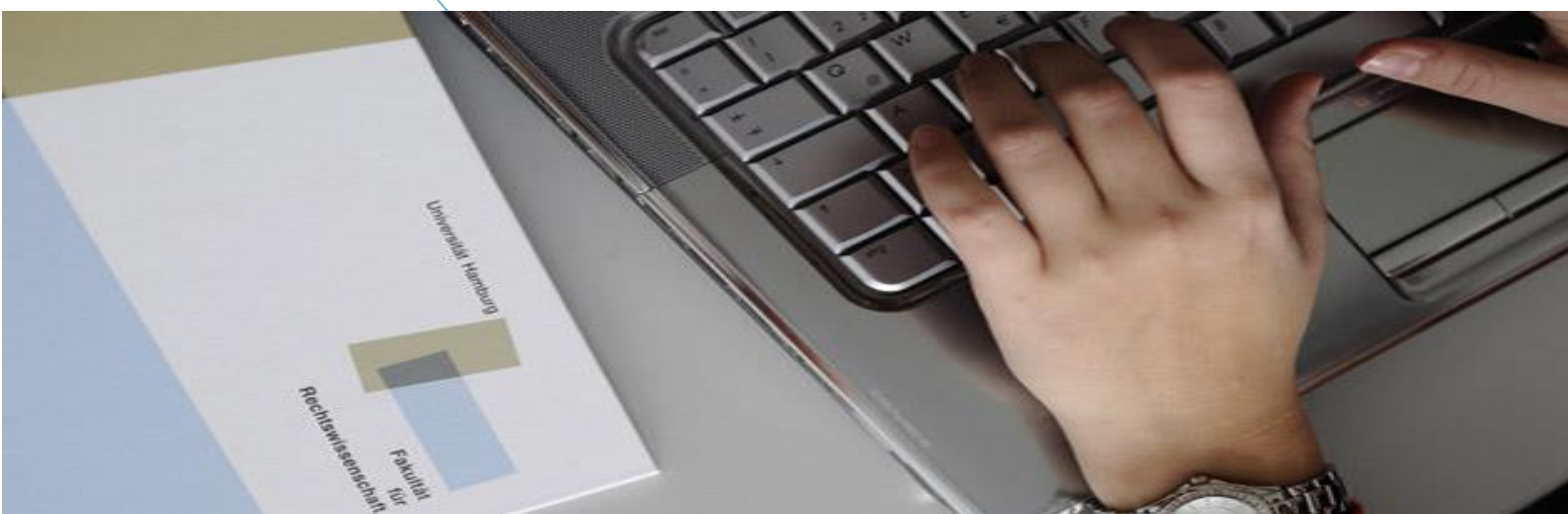
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# A Sense of No Future in an Uncertain Present: Altruism and Risk-Seeking among Syrian Refugees in Jordan<sup>#</sup>

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## 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. We find systematic variations in their revealed levels of altruism and their willingness to accept risk: 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 miserable current living conditions rather than with experiences directly related to the civil war in Syria. Policy implications of these findings seem straightforward: Policy makers need to provide additional assistance for facilitating family reunion.*

*JEL classification: C92, D64, D81, D91, F22, H56, Z13.*

*Key words: experiments, altruism, risk-seeking, psychological distress, migration, civil war.*

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## 1. Introduction

More than 6 million Syrians have fled their country since the beginning of the civil war in Syria in 2011. More than 3.5 million have sought refuge in Turkey, around a million in Lebanon and at least 660,000 in both Germany and Jordan.<sup>6</sup> Jordan has the second highest number of refugees per capita in the world, largely due to the large number of Syrian migrants.<sup>7</sup>

One direct and straightforward consequence of the flight is economic poverty. Alarming, 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 subjects who experience civil war violence behave significantly differently than subjects who have not experienced such violence (e.g., 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 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. Preferences concerning risk and altruism, and factors

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<sup>6</sup> All numbers according to UNHCR. <http://data.unhcr.org/syrianrefugees/regional.php>.

<sup>7</sup> To be exact, 89 refugees per 1,000 inhabitants.

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' difficult living experiences in the host country are correlated with more egoism and risk-seeking and an intense sense of a foreshortened future. We find that mainly refugees who left nuclear family members behind and those who are staying in a refugee camp in Jordan have the feeling of 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 results may have severe consequences for the efforts to integrate refugees.

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.

## 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 that were exposed to more violence during the civil war were more risk-seeking years later. On the other hand, Kim and Lee (2013) found that children who were exposed to the Korean war were more risk-averse even decades after the end of the war. Moreover, those that 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. Voors et al. (ibid.) 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 were rather limited. 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. (2015) found the same effect as players who had been exposed to more intense war-related violence were more altruistic towards their in-group team players in opposition to 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, 2009; 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-Milá 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, 785). 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 pro-sociality. 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 (Brañas-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 (e.g., Rieger et al., 2014). Some researchers have argued that risk preferences are an important factor for economic development (see, e.g., 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 (e.g., 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,<sup>8</sup> 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

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<sup>8</sup> The Harvard Program in Refugee Trauma has analyzed the effects of experiencing violence on people’s mental health for decades (Mollica et al., 1992).

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. Participants

#### 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 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.<sup>9</sup> 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

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<sup>9</sup> 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 A4 from the Appendix).

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.<sup>10</sup> The questionnaire consists of four parts, namely a number of questions regarding the socio-economic 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 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.”

63 Syrian refugees and 92 Jordanian participated in this study. Table 1 summarizes some socio-demographic 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 1.*

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10 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.

## Descriptive Statistics of Participants

	Syrian Participants					Jordanian Participants				
Variables	N	Mean	St. Dev.	Min	Max	N	Mean	St. Dev.	Min	Max
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 from 16-26 years. 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 socio-economic 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.

### 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.<sup>11</sup>

Table 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.<sup>12</sup> 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

<sup>11</sup> The questionnaire and a table with averages for all possible symptoms for PTSD are part of the Appendix (see A2 and A3).

<sup>12</sup> 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.

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.<sup>13</sup> 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., 2014; 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 2).

*Table 2.*  
Distress Level and 'Feeling as if having no future'

Variables	Syrian Participants					Jordanian Participants					Wilcoxon Test (p-value)
	N	Mean	St. Dev.	Min	Max	N	Mean	St. Dev.	Min	Max	
Distress level	53	2.406	0.672	1.000	3.688	78	2.268	0.526	1.188	3.675	0.235
Distress level > 2.5	53	0.472	0.504	0	1	78	0.321	0.470	0	1	0.100
No Future	61	2.984	1.118	1	4	90	1.922	0.977	1	4	<0.001
No Future > 2	61	0.672	0.473	0	1	90	0.300	0.461	0	1	<0.001

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.

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<sup>13</sup> 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" (see, e.g., Figley 2013). 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).

#### 4. The Experimental design

The games analyzed here were part of a larger study that consisted of three other games.<sup>14</sup> 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.

##### 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 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 presented in the Appendix of the paper. Let  $X_i$  and  $Y_i$  be the two options in the dictator game  $i$ ;  $d(X_i)$  denotes the payoff of the dictator and  $r(X_i)$  the recipient's in option  $X_i$  of game  $i$ . The first three dictator games are introduced for participants to get used to experimental games. In those games, one option, say  $Y_i$ , is clearly payoff dominant, both in terms of the dictator's payoff (i.e.,  $d(Y_i) > d(X_i)$ ) and the sum of

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<sup>14</sup> 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.

dictator's and recipient's payoffs (i.e.,  $d(X_i)+r(X_i) < d(Y_i)+r(Y_i)$ ), while lowering the inequality between payoffs (i.e.,  $d(X_i)-r(X_i) > d(Y_i)-r(Y_i)$ ). 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.

In dictator games 4 to 6, the options  $X_i$  and  $Y_i$  are varied such that one of the two, say  $X_i$ , is more altruistic as it yields higher payoffs for the recipient than the other at a cost for the dictator and lowers the inequality between dictator's and recipient's payoffs. Furthermore, we use the less altruistic option from the earlier game as the more altruistic option in the consecutive game. That is,  $Y_i = X_{i+1}$  subject to  $r(X_i) > r(Y_i)$ ,  $d(X_i) < d(Y_i)$ , and  $d(X_i)-r(X_i) < d(Y_i)-r(Y_i) \forall i$ . Hence, we introduce a sequence of options with decreasing 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).

## 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 (i.e., we denote  $X_i$  as one option, and  $Y_i$  as the other with  $i=1, \dots, 6$ ) with one option, say  $X_i$ , yielding a certain payoff. The alternative, risky option entails a lottery between two possible payoffs ( $Y^1_i, Y^2_i$ ) that materialize with known probabilities (30% and 70% in our case). Only one, randomly determined lottery of the player becomes payoff-relevant after the experiment. The complete sequence of lottery choices is presented in the Appendix.

We divide the six lotteries in two blocks of three lotteries each. While the expected payoff of the risky option is constant across two blocks (i.e., be  $\text{¥}$  and  $\text{¥}$  two positive numbers,  $0.3Y^1_i+0.7 Y^2_i = \text{¥} \forall i \in \{1,2,3\}$  and  $0.3Y^1_i+0.7 Y^2_i = \text{¥} \forall i \in \{4,5,6\}$ ), the payoff of the certain option

increases in the first block (i.e.,  $X_1 < X_2 < X_3$ ), and decreases in the second block (i.e.,  $X_4 > X_5 > X_6$ ). The middle certain option in each block equals the expected value of the risky option (i.e.,  $X_2 = \bar{X}$  and  $X_5 = \bar{X}$ ). In other words, being indifferent between the certain and the risky option in the middle lottery of each block 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 option, say  $Y^1_i$ , is larger than the certain alternative (i.e.,  $Y^1_i > X_i \forall i \in \{1,2,3\}$ ), while the less likely outcome of the risky option in the second block is smaller than the certain alternative (i.e.,  $Y^1_i < X_i \forall i \in \{4,5,6\}$ ). Therefore, the first three choices are framed as potential gains, whereas the last three choices as potential losses. With the first sequence of lotteries, we measure risk attitudes in the gain domain, whereas with the second sequence, we measure risk attitudes in the loss domain. Opting in favor of the risky option in all three lotteries of the first (second) block reveals risk 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.

## 5. Results

### 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.<sup>15</sup>

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<sup>15</sup> The Wilcoxon rank sum test (two-sided) yields a p-value of 0.009; hence, the difference between Jordanians and Syrians is significant.



*Figure 1.*  
Proportion of Altruistic Choices

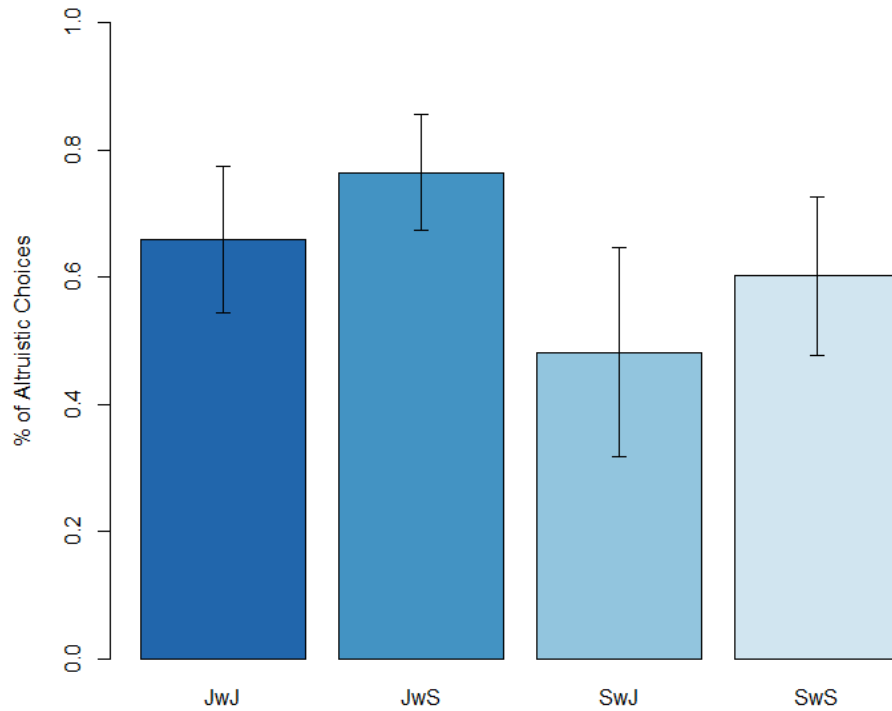


Figure 1 shows the relative number of altruistic choices per treatment with whiskers indicating 95% confidence intervals. Overall, Syrian refugees have a tendency for some in-group favoritism, while Jordanians do not favor their own peers. Specifically, the average rate of the altruistic choice is 0.60 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.<sup>16</sup>

Relating actual behavior to the choice pattern introduced in Section 4.1, we find that, on the one hand, 16.6% of Syrians interacting with Syrians choose the most egoistic pattern  $\{Y_4, Y_5, Y_6\}$  while 8.3% of Jordanians do so. On the other hand, 37% of Syrians interacting with Jordanians choose  $\{Y_4, Y_5, Y_6\}$  while 20.5% of Jordanians do so. In contrast, the most altruistic pattern  $\{X_4, X_5, X_6\}$  is chosen by 38.8% of Syrians playing with another Syrian refugee compared to 56.2% of Jordanians. Additionally, 33.3% of Syrians interacting with a Jordanian choose  $\{X_4, X_5, X_6\}$ , while 45.5% of Jordanians do so. The choice pattern  $\{Y_4, X_5, X_6\}$  is chosen by 11.1% Syrians and by 10.4% Jordanians both interacting with a Syrian refugee, while 11.1% of Syrians and by 13.6% of Jordanians choose that way when playing with a Jordanian. The choice pattern  $\{Y_4, Y_5, X_6\}$  is found in 13.9% of the Syrian sample playing with another Syrian refugee and in 6.3% of Jordanians with a Syrian refugee partner. In contrast, 11.1% of Syrians interacting with Jordanians choose  $\{Y_4, Y_5, X_6\}$ , while 2.3% of Jordanians do so.<sup>17</sup> Finally, 14.3% of Syrians do not chose a consistent pattern (i.e., a different pattern than any of the previous ones), compared to 18.5% of Jordanians. Table 3 reports the number of choice patterns per treatment condition.

*Table 3.*  
Altruism Choice Patterns

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

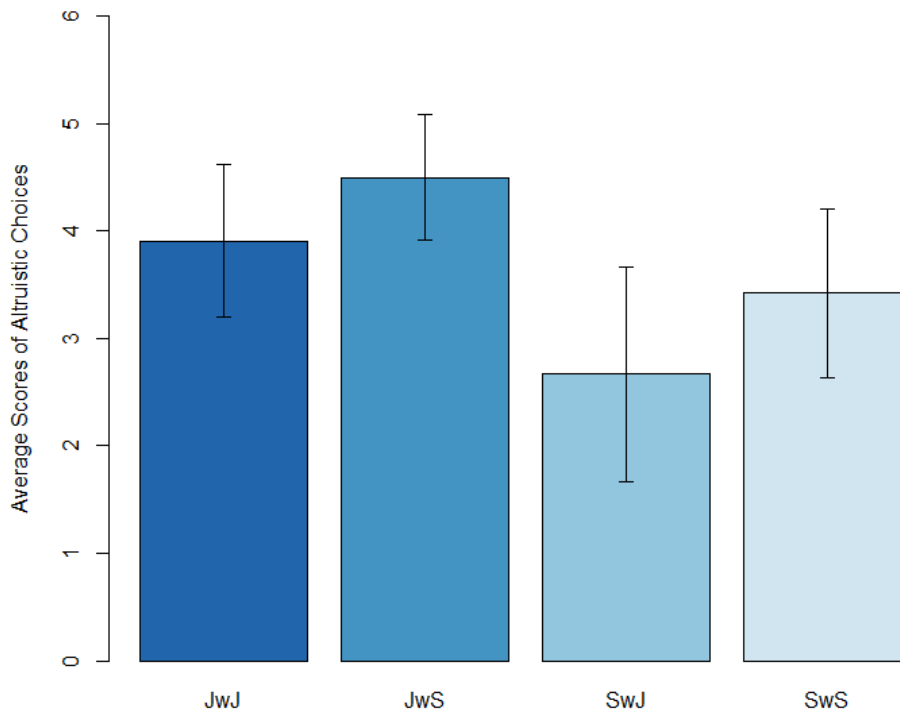
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16 For Jordanians (JwJ and JwS), the Wilcoxon rank sum test yields a p-value of 0.2126 and for Syrians (SwJ and SwS) it yields a p-value of 0.2028.

17 Notice that all differences fail to reach significance (exact Wilcoxon tests, two-side,  $p > 0.1$ ).

To assess the overall degree of altruism displayed by the participants, we compute an individual altruism score for each participant. The choice of  $X_4$  (i.e., the dictator choice yielding payoff-equity) is evaluated as 3 points, the choice of  $X_5$  (i.e., the dictator choice yielding a small payoff difference in game 5) as 2 points, and  $X_6$  (i.e., the dictator choice yielding at least a small payoff for the recipient in game 6) as 1 point. If the egoistic alternative  $Y$  is chosen in any of the three games, it is evaluated as 0 points. The final individual altruism score is the sum of the points across the three games. As a result, our score ranges from 0 (egoistic choices in all three games) to 6 (altruistic choices in all three games). Figure 2 shows the mean scores along 95% confidence intervals.

*Figure 2.*  
Score of Altruism



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 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%) by choosing X<sub>4</sub> more frequently. A comparison of treatment conditions reveals that Syrians interacting with Syrians are significantly more egoistic than Jordanians interacting with Syrians.<sup>18</sup> However, Syrians interacting with Jordanians are not significantly less altruistic than Jordanians interacting with Jordanians.<sup>19</sup>

In Table 4, we explore in more detail the relationship between our altruism score and ‘feeling as if having no future’, along with additional socio-demographic variables. Specifically, we control for a number of socio-demographic 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 one – not at all – to four – extremely) and the feeling of no future on the altruism score (again measured on a scale one – not at all – to four – extremely).<sup>20</sup> Recall that while all other socio-economic 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 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, Model (3) contains interaction effects between the feeling of no future and the treatment condition.

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’

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18 Exact Wilcoxon tests, two-side,  $p=0.04$ .

19 Exact Wilcoxon tests, two-side,  $p=0.08$ .

20 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).

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*.

*Table 4.*

Regression results for Altruism Score

<i>Dependent variable:</i>									
Altruism Score									
	Estimate	(1) Std. Error	p-value	Estimate	(2) Std. Error	p-value	Estimate	(3) Std. Error	p-value
Syrian	-1.379	(0.624)	0.029	-1.172	(0.620)	0.061	1.021	(1.117)	0.362
With Syrian	0.804	(0.535)	0.136	0.598	(0.503)	0.236	0.602	(0.870)	0.490
Syrian x With Syrian	-0.128	(0.849)	0.881	-0.147	(0.801)	0.855	0.113	(0.879)	0.898
Female	-0.169	(0.432)	0.697	-0.291	(0.403)	0.471	-0.392	(0.400)	0.303
Number of Children	-0.999	(0.513)	0.054	-0.308	(0.399)	0.441	-0.260	(0.395)	0.512
Age	0.361	(0.641)	0.574	0.167	(0.609)	0.784	0.208	(0.601)	0.730
Low SES	-0.141	(0.503)	0.780	-0.338	(0.456)	0.4604	-0.467	(0.453)	0.305
Distress Level	0.140	(0.359)	0.697						
No Future				-0.022	(0.188)	0.908	0.410	(0.318)	0.199
Syrian x No Future							-0.918	(0.376)	0.016
With Syrian x No Future							-0.034	(0.373)	0.928
Constant	2.932	(1.581)	0.066	3.888	(1.389)	0.006	3.082	(1.458)	0.036
Obs.		130			150			150	
Adj. R <sup>2</sup>		0.071			0.039			0.066	
Residual Std. Error		2.349 (df = 121)			2.375 (df = 141)			2.342 (df = 139)	
F Statistic		2.234			1.762			2.049	
		(df = 8, 121; p-value: 0.02935)			(df = 8, 141; p-value: 0.089)			(df = 10, 139; p-value: 0.033)	

*Note:* We report estimates for the coefficients along standard errors in parenthesis, t-values, and p-values; the goodness of fit for the models is assessed by the adjusted R2 as well as a joint F-test.

## 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.<sup>21</sup>

Nonetheless, a round to round analysis of risky choices offers additional insights. Following Section 4.2, we classify individuals' behavior as risk seeking or risk averse in the gain and the loss domains (see Table 5). 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. This reveals that Syrians are more frequently found to be either risk averse or risk seeking across both domains.<sup>22</sup>

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21 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.

22 However, there are no essential differences in risk preferences between Jordanians and Syrian refugees.

*Table 5.*

Risk assessment in the gain and loss domains

	Syrians		Jordanians	
	Gain Domain	Loss Domain	Gain Domain	Loss Domain
Risk averse	18 (28.6%)	32 (50.8%)	18 (25.0%)	42 (45.7%)
Risk seeking	15 (23.8%)	7 (11.1%)	22 (23.9%)	9 (9.8%)
Risk averse in G&L	13 (20.6%)		13 (14.1%)	
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  $Y_1$  (i.e., the lottery option yielding a higher expected outcome than the certain option) is evaluated as 1 point, the choice of  $Y_2$  (i.e., the lottery option in which both option yield exactly the same expected number of points) as 2 points, and  $Y_3$  (i.e., the lottery option yielding an expected payoff less than the option with a certain payoff) as 3 points. In the loss domain, the lottery choice of  $Y_4$  (i.e., the lottery option yielding a lower expected payoff than the certain option) is evaluated as 3 points, the choice of  $Y_5$  (i.e., the case in which the lottery option and the certain option yield the same payoff) as 2 points, and  $Y_6$  (i.e., the lottery option yielding a higher in expected payoff than the option with the certain payoff) as 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.<sup>23</sup>

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23 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).

Moving to a multivariate analysis (reported in Tables 6a and 6b) allows us to identify important confounders of revealed risk preferences. We use the risk seeking score as the dependent variable. Table 6a (6b) 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 seeking 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 when controlling for no future (as indicated by the interaction effect contained in Model 3). Syrian refugees are in general less risk-seeking in the gain domain than Jordanians. However, Syrian refugees who feel as if they do not have a future are significantly more risk-seeking than other Syrian refugees. This finding shows that the sense of a foreshortened future – and most likely associated difficulties like a lack of social networks and integration in the host country – correlates with confounding effects on risk taking in the gain domain.<sup>24</sup> Similar findings are well-documented for other civil war victims in the aftermath of such a conflict (e.g., 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 and trust in the world with devastating effects on individuals' behavior.

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<sup>24</sup> 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 x no future equals 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.



Finally, Table 6b reports regression results for risk-seeking in the loss domain. Again, we find significantly lower risk-seeking scores for participants with children. In the loss domain, we find no systematic association between risk seeking 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.

Table 6a.

OLS Regression Results for the Risk Seeking Score in the Gain Domain

	Dependent variable: Risk seeking score in the gain domain								
	(1)			(2)			(3)		
	Estimate	Std. Error	p-value	Estimate	Std. Error	p-value	Estimate	Std. Error	p-value
Syrian	-0.218	0.422	0.607	-0.312	0.434	0.474	-2.275	1.005	0.025
Female	0.677	0.414	0.104	0.737	0.385	0.057	0.828	0.382	0.032
Number of Children	-0.725	0.491	0.142	-0.859	0.383	0.027	-0.898	0.379	0.019
Age	1.334	0.614	0.032	1.136	0.582	0.052	1.091	0.575	0.060
Low SES	0.201	0.482	0.677	0.093	0.437	0.832	0.206	0.435	0.636
Distress Level	0.509	0.344	0.141						
No Future				0.243	0.179	0.178	-0.109	0.241	0.6511
Syrian x No Future							0.774	0.359	0.0324
Constant	-1.4385	1.4943	0.338	-0.349	1.298	0.788	0.353	1.322	0.790
Observations	130			150			150		
Adjusted R <sup>2</sup>	0.037			0.033			0.057		
Residual Std. Error	2.255 (df = 123)			2.278 (df = 143)			2.249 (df = 142)		
F Statistic	1.831			1.840			2.284		
	(df = 6, 123; p-value: 0.098) (df = 6, 143; p-value: 0.09) (df = 7, 142; p-value: 0.031)								

*Note:* We report estimates for the coefficients along standard errors in parenthesis, t-values, and p-values; the goodness of fit for the models is assessed by the adjusted R<sup>2</sup> as well as a joint F-test.

Table 6b.

Regression Results for the Risk Seeking Score in the Loss Domain

	<i>Dependent variable:</i> Risk seeking score in the loss domain								
	(1)			(2)			(3)		
	Estimate	Std. Error	p-value	Estimate	Std. Error	p-value	Estimate	Std. Error	p-value
Syrian	-0.435	0.402	0.281	-0.369	0.403	0.361	-0.759	0.9463	0.424
Female	0.556	0.394	0.161	0.435	0.357	0.224	0.453	0.3599	0.210
Number of Children	-0.838	0.467	0.076	-0.737	0.355	0.040	-0.745	0.3564	0.038
Age	1.038	0.585	0.078	0.799	0.539	0.141	0.790	0.5411	0.147
Low SES	0.259	0.459	0.574	0.225	0.405	0.580	0.248	0.4094	0.546
Distress Level	0.004	0.328	0.990						
No Future				-0.058	0.166	0.729	-0.128	0.2265	0.574
Syrian x No Future							0.154	0.3375	0.649
Constant	-0.545	1.424	0.703	0.0973	1.203	0.936	0.237	1.245	0.850
Observations		130			150			150	
Adjusted R <sup>2</sup>		0.008			0.003			-0.002	
Residual Std. Error		2.149 (df = 123)			2.112 (df = 143)			2.118 (df = 142)	
F Statistic		1.166 (df = 6; 123; p-value: 0.329)			1.081 (df = 6; 143; p-value: 0.377)			0.951 (df = 7; 142; p-value: 0.470)	

Note: We report estimates for the coefficients along standard errors in parenthesis, t-values, and p-values; the goodness of fit for the models is assessed by the adjusted R<sup>2</sup> as well as a joint F-test.

### The Sense of no Future

The sense of no future seems to be an important feeling that provokes specific preferences of 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 socio-demographic variables. Table 7 shows the results of an OLS regression model. Here, we use the score variable ‘feeling as if having no future’ as the left hand side variable.<sup>25</sup> 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 other 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’),<sup>26</sup> (6) engage in social 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

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<sup>25</sup> Remember that 67% of the Syrian refugees feel as if they do not have a future compared to 30% of the Jordanians.

<sup>26</sup> 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.

Jordan ('unwillingness to remain'). The socio-demographic variables are the same as in the previous regression analyses.

*Table 7.*

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

	<i>Dependent variable:</i>		
	No Future (1 – 4)		
	Estimates	Std. Error	p-value
Lost family members during the war	-0.260	(0.347)	0.457
Internally displaced	0.506	(0.314)	0.114
UNHCR or charity	-0.392	(0.333)	0.244
Stayed in Camp	0.619	(0.296)	0.042
Left behind nuc. family members	0.750	(0.296)	0.015
Participates in society	-0.759	(0.476)	0.118
Unwillingness to remain	0.671	(0.381)	0.084
Female	-0.173	(0.346)	0.619
Age	0.258	(0.386)	0.507
Low SES	-0.479	(0.328)	0.151
Constant	2.125	(1.131)	0.066
Observations	60		
Adjusted R <sup>2</sup>	0.152		
Residual Std. Error	1.038 (df = 49)		
F Statistic	2.055(df = 10; 49; p-value: 0.04712)		

*Note:* We report estimates for the coefficients along standard errors in parenthesis, t-values and p-values; the goodness of fit for the models is assessed by the adjusted R<sup>2</sup> as well as a joint F-test.

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, Syrian refugees who state their unwillingness to remain in Jordan are slightly more likely to suffer from the feeling of having no future. There are no significant correlations with variables attributed to past civil war experiences.

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.

## 6. Conclusion

This paper draws on economic experiments to analyze risk-taking and altruistic behavioral 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. 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.<sup>27</sup>

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 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, if family separation

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<sup>27</sup> 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: <https://www.reuters.com/article/us-syria-crisis-refugees/audit-of-syria-refugees-finds-organized-crime-and-child-soldiers-idUSBRE9740V120130805>

is a borderline problem for Syrian refugees in Jordan, it seems plausible to assume that the problem is potentially even more pronounced for Syrian refugees in Western Europe.



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## Appendix

### A1. Payoff schemes of the games

#### A1.1 Payoff schemes of the dictator games

Game	Option X	Option Y
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

#### A1.2 Payoff schemes of the lotteries

Game	Option X	Option Y With 30% / 70%	Expected Value
1	250	400/200	<b>260</b>
2	<b>260</b>	400/200	<b>260</b>
3	<b>270</b>	400/200	260
4	<b>150</b>	0/200	140
5	<b>140</b>	0/200	<b>140</b>
6	130	0/200	<b>140</b>

## A2. Questionnaire for PTSD Symptoms

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
1. Recurrent thoughts or memories of the most hurtful or terrifying events.				
2. Feeling as though the event is happening again.				
3. Recurrent nightmares.				
4. Feeling detached or withdrawn from people.				
5. Unable to feel emotions.				
6. Feeling jumpy, easily startled.				
7. Difficulty concentrating.				
8. Trouble sleeping.				
9. Feeling on guard.				
10. Feeling irritable or having outbursts of anger.				
11. Avoiding activities that remind you of the hurtful event.				
12. Inability to remember parts of the most hurtful events.				
13. Less interest in daily activities.				
14. Feeling as if you don't have a future.				
15. Avoiding thoughts or feelings associated with the hurtful events.				
16. Sudden emotional or physical reaction when reminded of the most hurtful events.				

### A3. Mean scores of the questionnaire for PTSD symptoms

#### A3.1 Syrian refugees

Statistic	N	Mean	St. Dev.	Min	Max
Question1	63	3.016	1.039	1	4
Question2	62	2.516	0.987	1	4
Question3	61	2.082	1.021	1	4
Question4	61	2.443	1.041	1	4
Question5	63	2.127	1.070	1	4
Question6	62	2.597	1.180	1	4
Question7	63	2.333	0.967	1	4
Question8	62	2.339	1.086	1	4
Question9	62	2.516	1.098	1	4
Question10	63	2.190	1.105	1	4
Question11	62	2.532	1.051	1	4
Question12	62	1.984	0.859	1	4
Question13	62	2.113	0.889	1	4
Question14	61	2.984	1.118	1	4
Question15	63	2.508	0.948	1	4
Question16	62	2.597	1.207	1	4

#### A3.2 Jordanian subjects

Statistic	N	Mean	St. Dev.	Min	Max
Question1	94	2.479	0.936	1	4
Question2	92	2.424	0.940	1	4
Question3	91	1.956	0.906	1	4
Question4	92	2.163	0.986	1	4
Question5	94	1.904	0.995	1	4
Question6	94	2.840	0.919	1	4
Question7	94	2.564	0.911	1	4
Question8	93	2.215	0.998	1	4
Question9	93	2.677	1.002	1	4
Question10	94	2.500	0.936	1	4
Question11	94	2.585	0.966	1	4
Question12	91	1.901	0.790	1	4
Question13	93	2.151	0.859	1	4
Question14	92	1.924	0.986	1	4
Question15	92	2.272	0.878	1	4
Question16	94	2.330	1.020	1	4



### A3.3 Comparison with Wilcoxon-rank-sum test

	Syrian Participants					Jordanian Participants					p-value
Variables	N	Mean	St. Dev.	Min	Max	N	Mean	St. Dev.	Min	Max	
Question1	63	3.016	1.039	1	4	94	2.479	0.936	1	4	0.037
Question2	62	2.516	0.987	1	4	92	2.424	0.940	1	4	0.934
Question3	61	2.082	1.021	1	4	91	1.956	0.906	1	4	0.731
Question4	61	2.443	1.041	1	4	92	2.163	0.986	1	4	0.082
Question5	63	2.127	1.070	1	4	94	1.904	0.995	1	4	0.149
Question6	62	2.597	1.180	1	4	94	2.840	0.919	1	4	0.227
Question7	63	2.333	0.967	1	4	94	2.564	0.911	1	4	0.499
Question8	62	2.339	1.086	1	4	93	2.215	0.998	1	4	0.659
Question9	62	2.516	1.098	1	4	93	2.677	1.002	1	4	0.576
Question10	63	2.190	1.105	1	4	94	2.500	0.936	1	4	0.142
Question11	62	2.532	1.051	1	4	94	2.585	0.966	1	4	0.361
Question12	62	1.984	0.859	1	4	91	1.901	0.790	1	4	0.999
Question13	62	2.113	0.889	1	4	93	2.151	0.859	1	4	0.616
Question14	61	2.984	1.118	1	4	92	1.924	0.986	1	4	<b>&lt;0.001</b>
Question15	63	2.508	0.948	1	4	92	2.272	0.878	1	4	0.043
Question16	62	2.597	1.207	1	4	94	2.330	1.020	1	4	0.250

**A4. 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

## A5. Instructions

### A5.1. 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 Jordanian person.

**Have a look at this example:**

Please choose option (x) or (y) by ticking the box below each letter.

#### Option (x)

<b>X</b>	Yo	Other
	200	100

You receive 200 points

The other person receives 100 points

#### Option (y)

<b>Y</b>	Yo	Other Person
	100	200

You receive 100 points

The other person receives 200 points

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 a Jordanian person. We will pay you both according to one randomly chosen decision.

*Which option do you choose in the following 6 situations?*

1.

X <input type="checkbox"/>	You	Other Person
	0	250

Y <input type="checkbox"/>	You	Other Person
	60	240

2.

X <input type="checkbox"/>	You	Other Person
	60	240

Y <input type="checkbox"/>	You	Other Person
	120	220

3.

X <input type="checkbox"/>	You	Other Person
	120	220

Y <input type="checkbox"/>	You	Other Person
	180	180

4.

X	You	Other Person
<input type="checkbox"/>	180	180
Y	You	Other Person
<input type="checkbox"/>	220	120

5.

X	You	Other Person
<input type="checkbox"/>	220	120
Y	You	Other Person
<input type="checkbox"/>	240	60

6.

X	You	Other Person
<input type="checkbox"/>	240	60
Y	You	Other Person
<input type="checkbox"/>	250	0

### A5.1. Lottery Game

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 (y) by ticking the box below each letter.

<b>X</b>	<input type="checkbox"/>	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <div style="display: flex; justify-content: space-around; width: 100%;"> <div style="display: flex; justify-content: space-around; width: 100%;"> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> </div> </div> </div>	<p style="font-size: small;">If you pull any card, you receive 200 (100+100) points</p>
<b>Y</b>	<input type="checkbox"/>	<div style="width: 45%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <div style="display: flex; justify-content: space-around; width: 100%;"> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> </div> </div> <p style="font-size: small;">100+0</p> </div> <div style="width: 45%; text-align: center;"> <div style="border: 1px solid black; padding: 5px; display: inline-block;"> <div style="display: flex; justify-content: space-around; width: 100%;"> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> </div> </div> <p style="font-size: small;">100+200</p> </div>	

- In option (x) you get **100 additional points** for any card you pull (regardless the color).
- In 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?

1.

X <input type="checkbox"/>	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> <div style="display: flex; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> </div> </div> <div style="text-align: right; margin-top: 10px;"> 200  + 50 </div> </div>
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Y <input type="checkbox"/>	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> <div style="display: flex; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> </div> </div> <div style="text-align: right; margin-top: 10px;"> 200  +200 </div> </div> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> <div style="display: flex; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> </div> </div> <div style="text-align: right; margin-top: 10px;"> 200  + 0 </div> </div>
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2.

X <input type="checkbox"/>	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> <div style="display: flex; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> </div> </div> <div style="text-align: right; margin-top: 10px;"> 200  + 60 </div> </div>
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Y <input type="checkbox"/>	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> <div style="display: flex; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> </div> </div> <div style="text-align: right; margin-top: 10px;"> 200  +200 </div> </div> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> <div style="display: flex; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> </div> </div> <div style="text-align: right; margin-top: 10px;"> 200  + 0 </div> </div>
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3.

X <input type="checkbox"/>	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> <div style="display: flex; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> </div> </div> <div style="text-align: right; margin-top: 10px;"> 200  + 70 </div> </div>
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Y <input type="checkbox"/>	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> <div style="display: flex; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: white; border: 1px solid black;"></div> </div> </div> <div style="text-align: right; margin-top: 10px;"> 200  +200 </div> </div> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px; margin-right: 10px;"> <div style="display: flex; gap: 5px;"> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> <div style="width: 15px; height: 15px; background-color: black; border: 1px solid black;"></div> </div> </div> <div style="text-align: right; margin-top: 10px;"> 200  + 0 </div> </div>
-------------------------------	--

4.

X	<div> <div> <div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div> </div> </div>		200
	<input type="checkbox"/>		- 50

Y	<div> <div> <div></div><div></div><div></div> </div> </div>	200	<div> <div> <div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div> </div> </div>	200
	<input type="checkbox"/>	- 200		- 0

5.

X	<div> <div> <div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div> </div> </div>		200
	<input type="checkbox"/>		- 60

Y	<div> <div> <div></div><div></div><div></div> </div> </div>	200	<div> <div> <div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div> </div> </div>	200
	<input type="checkbox"/>	- 200		- 0

6.

X	<div> <div> <div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div> </div> </div>		200
	<input type="checkbox"/>		- 70

Y	<div> <div> <div></div><div></div><div></div> </div> </div>	200	<div> <div> <div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div> </div> </div>	200
	<input type="checkbox"/>	- 200		- 0