Mothers, Fathers, and Others: Competition and Cooperation in the Aftermath of Conflict

Alessandra Cassar, Pauline Grosjean, Fatima Jamal Khan, and Miranda Lambert*

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Abstract

We investigate the possibility that females and males had a distinct path in the evolution of competitiveness and cooperation. We conducted an experiment to elicit preferences for in-group egalitarianism and individual competitiveness for a random sample of 751 individuals in Sierra Leone (aged 18-85) to contrast the behavioural consequences of victimisation during the 1991-2003 civil war across sex and parental roles. Our data show that mothers and fathers display the highest level of cooperation, yet conflict exposure does not affect them. Egalitarianism increases after victimisation only among non-parents, with an effect stronger for males who are the least egalitarian to start with. Conflict exposure tames everyone's competitive tendencies, but has the opposite effect for mothers, the least competitive in the absence of conflict. A sample of competitiveness among 191 parents from Colombia shows a similar effect. Our results imply that conflict, by closing sex and parental gaps in behavior, select for pressures to reduce within-group differences possibly to enhance internal cooperation. It primes individuals towards group *and* individual survival depending on both sex and parental role.

* Cassar: University of San Francisco, Department of Economics (email: acassar@usfca.edu). Grosjean and Khan: UNSW, School of Economics (emails: p.grosjean@unsw.edu.au, fatimajamal.khan@unsw.edu.au). Lambert: Texas A&M (email: miranda.lambert@tamu.edu). Cassar acknowledges financial support from the University of San Francisco, help on the ground from BRAC, and outstanding research assistance in the field from Bethany Gerdemann. Grosjean gratefully acknowledges financial support from Australian Research Council FT 190100298. This study received IRB approval from USF (IRB: 1029) and from UNSW (HC191036). The findings and views reported in this paper are the authors' and should not be attributed to the institutions the authors are affiliated with. Data and materials have been deposited in the Open Science Framework (link).

1. Introduction

Behavioural studies in the aftermath of conflict point to the emergence of a set of psychological traits ---such as parochial altruism, egalitarianism, and selective trust (i.e. a preferential treatment of members of the in-group vs. those from the out-group)--- conducive to societal cooperation and coordination (e.g. Bellows and Miguel 2009; Voors et al. 2012; Bauer et al. 2014; 2016; Cassar et al. 2013). These results are typically explained within the evolutionary framework that traces the evolution of human prosociality to intergroup competition (Darwin 1871 [1981]; Alexander 1987; Henrich 2004; Choi and Bowles 2007; Bowles 2006; 2008; 2009; Turchin 2016). The idea is that, if intergroup conflict was a frequent human experience, evolution would favour groups with higher proportions of prosocial individuals, i.e. individuals ready to fight and sacrifice themselves for their in-group against the out-group, and to share resources more equally in order to enhance group survival (e.g. Bernhard et al. 2006; Bowles 2009; Boyd et al. 2003; Bowles et al. 2003). The proposition that competition between groups can create circumstances favourable to the emergence of cooperation has been supported by experimental works where costly punishment of norms violators (Sääksvuori et al. 2011) and other group-functional behaviours can be sustained once competition is made salient (Gunnthorsdottir and Rapoport 2006; Burton-Chellew et al. 2010). In groups of small size and limited migration, genetic relatedness between group members could account for the evolution of altruistic helping by kin selection (Hamilton 1964), while in larger groups it would be the cultural inheritance of behaviour to permit the emergence of altruism (Boyd and Richerson 1982, Fehr et al. 2002; Henrich 2004; Lehmann and Feldman 2008).

With few exceptions (e.g. Micheletti et al. 2020), these models either leave out the role of females in the evolution of prosociality or focus on specifically male adaptations, making the evolution of female strategies in this context a topic understudied. Measuring preferences in post-conflict societies, by comparing individuals with varying degrees of victimisation exposure, has been used in recent years to get insights into those behavioural reactions expected to be adaptive to group and/or individual survival. The idea is that, if a specific behaviour is empirically observed to react to a certain event, by asking which functions it was serving, it may tell us something about the selection pressures that contributed to shape it (e.g. Henrich et al. 2001; Bernhard et al. 2006; Apicella and Silk 2019). In this paper, we investigate the hypothesis that females and males had a distinct path in the evolution of egalitarianism-based prosociality and individual competitiveness. Our empirical strategy is to contrast the effect of individual victimisation across men and women along the parental stage (as we expect the presence of offspring to matter for understanding female behaviour) in a novel sample of 751 individuals in Sierra Leone between the ages of 18 and 85. We

consider the reactions of different types of victimisation (injury, destruction of material resources, and loss of life of a household member during the 1991-2003 civil war) on social preferences towards the in-group and on individual competitiveness.

We start by deriving a series of hypotheses linking reactions to conflict with an individual's sex and parental status according to a set of evolutionary theories. Then, we proceed to discuss our empirical results which show that both sex *and* parental status matter. First, we find that conflict victimisation is associated with the strengthening of prosociality (both through an increase in in-group egalitarianism and a decrease in competitiveness) but, second, females are not excluded by this process. Third, mothers display as much egalitarianism as fathers, though neither of them increases their egalitarianism any further after victimisation. Fourth, conflict exposure exerts its effects mainly among non-parent, both males and females, those who may be most needed to contribute to group survival but the least likely to do so in the absence of conflict. Fifth, the effect is present for both sexes but slightly stronger for non-parent males, who are the least egalitarian to start with, perhaps because group survival may depend not only on their willingness to share resources, as it does for women, but also to fight for their group, an even more extreme form of cooperation. Sixth, men are more competitive than women, but only in the parent category (mothers are the least competitive group) but, seventh, while conflict experience, in general, tames everyone's competitive tendencies towards the in-group, it has the opposite effect for mothers. For mothers, the increase in competitiveness may be primarily driven by the constraints of kin survival, which may, for them, be as important (or even dominate in the short term) group survival constraints.

The magnitude of these effects is considerable, to the extent that conflict victimisation completely closes the gap in in-group egalitarianism between parents and non-parents, and closes the gap in competitiveness between males and females. Hence, a correlate of our results is that conflict victimisation reduces within-group behavioural differences in cooperation and competitiveness, contributing to the equalization of outcomes within the group. Insofar as harmony promotes cooperation, such reactions further lend credence to the idea that the effects of conflict prime individuals towards behaviors that increase the odds of group survival, yet, an analysis along sex and parental lines adds important caveats and contributes some new ideas.

Our work contributes to the literature on sex differences in behaviour, with a particular focus on female strategies from an evolutionary perspective. Existing studies on the effects of conflict on social preferences are surprisingly silent about gender, an interesting fact in light of the vast literature on the behavioural differences between men and women in the absence of conflict (e.g.

Niederle, and Vesterlund 2007; Cassar and Zhang 2017; Cassar and Rigdon 2021). In addition, our work contributes to the accumulating empirical evidence on the behavioural consequences of war victimisation from the perspective of inter-group conflict as potential catalyst to prosociality and cooperation. While our results are consistent with the rest of the literature that documents increases in in-group egalitarianism, we bring a finer understanding of the underlying mechanism by documenting heterogeneous effects across gender and parental status. We also shed light on a vastly understudied trait in relation to the behavioural consequences of conflict and disasters: competitiveness. To the best of our knowledge, the only other paper on conflict exposure and competitiveness is Cecchi, Leuveld and Voors (2016), although their focus in on competitiveness towards the out-group and only for males. Hence, we document for the first time how conflict curbs in-group competitiveness. This result complements the existing literature by showing that competitiveness comes at the expense of egalitarianism, suggesting that curbing competitiveness promotes cooperation within the group.

2. Theoretical Background and Methods

2.1. Theoretical Background

The theories that root human cooperation in intergroup competition are based on evolutionary models in which conflicts between groups select for adaptive psychological reactions that promote the success of one's group (Darwin 1871[1981]; Alexander 1987; Boyd et al. 2003; Henrich 2004). A first set of theories focuses on purely genetic evolution, where conflicts among different groups shift the share of individuals displaying prosocial behaviour directly, favouring parochial altruists, i.e. individuals displaying ingroup prosociality and antagonism towards outsiders (Bowles 2006; Choi and Bowles 2007; Wilson 2012). A second set of theories relies on the interaction between cultural and genetic evolution, where intergroup competition favours cultural practices (such as norms and institutions) that promote the success of one's social group (Henrich and Boyd 2001; Richerson and Boyd 2001). Selection within one's group would then favour psychological reactions that incentivize stronger adherence to those local norms and beliefs that have already been selected (via cultural evolution) for greater societal cooperation, therefore improving the group's potential for success in competitions. Furthermore, just as local norms already prescribe measures capable of fostering cooperative behaviour, individuals more exposed to intergroup conflict can be expected to express greater prosociality. As social norms are eventually internalized as preferences, intrinsically motivating an individual to choose a certain behaviour, these models (both those based

on genetic evolution and those based on gene-culture coevolution) predict an increase in preferences for cooperation, a change that should be observable especially among those who more closely experience the conflict.

H1: War victimisation strengthens prosociality (increases egalitarianism and lowers competitiveness).

Empirical evidence generally tends to support this idea. For example, Gneezy and Fessler (2012) conduct experiments with senior citizens before, during and after the 2006 Israel–Hezbollah war, and report that, during wartime, people are more willing to pay costs to punish non-cooperative group members and reward cooperative group members than before and after the war. Blattman (2009) shows that past abduction by rebels is linked to increased political engagement in northern Uganda. Bellows and Miguel (2009) find a positive correlation between an experience of violence and political and social behaviour in Sierra Leone. Voors et al. (2012) show that individuals who have experienced violence in Burundi, either directly or indirectly in communities that have been attacked, display more altruistic behaviour towards their neighbours. Bauer et al. (2014) find that war victimisation increased people's egalitarian motivations toward their in-group long after the wars in the Republic of Georgia and Sierra Leone ended, but mainly if exposure happened during a developmental window (between 7 and 20 years of age).

These empirical works do not report separate effects for females. From a theoretical perspective, the models described above, where selection operates at the group level, are either silent about sex or, insofar as those more actively engaged in war are primarily males, expect males to react more strongly to conflict cues and victimisation. Models that explicitly look at sex when explaining prosociality focus primarily on the needs of men's organized activities---the formation of coalitions to defeat adversaries---and analyse the selection of traits, such as altruism with the insiders and aggression towards the outsiders, expected to be predominantly male (e.g. Wrangham 2018, Benenson and Markovits 2014). The hypothesis of a male-specific coalition psychology has been advanced to suggest a tendency in men towards group-based competition, i.e. to behave spitefully toward the out-group (Tooby and Cosmides 1988). Such psychology would have evolved in response to mate selection, a pressure especially felt by men, as men would improve their fitness by gaining access to more women and securing the gains from prestige, whereas women would not. Proposed as the "male warrior hypothesis" (Vugt et al. 2007), men would have evolved a group-oriented psychology that motivates them to display in-group bias: higher cooperation and altruism towards insiders with, concurrently, spiteful behaviour towards outsiders. These complementary traits would be the result of conflict between male coalitions and the mechanisms that continue to produce it.

Existing empirical evidence find some support to these ideas. Tribal warfare in traditional societies appear almost exclusively the domain of men, and male warriors have been found to hold greater status within their community and to have more sexual partners than other men (Chagnon 1988). Male gang members in the U.S. have been reported to have above-average mating opportunities (Palmer and Tilley 1995). Laboratory experiments appear to support the idea that men exhibit stronger in-group biases compared to women, even in minimal groups (groups formed on trivial social categories like preferring a painter over another) and in one-shot settings. For example, Vugt et al. (2007) find men to be more sensitive to cues of intergroup conflict by cooperating more with their group than where there is no threat, while women do not. Yet, a less talked about result of their widely cited study is that women, unaffected by the threat manipulation, contributed more to the group than men across all experiments. Yuki and Yokota (2009) also find men more sensitive than women to priming of intergroup competition and only men to show an in-group bias. An interesting finding repeated across experiments is that, while in-group biases are indeed found more present in males than in women, most studies fail to report a concurrent spiteful behaviour towards the out-group, hence removing an important pillar of the male warrior hypothesis (Yamagishi and Mifune 2009). The "display of solidarity" hypothesis has then been suggested to explain this unconditional nature of male in-group cooperation and still anchor the evolution of prosociality to males' needs. According to this idea, the benefits that a successful display of solidarity could bring, i.e. the visible size of the coalition, would be a value in itself because it would actually serve as a deterrent to further conflicts (Gould 1999). The hypothesized real benefit to in-group cooperation would be saving having to physically fight in wars, a cost born primarily by men (Sidanius and Pratto 2001). Summarizing, all these theories predict that reactions to war experiences and conflict cues should occur mainly among the – male – (potential) fighters.

H2: The increase in prosociality following conflict exposure (higher egalitarianism and lower competitiveness) is stronger for men than for women.

In our work, we ask whether women's motivations and preferences follow a path similar to men's. When it comes to female contribution to the evolution of prosocial preferences, the models above remain largely silent. A notable exception is the model of Micheletti et al. (2020) that derives the conditions (dispersal and scale of the competition) which should influence the overall levels of within-group altruism specific to each sex. In fact, female preferences tend to be more explicitly investigated in models that focus on kin-selection, parental investment and cooperative breeding, as it is in the domain of contribution towards the successful raising of offspring (and their

offspring) that evolutionary psychology traces the origins of sex differences in preferences and behaviour (Trivers 1972; Hrdy 2009; Cassar and Zhang 2021).

Here, we propose to distinguish along life stages and look at difference in the costs and benefits that similar strategies impose on individuals who already have offspring (parents) and those that do not (non-parents). At the individual level, where kin selection favours the reproductive success of an individual's relatives, even at a cost of own reproductive success and survival, individuals don't just compete against each other (for resources, mating opportunity and the success of their offspring) but also cooperate to help genetic relatives. In a cooperative breeding species such as ours, the needs felt by parents, especially mothers, to receive help in caring for their children would lessen intragroup competition to support some level of cooperation geared towards childrearing. Given the tremendous challenges faced by our ancestors to successfully rear their young, early hominin mothers relied on group members to help care for, protect, and nourish their unusually slow-maturing children (Hrdy 2009). Such cooperative breeding would have been based mainly on reciprocity, mutual trust and altruism, rather than on coercion (given the costs of monitoring and the severity of the consequences of a care-job poorly done). The need to elicit help from others, kin and not, in an environment challenging for survival, would have proved the underpinning for mutual understanding and inter-subjectivity, i.e. those precursors of other-regarding preferences crucial for prosociality. Furthermore, to make sense of features specific to human cooperation---its existence between unrelated individuals, in short-term interactions, in large scale groups, and with a high degree of variability among societies---such psychological apparatus would have needed to be especially adapted for the cultural learning of social norms, as this mechanism would facilitate the assortment of cooperation necessary to solve the ever-present problem of free riding (Apicella and Silk 2019). An alternative model to cooperative breeding is the biocultural reproduction suggested by Bogin et al. (2014), a framework which ties human ability to adhere to social norms to the production of cooperation in reproduction.

This pressure to cooperate for survival would have been felt by all, but especially those who already have offspring: mothers not capable of producing enough calories to bring a large-brained baby till maturity; fathers required to provide and protect; other members of the group (especially postmenopausal women expected to serve alloparental functions). With this model in mind, we expect that, when it comes to prosociality, individuals with children may put more weight on societal cooperation than those without children. When one's group includes more close relatives (offspring especially), selection can favour cooperative behaviours because prosocial acts benefit, directly, others who carry the same genes and, indirectly, those who help care for them. Laboratory

experiments are starting to return evidence that a parental caregiving motivation leads people to behave less selfishly. For example, Wolf et al. (2021) reports an increase in general prosocial motivation and behaviour in adults following manipulations of children salience. Palomo-Vélez et al. (2020) find links between (especially one's own) children and prosocial values and behaviour geared toward environmental conservation. Gilead and Liberman (2014) show that the activation of caregiving motivations can enhance bias against out-groups following manipulations in which their members pose a salient threat. These considerations suggest that parents may feel more invested in the interests of the group, cooperating at higher levels than non-parents.

H3: Parents are more prosocial than non-parents (more egalitarian and less competitive).

As with the intergroup competition models, also in this framework it is reasonable to expect that an increase in adversity, as brought about by conflict, would strengthen prosocial bonds and lower individual competitiveness, to better react as a group to external dangers. Since parental success is likely to be intertwined with group survival, an overall reaction that improves cooperation at the group level would be expected both by models in which parental investment is mainly driven by biological considerations and by models in which parental investment (especially maternal) is induced by culturally enforced norms of parental obligations (Bogin, Bragg, and Kuzawa 2014). Yet, here it is plausible that life stage (having children or not) is relevant. We can see several alternative hypotheses. On the one hand, parents should react stronger than non-parents to safeguard the group, because of greater returns to their inclusive fitness (since they already have children in the group who represent high residual reproductive value and whose survival depends on their parents' sharing networks). On the other, adversity may have a lower scope to further increase prosociality among parents, who cooperate already at higher levels than non-parents and may experience a concurrent higher need to provide for their own offspring. Furthermore, non-parents may have more to gain, relative to parents, in cooperating to out-compete the other group when winning comes with increased reproductive opportunities (e.g. by signalling to potential romantic partners their qualities commitment and skill to potential romantic partners via contributions to the group, especially under conditions of intergroup conflict).

H4: Non-parents react more strongly to conflict than parents (increasing cooperation and reducing competition).

Combining this prediction with the male warrior hypothesis, we expect the strongest behavioural response to conflict cues to occur among non-parent males.

H5: Especially non-parent males.

When it comes to female competitiveness, according to parental investment theory, women are expected to be less competitive than men (Darwin 1871; Bateman 1948; Trivers 1972).

H6: Men are more competitive than women.

Yet, more recent work has documented the occurrence and evolutionary significance of female competitiveness, given the many benefits that resources and status provide to one's offspring (e.g., Hrdy 1981; 2009; Knight 2002; Clutton-Brock 2007; Brown et al. 2009; Stockley and Campbell 2013; Benenson 2013; for a review see Cassar and Rigdon 2021). Rather than being less competitive, women may be motivated by different incentives, especially those that could provide an explicit benefit to their children (Cassar and Zhang 2017, 2021). Hence, while women may be found to be on average less competitive than men, we expect that when they are in critical need as when injured or lacking resources, mothers may become more competitive and less willing to decrease their share of resources.

H7: Mothers increase their competitiveness in reaction to conflict.

In conclusion, previous models reveal a complex trade-off between societal cooperation and individual interests. The set of theories based on intergroup conflict predicts a reaction to victimisation expected to increase preferences that permit better cooperation within the group. The male warrior and display of solidarity hypotheses expect such higher prosociality to be felt especially by males. When we consider our cooperative breeding nature and look at strategies along life stages, we expect parents to be more invested in group cooperation. Yet, a further increase of egalitarianism and reduction of competitiveness may be more costly to parents than non-parents, as it would reduce resources available for one's offspring. Hence, the strongest shift in increased prosociality as a result of exposure to conflict may actually be expected among individuals without children. Along the parental lines is where the hardest trade-off between individual and group interests resides. If parental investment is indeed higher for women than for men, mothers can be expected to be the ones for whom an increase in prosociality is the more costly, and could be expected to increase their competitiveness as a reaction to conflict.

2.2. Sampling Strategy

Our study uses a novel dataset collected during May-August 2018. The sample consists of 751 individuals from fourteen randomly selected villages chosen from two regions selected at random

among the four provinces of Sierra Leone (Makeni in the Northern Province and Kenema in the country's Eastern Province, see Figure D.1 in SI). In each village, starting from pre-specified points of randomly selected neighborhoods, our team of researchers and enumerators invited into the study the occupants of every third house until the predetermined number of participants was reached. One condition for inclusion in the sample was for each household to have most of its adult members able and willing to participate at the same time. Selective entrance into the sample turned out not to be a concern as nearly all the invited households accepted to participate. Given the poverty of the region and lack of work opportunities outside the homes, most individuals were either already home at the time of the study or not too far to be called home by their family members. Through this random sampling process and the inclusion of all adult members of a household, we obtained a representative sample of rural Sierra Leonean villagers. All of the activities took place outside the participants' homes in secluded areas, ensuring participants' privacy when playing and confidentiality of answers.

We provide in Section 3.2. a validation of our results in a sample of 191 parents of schoolchildren in Colombia for whom we obtained preferences for competitiveness.

2.3. Experimental Design

Each experimental session consisted of a series of games designed to elicit individual preferences for competition and cooperation, plus a final survey. Each participant was paid a show up fee of Le15,000 as compensation for the hours of labor potentially missed while participating in this study, plus a variable payment of about Le1,827 for one round, randomly chosen, of the experimental games. In total, the average payout each participant received was Le16,827 (about $2.15 at the time when $1=Le7,900, a non-trivial amount in a country where its Le500,000 minimum wage per month is in the bottom percent of all countries). Each participant took his/her decision in private and such choices were kept confidential to both elicit more truthful responses and to eliminate the potential for retaliation or expected redistribution of the gains after the session. All the activities were conducted in random order to balance learning effects.

2.3.1 The Cooperation Game

The cooperation game is based on Fehr et al. (2008) protocol to elicit other-regarding preferences. A modified version was used by us to obtain egalitarianism-based prosocial preferences for children and adults in the aftermath of conflict in a previous study of Sierra Leone and Georgia (see Bauer et al. 2014). The complete experimental dataset includes a series of four dictator games

(the costly sharing, costless sharing, costly envy, and costless envy games) played against a series of characters in a participant's network. The participants were instructed that they would be paid only for one round randomly drawn at the very end, a standard experimental procedure for keeping each game salient and prevent correlations across rounds.

The results discussed in this paper center on prosocial preferences towards the in-group, so we focus the analysis on the behavior elicited through the costly versions of these games played against an anonymous other person (see Borgerhoff at al. 2021) for the study of intrahousehold prosociality among monogamously and polygynously married individuals). The in-group elicitation procedure is usually done through a same village/distant village manipulation of the recipient. Despite our best effort at incentivizing the games for both the senders and the anonymous receivers, during piloting we had to make the change to incentivize only the senders' decisions (i.e. how much our participants kept for themselves), as the local enumerators were worried that sending nothing versus a positive amount (no matter how small) to neighbors would create tensions in the village. The participants knew that their choice would be implemented for them, and whatever they give to others would remain with the local enumerators. This modification of the original feature effectively biases our results against us finding differences across recipients and against us finding significant levels of generosity. Importantly, this bias should affect everyone in a similar manner, and we cannot think of reason that it would alter the behavior selectively by sex or parental status. Yet, as we show in the next sections, participants systematically and significantly chose more egalitarian distributions of the resources, displaying deeply seated norms of cooperative behaviour. Specifically, 46.87 percent choose the non-egalitarian option in the costly sharing game and 49.40 percent choose the non-egalitarian option in the costly envy game.

The Costly Sharing game, depicted in SI Figure A.1, presents the participant with the choice between splitting the pie equally (Le5,000 for self and Le5,000 for the receiver) or keeping it all for his/herself (Le10,000 and Le0). Sharing could be an expression of generosity and costly gift-giving or could be a desire to maintain equality between the matched partners. Whatever the motivation behind the choice to share, the economic impact on the receiver would be unambiguously positive while on the sender it would be unambiguously negative (costly).

The Costly Envy game deals with disadvantageous inequalities. The sender has to choose between the egalitarian option (Le5,000 for self and Le5,000 for the receiver) or Le10,000 for self and Le30,000 for the receiver (see SI Figure A.1). The former choice would reveal either a strong preference for egalitarianism or a dislike of disadvantageous inequalities to the point that one is willing to pay a cost for the other not to have more. The latter choice could reveal either a

preference for desiring more resources for self, a desire to send more resources to the partner, and/or a will to maximize the resources extracted from the experimenter.

To better understand preferences and isolate the motive producing a certain behavior we proceed by combining the choices between these two games and create categories of behavior. In this paper, we are interested in prosociality motives that may be conducive to societal cooperation. The literature has isolated egalitarianism as one of those important catalyst of cooperation. In the evolutionary approaches, intergroup competition works through the curtailing of within-group differences in fitness to cement internal cohesion and invigorate cooperation (Bowles 2006). In laboratory experiments, individuals are repeatedly found to be willing to alter the income of others even when it costs them, and this behaviour has the effect of promoting further cooperation (Fehr et al. 2002; Andreoni et al. 2003). Rather than just reducing other's income, egalitarian motives appear to be driving this income-altering behaviour and are suggested to be a critical factor underlying the evolution of strong reciprocity and cooperation in humans (Dawes et al. 2007). Consistent with this view, a growing number of empirical studies have linked higher inequality to greater social disharmony, from higher illiteracy to more stress, violence, drug dependence and mental illness (Wilkinson and Pickett 2010), to slower economic growth (Sokoloff and Engerman 2000), and to societal wellbeing or collapse (Boehm 1999; Turchin 2016).

In our analysis, we define *Egalitarian* as a participant that selects the egalitarian option for both the sharing and envy games described above. Participants who conform to this category will have a value of 1 for this variable, the others will have a 0.

2.3.2 The Competition Game

The competition game is based on an oral version of the standard experimental protocol for eliciting competitive preferences (Niederle and Vesterlund 2007; Cassar and Zhang 2021). The game main task is to perform one-minute of mental summation: 1+8=9, 9+3=12, 12+2=14, etc. Adding up in one's mind is a quotidian function in Sierra Leone where even those with little education and low literacy perform it regularly to complete transactions and, in general, are very good at it. To keep the task difficulty constant and equal among participants, we worked from a predetermined list of additions, adding only one-digit number to each previous total.

The competition game unfolds in a sequence of three rounds as shown in SI Figure A.2. The first two rounds are the same for everyone and expose the participants to two different payment schemes. The first method, termed Piece-Rate, is a payment method for which participants receive

a relatively low but certain amount per correct answer (Le1,000). A second scheme, named Tournament, is a compensation method in which participants are paid twice as much per correct answer as the Piece-Rate method (Le2,000 per correct answer), but only if they solve correctly more additions than a randomly matched partner. This second round is a compulsory competition against an anonymous person from the same village whose score has been obtained in advance (during pilots of the experiment).

What matters for us is not how well a participant can solve additions as in Round 1 or 2, but which payment scheme is preferred by a participant that has experienced both environments: a low but certain rate or a higher, yet uncertain, one that involves measuring oneself against others. The relevant part of the experiment, then, starts with Round 3, when participants are asked to decide, privately, whether they choose to be paid according to the Piece-Rate rule or the Tournament rule for the round to follow. The important feature to this design is that, when tournament is chosen, each participant's current performance is matched against the opponent past performance in Round 2. This was done for several reasons: to compare both competitors' performances under the same competitive environments, to make sure each participant had a partner (the new partner may have chosen piece-rate), and, most important of all, to remove the motive of not wanting to impose a cost (by winning) on another and confound competition with other-regarding preferences. In this paper we focus on the round where each participant is given the choice to compete or not against an anonymous person from the same village as a measure of in-group competitiveness. In our analysis, we define *Competitiveness* as this choice to compete, coded as 1 when the subject chooses Tournament, 0 otherwise.

Since competitiveness is inextricably linked to confidence and tolerance to risk, we also elicit a measure of risk aversion by including an incentivized simple risk game experimental module (unitary lottery as in Eckel and Grossman 2008) and a "guess how good you were" module to measure respondent's confidence. Controlling for risk and confidence enables us to isolate competitiveness behaviour from its usual confounds. We also control for respondents' ability (measured by the number of correct answers in Round 1), which could influence willingness to compete.

2.4. Descriptive statistics

Demographics. Our sample consists of 751 adults (653 parents and 98 non-parents, a natural unbalance given the adult age range we targeted). The relevant descriptive statistics are in Table 1. Since we aim to contrast the effect of conflict along reproductive stages and gender, we present

our analysis both for the full sample and separately for parents vs. non-parents; and for women vs. men. By virtue of the demographic composition of rural villages and the prevalence of polygyny, women are slightly over-represented in our sample of parents (387 mothers vs. 266 fathers) but balanced in the sample of non-parents (47 females and 51 males). The average number of children (intensive margin) is 3.69, with fathers reporting more children compared with mothers due to the high prevalence of polygyny in our sample (44.94% of our sample is in a polygynous household). The majority of our sample is Christian, with the Muslim minority slightly over-represented in the non-parent sample (19% vs. 13%, two-sample t-test with equal variance difference in means P-value: 0.07 – hereafter reported P-values of difference in means come from two-sample t-tests with equal variance). In the survey, we asked about people's age. However, inspecting the age distribution reveals bunching around multiples of five, suggesting that people do not report their age precisely. To reduce measurement error, we capture age by terciles of the age distribution: young (18, our youngest respondent, to 28), middle aged (29-39), and old (above 40). Non-parents are, expectedly, younger than parents (89% are young, compared to 29% of parents).

Competition and cooperation results. For egalitarianism (choosing the equal split in both the costly sharing and costly envy games, as described in Section 3.1.), the observed divide is not across genders, but across parental status. Parents are a lot more cooperative than non-parents: 36% of parents are egalitarian within their in-group, compared to 26% of non-parents (P-value: 0.05), with no difference between mothers and fathers (35% vs. 36%, P-value: 0.73) or between non-parent men and non-parent women (25% vs. 26%, P-value: 0.99).

In contrast, for competitiveness (choosing to compete in the tournament, as described in Section 3.1.), the main divide is observed across gender lines. Competitiveness does not differ across the two samples of parents and non-parents (58% vs. 60%, two-sided difference in means P-value: 0.72). However, men, and especially fathers, are more competitive than women: the two-sided difference in means between fathers (65%) and all women (54%) P-value is 0.01.

Victimisation. We consider three measures of individual victimisation. The first (*Injured*) is an indicator variable taking value 1 if either the respondent was injured or one of his or her household member was injured during the civil conflict. The second (D*estruction*) takes value 1 if the respondent reports loss of property as a result of the conflict. The third (*Killed*) is a dummy variable taking value 1 if a member of the respondent's household was killed during the conflict. Incidence of victimisation is very high in our sample. Since parents are older on average and the conflict spanned over the entirety of the 1990s, incidence of victimisation is particularly high in the sample

of parents. 66% of parents and 53% of non-parents report injury; 60% of parents and 47% of non-parents report death; 79% of parents and 61% of non-parents report destruction. Background on the Sierra Leone conflict is presented in Supplementary Information D.

2.5. Empirical strategy

Empirical specification. We investigate how war victimisation affects preferences for in-group competition and egalitarianism. We focus on victimisation measures that capture both material costs and trauma: (i) whether one or one's family member was injured (engendering medical expenditures and loss of earning potential), and (b) whether the household's property was destroyed, as a result of the conflict. We consider in the Supplementary Information (hereafter SI) the effect of having a family member killed during the conflict (which may add to material injuries also emotional hurt and loss of kin support), and the results are consistent. The analysis compares individuals who suffered these types of victimisation to individuals that did not, using an Ordinary Least Square Regression, with our proxies for in-group competition and cooperation as the dependent variables. We verify in SI (see Tables A.3 and A.6) that our results are robust to using a non-linear estimation model but we choose to focus on OLS as our main specification due to issues arising from the estimation of interaction effects in non-linear models (see Ai and Norton 2003).

We focus on two axes of heterogeneity in our analysis: parental status and gender. To estimate whether the association between conflict and pro-social preferences differs across parental status and gender, we estimate models (1) and (2), which include an interaction term between victimisation and either female (1) or parental status (2) in the full sample; and we do so separately in the subsamples of parents and non-parents (for (1)) and in the subsamples of females and males (for (2)). We combine two-sample split analysis with two-way interaction to keep our results tractable (rather than four-sample split, or three-way interaction in the full sample, for a better interpretation of the results).

We estimate the two following equations:

$$Y_{ij} = \beta_0^1 + \beta_1^1 V_{ij} + \beta_2^1 F_{ij} + \beta_3^1 F_{ij} * V_{ij} + \beta_4^1 X_{ij} + \gamma_j^1 + \varepsilon_{ij}^1 \quad (1)$$

$$Y_{ij} = \beta_0^2 + \beta_1^2 V_{ij} + \beta_2^2 P_{ij} + \beta_3^2 P_{ij} * V_{ij} + \beta_4^2 X_{ij} + \gamma_j^2 + \varepsilon_{ij}^2 \quad (2)$$

Our outcome variables Y_{ij} proxy behavioural preferences (alternatively egalitarianism and competitiveness) of respondent i in village j; V_{ij} is a measure of individual victimisation, F_{ij} is a

dummy indicator for female respondents, P_{ij} indicates parental status, X_{ij} is a set of individual controls (age groups, gender, religious affiliation, number of children, and, for the competitiveness specifications also confidence, ability, and risk preferences – we explain the choice of these controls below), and γ_j is a set of village random effects. Standard errors are corrected for potential heteroskedasticity and for potential clustering at the village level. To adjust for the small number of clusters (14 clusters), we use the cluster bootstrap method based on 1,000 replications, as recommended by Cameron and Trivedi (2010). In the fixed effects model, reported in SI (see Tables A.2 and A.5), bootstrap p-values are estimated using the wild cluster bootstrap method based on 1,000 replications, as recommended by Cameron et al. (2008) and Cameron and Miller (2015). β_3^1 captures the differential effect of victimisation for females. β_3^2 captures the differential effect of victimisation for parents.

Causal identification. The identification of the causal effect of violence is impaired if victims are different from non-victims for specific reasons that are correlated with our outcomes of interest. In that case, any comparison of victims and non-victims may conflate the impacts of war with pre-existing differences that led some people to be victimised. We analyse to what extent such systematic selection into victimisation may have been the case in Table A.1. We present the estimation results of a regression of our indices of victimisation on a wide range of individual controls. We include individual controls that are pre-determined (e.g. gender, age) as well as controls that are more likely to be correlated with prosocial preferences, such as confidence, ability, and risk preferences. Inspection of Table A.1 reveals no evidence of systematic selection into victimisation. The only robust correlate of victimisation is age, with older people more likely to having been injured of having experienced destruction, a logical result since the conflict took place between 1991 and 2003. We also find that women are less likely to have been injured as a result of the conflict. No other characteristic is systematically associated with any kind of victimisation.

We control in all specifications for age and either gender or parental status (depending on the subsample). To further reduce the scope of a potential endogeneity bias, we include γ_j, a set of village random effects (alternatively village fixed effects as reported in SI Tables A.2 and A.5) to account for the local nature of the conflict. With these, identification of the causal effect of conflict requires victimisation to be -as good as- random within villages, conditionally on individual characteristics.

In addition, we control for other correlates of pro-social preferences and of our measure of competitivity in order to improve the precision of our estimates, specifically religious affiliation

(Muslim vs. Christian), number of children, as well as confidence, ability and risk preferences in the specifications for competitiveness.

3. Results

3.1 Egalitarianism

Conflict closes the parental gap in egalitarianism. Descriptive statistics showed that the main dividing line in predicting cooperation ran along parental status, with parents being a lot more egalitarian. The framework in Section 2 predicts that parents, in general, should be more attentive to in-group cooperation than non-parents, hence more egalitarian, but that conflict exposure should act especially on those group members that start less prosocial, i.e. non-parents, both male and female, who should become more egalitarian as a result. Our results show that indeed, parents are, in general, more egalitarian (36% vs. 26%, P-value: 0.05), and conflict closes the gap between parents and non-parents. Figure 1 (Panel A) shows unadjusted differences in egalitarianism between men and women, as a function of individual victimisation. We see no average effect of conflict injury, albeit a more visible one for destruction. Once we break down the samples across parents and non-parents in Panels B and C, it becomes clear that conflict increases egalitarianism, but only for non-parents (who are the least egalitarian to start with). Importantly, it does so for non-parent males more than females (as predicted by inter-group conflict theoretical framework), although our sample of non-parents is too small to estimate this difference precisely enough. For parents, we see no effect, either for mothers or fathers.

Table 2 confirms these results in a regression framework, controlling for individual characteristics and village random effects, as specified in (1) and (2). Columns (1) to (4) present the results for the full sample. We also present the results separately for our sample of parents (Columns 5 and 6), non-parents (Columns 7 and 8), females (Columns 9 and 10) and males (Columns 11 and 12). For mothers or fathers, we observe no change in egalitarianism as a result of victimisation. In contrast, non-parents who have experienced injury or destruction are much more egalitarian than non-victimised ones. The magnitude of the effect is large, with a 32 percentage point increase in egalitarianism as a result of injury (Column 7) and a 31 percentage point increase in egalitarianism as a result of destruction of property (Column 8). The results are moderately stronger for non-parent males, with a 24 percentage point increase in egalitarianism as a result of injury experience (Column 11) or 27 percentage points for destruction of property (Column 12) compared to non-parent females who show a 18 and a 20 percentage point increase in egalitarianism for the

respective measures of victimisation (Column 9 and Column 10). Parent males are found to be especially more egalitarian than non-parent males, and the interaction between parent and male display the strongest significance.

In robustness checks, we show that our results are robust when we include village fixed (instead of random) effects (Table A.2) or when we estimate non-linear models (Table A.3). Table B.1 in SI shows similarly that non-parent men and women become more egalitarian as a result of victimisation when the proxy for victimisation is *killed*, but the effects are not statistically significant. In Table A.4 we present the results of a horse race specification in which we control for *destruction* together with *injured*. The results show that the increase in egalitarianism among non-parents is being driven by injured, although the economic channel of destruction of property is a consistent predictor of higher egalitarianism (Column 4 and Column 6).

3.2 Competitiveness

Conflict closes the gender gap in parents. Figure 2 (Panel A) reports the uncontrolled differences in preferences for competition between men and women, as a function of individual victimisation. Panel B and C disaggregate the results for parents and non-parents. Overall, men are more competitive than women, but conflict reduces men's preferences for competition to a much greater extent than women's. Women who experience injury actually become *more* competitive. As a result, the gender gap in competition is drastically reduced, nearly closed, by the experience of conflict. Panel B and C show that all these results are driven exclusively by the sample of parents. For non-parents, we do not observe any gender gap in competitiveness, and victimisation lowers the desire to compete significantly for both.

Table 3 confirms these results in a regression framework, controlling for individual characteristics and village random effects, as specified in (1) and (2). Columns (1) to (4) presents the results for the full sample while Columns (5) and (6) present the results for our sample of parents. The coefficient associated with female is consistently negative and statistically significant, confirming the existence of a gender gap in competition. Destruction of property reduces competitiveness, but only for men. For women, victimisation, whether it consists of injury or destruction, *increases* competitiveness. As a result, the experience of victimisation closes the gender gap in competitiveness in this sample of parents. Controlling for village random effects and individual controls in Column (5), mothers who have not experienced injury are 10 percentage points less

likely than non-victimised fathers (the excluded category in our regression) to choose the competition tournament. However, mothers who have experienced injury are 16 percentage points more likely to do so when compared to non-victimised fathers, and 23 percentage points when compared to victimised fathers. For destruction (Column 6), the magnitude of the effects is even larger and more precisely estimated. While non-victimised mothers are 16 percentage points less likely than non-victimised males to choose the tournament, victimised mothers are 20 percentage points more likely than non-victimized fathers to do so, and 35 percentage points more likely than victimised fathers to choose the competition tournament.

For non-parents, we do not see any evidence of a gender gap in competition. Still, we observe that both genders decrease competitiveness if victimised. Victimisation is negatively associated with competitiveness, but now the effect is not statistically robust to all specifications, nor heterogenous across gender. We confirm these results for another measure of victimisation, whether these parents and non-parents had a household member killed during the conflict in Table B.2. While still significant the magnitude is not as large as it is for *destruction*. We also confirm that that our results are robust when we include village fixed (instead of random) effects (Table A.5) or when we estimate non-linear models (Table A.6). In a horse race specification in which we control for both proxies of victimisation together (Table A.7), the results show that the increase in competitive preferences among victimised mothers is being primarily driven by destruction of property (Column 3).

Potential Mechanisms. We further examine various mechanisms that may explain the relative increase in competitiveness in mothers as a result of conflict. The results from the horse race specification discussed above suggest that behavioural changes experienced as a result of victimisation primarily come from increased material stresses. We would then also expect the changes to be more pronounced in mothers who need to compete most for scarce resources, such as single, widowed, or divorced mothers; those who have more children; or those who have younger children. We test for these mechanisms using the sub-sample of parents and victimisation through material destruction in Table 4. We estimate equation (1) for different subsamples, defined by marital status, number of children (more or less than the village average), and average age of children. The results show that the effect of destruction in increasing the relative competitiveness of mothers is more statistically robust and much larger in magnitude for single, widowed, or divorced mothers (Column 1) as opposed to partnered mothers (Column 2); for women with many (Column 3) as opposed to fewer (Column 4) children; and for women with children below 10 years of age (Column 5) as opposed to older children (Column 6). In particular, the effect of conflict on

competitiveness is more than two and a half times as large for single, widowed, or divorced mothers compared to their partnered counterparts. Mothers who have been hit economically by the conflict and who have to rely on only themselves, who have to take care of many children, or younger children that require more resources, are no less competitive than men. This result is consistent with our theoretical predictions rooting women's competitive preferences in the parental investment framework. These results are robust to the inclusion of village fixed effects (Table A.8).

External Validity – Parents in Colombia. We investigate the external validity of our results using a representative sample of parents of 9th graders in poor schools of Medellin, Colombia. The same experimental game was played with 191 parents (118 mothers vs 73 fathers) to test whether victimisation increases competitive preferences among mothers. Our measure of victimisation for Colombia is displaced (*Displaced* is a dummy variable equal to one if the respondent or any member of the respondent's household was forcibly displaced by the FARC during the Colombian civil conflict), a type of victimisation which also imposes large material costs and reflects an increase in scarcity of material resources. The unadjusted means reported in Table A.9 and Figure 3 show that mothers are on average less competitive than fathers, althought not in a significant manner (38% vs 50%, P-value: 0.22), but that forced displacement during the conflict increases their competitive preferences and closes this gender gap in preferences.

Table 5 confirms these results in a regression framework controlling for individual characteristics. The results for the full sample show no effect of conflict victimisation on competitive preferences (Column 1). However, when we break down the sample across mothers (Column 2) and fathers (Column 3) we see that while there is no change in preferences for fathers, victimised mothers are 20 percentage points more likely to choose the competition tournament than non-victimised mothers. These results from a different conflict and country lend further support to our findings described above that resource constraints reduce the scope for gender specific preferences. They also provide external validity to our argument that the evolutionary theory of conflict needs to be augmented with the cooperative breeding framework to fully understand the heterogenous changes in behaviours witnessed in the aftermath of conflicts.

3.3 Competition versus Cooperation

We have so far discussed in-group competition and in-group cooperation separately. To reconcile our findings and paint a richer picture of the effect of conflict on in-group social preferences, it is

useful to study how in-group competition and cooperation interact, and in particular whether one comes at the expense of the other. To study this, we correlate our measure of egalitarianism on our measure of competition in a regression framework and report the results in Table A.10. We include the usual controls and village random or fixed effects.

The raw correlation between in-group competition and cooperation is negative (Columns 1 and 2), suggesting that competition usually comes at the expense of cooperation (although it is not statistically significant). However, when we inspect how this correlation differs by parental status in Columns (7) and (8), we find that competition comes at the expense of cooperation only for those who do not have children. For parents, there is no such trade-off. In Table A.11, we include interaction terms between, on the one hand, measures of competitiveness and, on the other hand, parental status or age (defined by the terciles of the age distribution). The coefficient associated with the interaction with parental status is positive and statistically significant, while the coefficient associated with the interaction with age is not. This confirm that the suppression of the trade-off between competition and cooperation is really driven by parental status, as opposed to age.

3.4 Potential limitations

Our study is subject to potential limitations, which we now discuss.

Functional form. We check in SI Tables A.3 and A.6 that our main results are robust to using a nonlinear estimation method.

Survival bias. The main threat to internal validity, as we have already discussed consists of the non-randomness in victimisation. Even if we do not observe systematic selection among survivors (see Table A.1 and related discussion), we nevertheless only observe survivors and survivors themselves could be a selected group. It could be the case that conflict does not affect preferences, but that only a selected group of people with given preferences survived the conflict. For example, it could be the case that men who were particularly competitive were all killed in the conflict, leaving as survivors men with weaker preferences for competition. However, systematic survival bias on the basis of social preferences is hard to reconcile with the contrasting effects of conflict along both gender and parental status lines that we document in this paper, suggesting that survivor bias is unlikely to drive our results.

Payments only to senders. To address the concerns of the enumerators about potentially generating tensions among neighbors, we modified the protocol and incentivized only the sender's portion of the allocation. This could have biased our results against us finding any costly egalitarianism, although this bias should have affected everyone similarly and not selectively by sex or parental status. Nevertheless, our participants significantly chose the egalitarian distributions of the resources (53.1% choose it in the costly sharing game and 50.6% choose it in the costly envy game) displaying deeply seated norms of cooperative behaviour.

4. Discussion

Our study, using the quasi-natural experimental variation in material and relational scarcity brought about by conflict, supports the general idea that exposure to conflict strengthens prosociality (*H1*). Importantly, it contributes to the literature the idea that both sex (*H2, H5*) and parental status matter since not everyone starts equally invested in the group and/or can sacrifice as much for the group. Parents start significantly more egalitarian than non-parents (*H3*), yet it is non-parents that react the most to conflict cues (*H4*). Mothers are the least competitive in the group (*H6*), yet, while all others reduce their competitiveness with conflict exposure, mothers increase it (*H7*). Our results suggest that the evolutionary theories based on intergroup conflict, which have been the sole framework of the pre-existing studies of conflict, cannot, on their own, fully explain the variegated effects of conflict exposure on social preferences. We suggest, instead, that the inclusion of the cooperative breeding framework could contribute to shed light on the complexity of the effects of conflict on prosocial preferences and how they depend on both sex and parental status.

We find that conflict's prosocial effects towards the in-group, which have been the focus of almost all the previous literature of conflict, are, in fact, only driven by non-parents, who are, furthermore, the group that is otherwise the least cooperative. Mothers and father do not show a reaction to conflict cues yet maintain the highest levels of egalitarianism. Our interpretation is that the needs of group survival exacerbated by conflict---and/or the opportunity that a recognized contribution to group interests may afford the individual increased reproductive opportunities---induce people to become more cooperative towards the in-group, and that this effect is binding for those who may not be necessarily inclined to do so otherwise and, by not having offspring, may sacrifice some individual interest for the benefit of others. We find that this effect is present for both sexes but slightly stronger for non-parent males, perhaps because group survival may depend not only on their willingness to share resources, as it does for women and as predicted by cooperative breeding,

but also on their willingness to fight for their group, as predicted by evolutionary theory of inter-group conflict and those that take into account the individual fitness gains of achieving high status (male coalition psychology, male warrior and display of solidarity hypotheses).

We also find that the in-group competitive tendencies of non-parents are curbed as a result of victimisation. We observe a similar effect among fathers. Given that competition comes at the expense of cooperation for them, the reduction in in-group competitiveness may be necessary both to guarantee sharing of resources within the group and to strengthen the in-group's position in inter-group conflict. By contrast, mothers, and especially those who are likely to struggle most economically, become more competitive as a result of conflict exposure. Yet, conflict exposure does not significantly alter mothers' prosociality, who stays roughly constant across victimisation exposure, and always higher than non-mothers: economically constrained mothers have to fight particularly hard for their offspring, and for them, this kin survival constraint may dominate group survival constraints when it comes to competing. As the previous theories would suggest, being a mother is, in fact, the life stage/sex more torn between the interests of the group and those of the individual and her offspring.

Through these contrasting effects, conflict closes the competition gap across genders, and closes the cooperation gap across parental status, thereby leading to much more homogenous behaviour across the subgroups. To the extent that group harmony may be enhanced by the lowering of within-group differences in competitiveness and cooperation, these results further lend credence to the idea that the behavioural effects of conflict contribute to prime individuals towards group survival. Yet, a fine-grained look at reactions via sex and parental status reveals a more complex tradeoff between group vs. individual interests and that not everyone react in a similar manner. Non-parents start as the least prosocial towards the group but they are the ones reacting more strongly, especially the males. Parents start are more invested in the group, yet they react very little to victimisation, with mothers even increasing their competitiveness when experiencing adversity. This sets of results paints a rich picture of the interdependencies of life in a group, where selection is likely to operate contemporaneously at different levels.

We conclude with a final remark on the interplay of the transmission of cultural norms and the evolution of cooperative breeding in humans. While the majority of societies have enforced divisions of labor on the basis on sex, the variability observed across them suggests that such divisions are not deterministically dictated by evolved sex differences in strategies but could be the result of the interaction of the latter with culturally transmitted norms that at some point were thought to benefit the group (see Alesina et al. 2013; Wood and Eagly 2012; von Rueden et al.

2018). The increased competitiveness that we find among mothers may, in fact, reflect this interaction of adapted strategies with culturally transmitted norms regarding expectations about differential parental provision. In our sampled population, mothers do provide the majority of childcare and contribute significantly to the provision of food, water and household items (see Appendix C). Under greater economic constraints, we could foresee a split between maternal strategies evolved by selection---where adversity could actually induce women to lower maternal investment and postpone it to times more conducive to reproductive success (e.g. Hagen 2003; Hrdy 1999)---and cultural norms that would more rigidly prescribe a sustained maternal investment---to increase the size of the group (a variable repeatedly found critical to determine the success of a group). We could speculate that our result, that mothers become more competitive rather than more egalitarian as a reaction to increased adversity, may speak to this greater adherence to cultural norms, although more data would be necessary to properly test this assertion.

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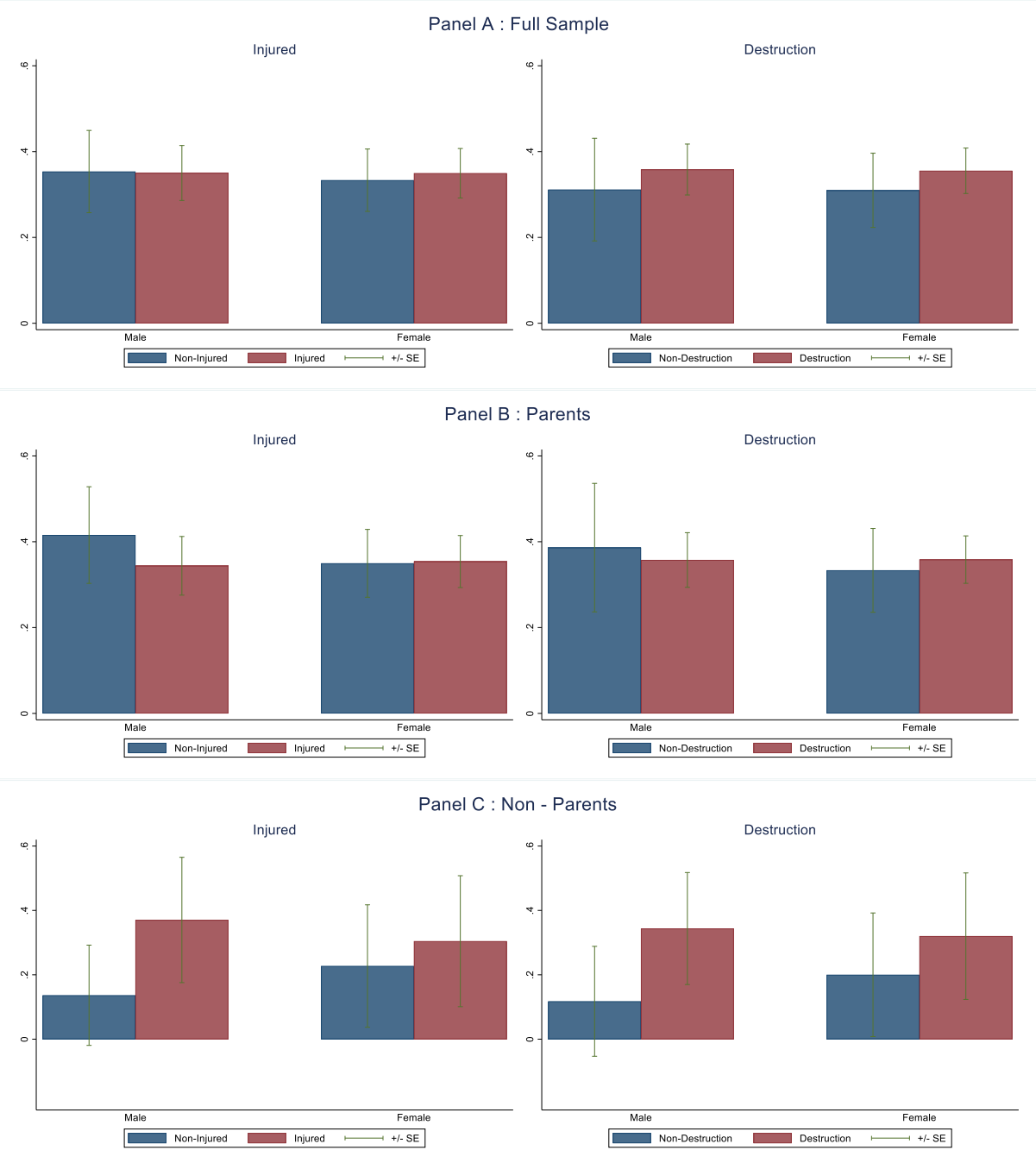
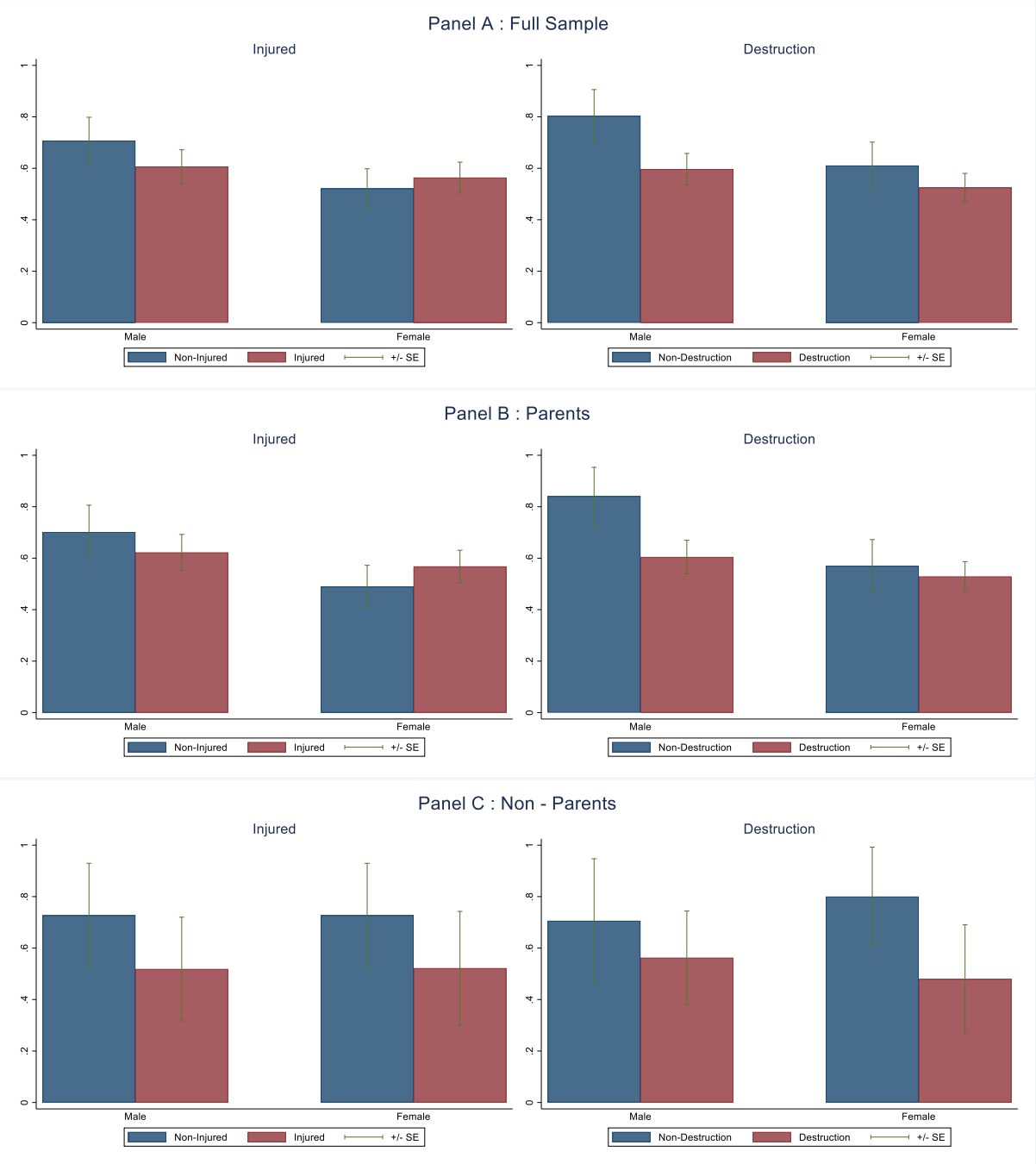
Figures

Figure 1: Mean egalitarian preferences by gender and parental status



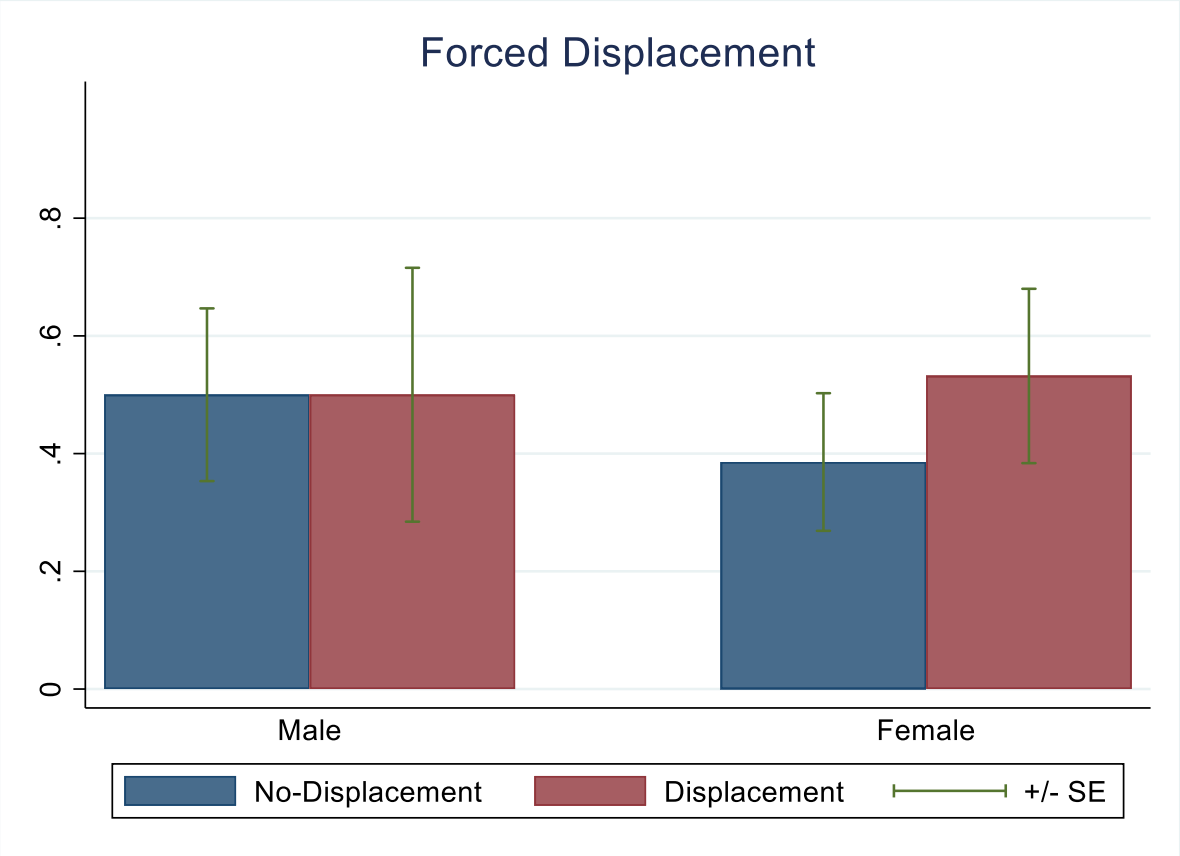
Note: The graphs illustrate the unadjusted differences in egalitarianism between men and women as a function of individual victimisation. *Egalitarian* is an indicator variable equal to 1 if the respondent chooses the costly sharing and the costly envy option in the cooperation games. *Injured* is a dummy variable equal to one if the respondent or any member of the respondent's household was injured during the conflict while *Destruction* is a dummy variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Panel A shows that there is no gender gap or change in egalitarian preferences as a result of victimisation. Panel B and C disaggregate these preferences by Parents and Non-Parents to show that victimisation increases egalitarianism in non-parents to close the gap with parents. This increase in egalitarian preferences is higher for non-parent males than females. There is no change in egalitarian preferences as a result of victimisation for parents, either mothers or fathers.

Figure 2: Mean competitive preferences by gender and parental status



Note: The graphs illustrate the unadjusted differences in the mean choice to compete between men and women for measures of individual victimisation. *Competitiveness* is an indicator variable equal to one if the respondent chooses the tournament in the competitiveness game. *Injured* is a dummy variable equal to one if the respondent or any member of the respondent's household was injured during the conflict while *Destruction* is a dummy variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Panel A shows that men are more competitive than women overall and that victimisation reduces this gender gap in preferences. Panel B and C show that the gender gap in competitive preferences is driven almost entirely by parents. Non-parents do not exhibit any gender gap in competitive preferences regardless of victimisation status. Everyone tames competitiveness, with the exception of mothers.

Figure 3: Mean competitive preferences - Colombia



Note: The graphs illustrate the unadjusted differences in the mean choice to compete between men and women for measures of individual victimisation for a sample of parents only. *Competitiveness* is an indicator variable equal to one if the respondent chooses the tournament in the competitiveness game. *Displaced* is a dummy variable equal to one if the respondent or any member of the respondent's household was forcibly displaced during the conflict. The graph reports similar results as from Sierra Leone, indicating that fathers are more competitive than mothers and that victimisation reduces this gender gap in competitive preferences.

Tables

Table 1: Descriptive statistics

	Full sample					Female					Male				
Variable	obs	mean	s.d	min	max	obs	mean	s.d	min	max	obs	mean	s.d	min	max
Panel A: Parents															
Egalitarian	653	0.36	0.48	0	1	387	0.35	0.48	0	1	266	0.36	0.48	0	1
Competitiveness	652	0.58	0.49	0	1	387	0.54	0.50	0	1	265	0.65	0.48	0	1
Injured	652	0.66	0.47	0	1	386	0.63	0.48	0	1	266	0.71	0.45	0	1
Destruction	651	0.79	0.41	0	1	386	0.76	0.43	0	1	265	0.83	0.37	0	1
Killed	650	0.60	0.49	0	1	386	0.58	0.49	0	1	264	0.63	0.48	0	1
Middle Age	653	0.35	0.48	0	1	387	0.37	0.48	0	1	266	0.33	0.47	0	1
Old	653	0.36	0.48	0	1	387	0.23	0.23	0	1	266	0.56	0.50	0	1
Muslim	653	0.13	0.33	0	1	387	0.12	0.32	0	1	266	0.14	0.35	0	1
# Children	653	3.69	2.39	1	18	387	3.21	1.76	1	10	266	4.39	2.96	1	18
Risk	653	3.18	1.85	1	6	387	3.11	1.86	1	6	265	3.28	1.85	1	6
Ability	652	5.36	2.83	0	9	387	4.79	2.94	0	9	265	6.18	2.45	0	9
Confidence	652	2.11	2.42	-6	9	387	1.84	2.39	-6	9	265	2.50	2.42	-5	9
Panel B: Non-Parents															
Egalitarian	98	0.26	0.44	0	1	47	0.26	0.44	0	1	51	0.25	0.44	0	1
Competitiveness	98	0.60	0.49	0	1	47	0.60	0.50	0	1	51	0.61	0.49	0	1
Injured	94	0.53	0.50	0	1	45	0.51	0.51	0	1	49	0.55	0.50	0	1
Destruction	94	0.61	0.49	0	1	45	0.56	0.50	0	1	49	0.65	0.48	0	1
Killed	94	0.47	0.50	0	1	45	0.47	0.50	0	1	49	0.47	0.50	0	1
Middle Age	98	0.07	0.26	0	1	47	0.06	0.25	0	1	51	0.08	0.27	0	1
Old	98	0.04	0.20	0	1	47	0.09	0.28	0	1	51	0.00	0.00	0	0
Muslim	98	0.19	0.40	0	1	47	0.19	0.40	0	1	51	0.20	0.40	0	1
Risk	98	3.59	1.80	1	6	47	3.40	1.90	1	6	51	3.76	1.72	1	6
Ability	98	5.96	2.30	0	9	47	5.38	2.55	0	9	51	6.49	1.91	0	9
Confidence	98	2.73	2.05	-3	9	47	2.38	1.97	-3	7	51	3.06	2.09	-1	9

Table 2: Effect of victimisation on egalitarian preferences

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Dependant variable: *Egalitarian*											
Sample	Full				Parents		Non-Parents		Females		Males	
Measure of Victimisation	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.
Female	-0.01	0.00			-0.06	-0.06	0.13	0.13				
	(0.07)	(0.08)			(0.09)	(0.11)	(0.09)	(0.08)				
	[0.91]	[0.99]			[0.53]	[0.60]	[0.28]	[0.18]				
Victimisation	0.04	0.06	0.22***	0.21***	-0.03	-0.02	0.32***	0.31***	0.18*	0.20**	0.24***	0.26***
	(0.05)	(0.07)	(0.06)	(0.07)	(0.06)	(0.09)	(0.03)	(0.04)	(0.11)	(0.10)	(0.05)	(0.05)
	[0.61]	[0.42]	[0.01]	[0.04]	[0.74]	[0.86]	[0.00]	[0.00]	[0.23]	[0.15]	[0.00]	[0.00]
Female * Victimisation	0.02	0.01			0.07	0.07	-0.14	-0.10				
	(0.08)	(0.07)			(0.09)	(0.10)	(0.14)	(0.15)				
	[0.77]	[0.93]			[0.40]	[0.51]	[0.35]	[0.49]				
Parent			0.17***	0.19***					0.14	0.16**	0.30***	0.33***
			(0.05)	(0.04)					(0.10)	(0.07)	(0.09)	(0.10)
			[0.04]	[0.01]					[0.26]	[0.08]	[0.00]	[0.00]
Parent * Victimisation			-0.19***	-0.19***					-0.10	-0.13*	-0.33***	-0.31***
			(0.07)	(0.04)					(0.10)	(0.07)	(0.07)	(0.09)
			[0.03]	[0.01]					[0.45]	[0.21]	[0.00]	[0.00]
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of clusters	14	14	14	14	14	14	12	12	14	14	14	14
Observations	746	745	746	745	652	651	94	94	431	431	315	314
R-squared	0.01	0.01	0.01	0.02	0.01	0.01	0.04	0.04	0.00	0.01	0.04	0.04

Notes: Robust standard errors are presented in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. Standard errors are corrected for potential heteroskedasticity and for potential clustering at the village level using the cluster bootstrap method based on 1,000 replications. Bootstrap P-values are shown in parenthesis below robust standard errors. All specifications include random effects at the village level. *Egalitarian* is an indicator variable equal to 1 if the respondent chooses the costly sharing and the costly envy option in the cooperation game. *Injured (Inj.)* is a dummy variable equal to one if the respondent or any member of the respondent's household was injured during the conflict while *Destruction (Des.)* is a dummy variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian), number of children. Age is by terciles of age distribution: young (18-28), middle age (29-39), and old (above 40).

Table 3: Effect of victimisation on competitive preferences

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Dependant variable: *Competitiveness*											
Sample	Full				Parents		Non-Parents		Females		Males	
Measure of Victimisation	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.
Female	-0.08*	-0.09*			-0.10*	-0.16**	0.10	0.17				
	(0.04)	(0.05)			(0.05)	(0.06)	(0.10)	(0.10)				
	[0.04]	[0.09]			[0.08]	[0.02]	[0.42]	[0.18]				
Victimisation	-0.08*	-0.11**	-0.14***	-0.09**	-0.07	-0.15***	-0.19*	-0.09	-0.11*	-0.18**	-0.17**	-0.08
	(0.05)	(0.04)	(0.05)	(0.04)	(0.04)	(0.06)	(0.11)	(0.08)	(0.07)	(0.08)	(0.09)	(0.08)
	[0.17]	[0.09]	[0.12]	[0.25]	[0.23]	[0.04]	[0.15]	[0.39]	[0.28]	[0.09]	[0.17]	[0.46]
Female * Victimisation	0.14***	0.13**			0.16**	0.20***	0.05	-0.08				
	(0.05)	(0.06)			(0.06)	(0.07)	(0.13)	(0.13)				
	[0.02]	[0.03]			[0.03]	[0.01]	[0.77]	[0.55]				
Parent			-0.06	-0.02					-0.08	-0.10	-0.04	0.06
			(0.06)	(0.06)					(0.10)	(0.08)	(0.08)	(0.14)
			[0.51]	[0.83]					[0.46]	[0.22]	[0.77]	[0.71]
Parent * Victimisation			0.17***	0.09					0.21*	0.22**	0.07	-0.13
			(0.06)	(0.06)					(0.11)	(0.09)	(0.07)	(0.09)
			[0.03]	[0.24]					[0.08]	[0.03]	[0.54]	[0.27]
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of clusters	14	14	14	14	14	14	12	12	14	14	14	14
Observations	745	744	745	744	651	650	94	94	431	431	314	313
R-squared	0.20	0.21	0.20	0.20	0.21	0.21	0.22	0.21	0.25	0.25	0.15	0.17

Notes: Robust standard errors are presented in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. Standard errors are corrected for potential heteroskedasticity and for potential clustering at the village level using the cluster bootstrap method based on 1,000 replications. Bootstrap P-values are shown in parenthesis below robust standard errors. All specifications include random effects at the village level. *Competitiveness* is an indicator variable equal to 1 if the respondent chooses the tournament in the competitiveness game. *Injured (Inj.)* is a dummy variable equal to one if the respondent or any member of the respondent's household was injured during the conflict while *Destruction (Des.)* is a dummy variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian), number of children, risk, ability, and confidence scores. Age is by terciles of age distribution: young (18-28), middle age (29-39), and old (above 40).

Table 4: Mechanisms through which victimisation affects competitiveness

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependant variable: *Competitiveness*					
Sample:	Single, widowed or divorced	Partnered	Many children	Few children	Young children	Older children
Female	-0.34**	-0.11	-0.22***	-0.12	-0.26***	-0.04
	(0.15)	(0.07)	(0.08)	(0.08)	(0.09)	(0.07)
	[0.03]	[0.22]	[0.01]	[0.16]	[0.04]	[0.62]
Destruction	-0.43***	-0.11*	-0.20**	-0.13*	-0.23***	-0.06
	(0.10)	(0.06)	(0.08)	(0.07)	(0.07)	(0.08)
	[0.00]	[0.22]	[0.02]	[0.22]	[0.02]	[0.57]
Female * Destruction	0.48***	0.15**	0.25***	0.18**	0.26**	0.09
	(0.16)	(0.07)	(0.09)	(0.08)	(0.11)	(0.09)
	[0.01]	[0.10]	[0.02]	[0.04]	[0.04]	[0.33]
Individual controls	Y	Y	Y	Y	Y	Y
Number of clusters	14	14	14	14	14	14
Observations	124	521	324	326	255	395
R-squared	0.22	0.22	0.23	0.22	0.25	0.20

Notes: Robust standard errors are presented in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. Standard errors are corrected for potential heteroskedasticity and for potential clustering at the village level using the cluster bootstrap method based on 1,000 replications. Bootstrap P-values are shown in parenthesis below robust standard errors. All specifications include random effects at the village level. *Competitiveness* is an indicator variable equal to 1 if the respondent chooses the tournament in the competitiveness game. *Injured (Inj.)* is a dummy variable equal to one if the respondent or any member of the respondent's household was injured during the conflict while *Destruction (Des.)* is a dummy variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian), number of children, risk, ability, and confidence scores. Age is by terciles of age distribution: young (18-28), middle age (29-39), and old (above 40). *Single, widowed or divorced* considers only parents who are either single, divorced or have been widowed, while *Partnered* considers only parents currently with partner. *Many Children* considers only parents with more children than the village average, while *Few Children* are those with same number of children as village average or fewer. *Young children* are those whose children are 10 years old or under on average. *Older children* are those whose children are over 10 years old on average.

Table 5: Effect of victimisation on competitive preferences – Parents in Colombia

	(1)	(2)	(3)
	Dependant variable: *Competitiveness*		
Sample:	Full	Mothers	Fathers
Female	-0.03		
	(0.11)		
Displaced	0.05	0.20*	0.08
	(0.14)	(0.11)	(0.15)
Female * Displaced	0.16		
	(0.17)		
Individual controls	Y	Y	Y
Observations	167	107	60
R-squared	0.05	0.05	0.14

Notes: Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. *Competitiveness* is an indicator variable equal to 1 if the respondent chooses the tournament in the competitiveness game. *Displaced* is a dummy variable equal to one if the respondent or any member of the respondent's household was forcibly displaced during the conflict. Individual controls include the respondents' age, gender, number of children as well as risk, ability, and confidence scores. Age is by terciles of age distribution: young (18-28), middle age (29-39), and old (above 40).

Mothers, Fathers, and Others: Competition and Cooperation in the Aftermath of Conflict

Supplementary Information

Alessandra Cassar, Pauline Grosjean, Fatima Jamal Khan, and Miranda Lambert*

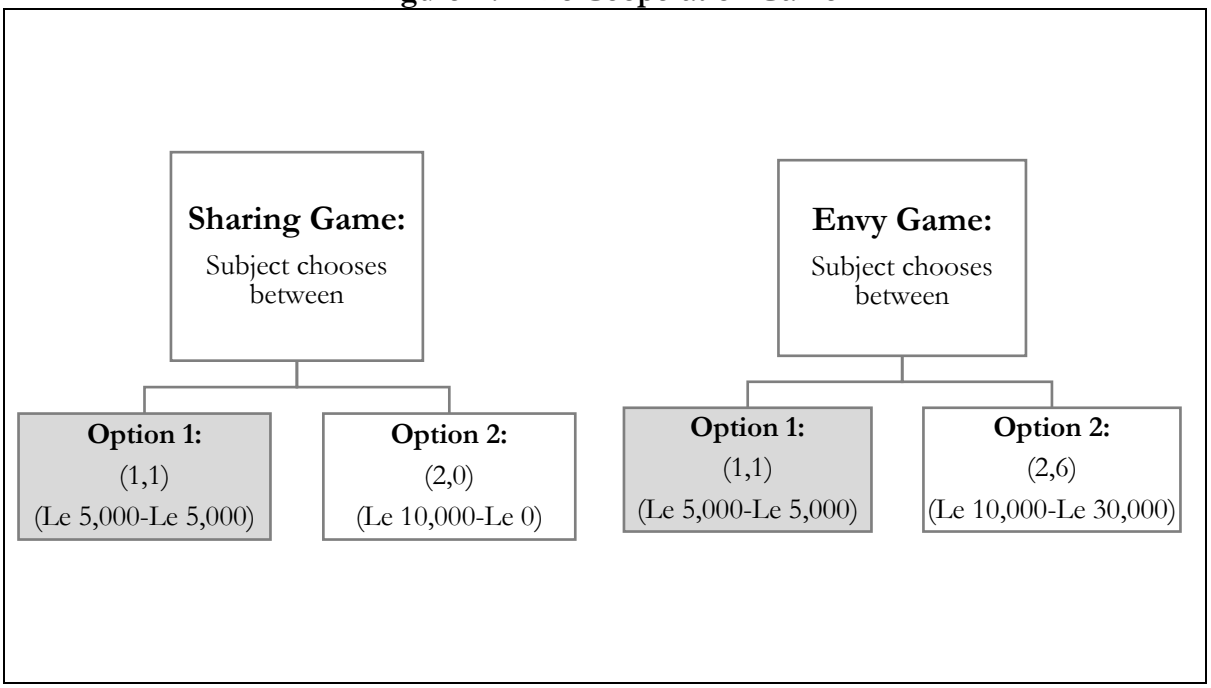
6 October 2021

Contents:

* Cassar: University of San Francisco, Department of Economics (email: acassar@usfca.edu). Grosjean and Khan: UNSW, School of Economics (emails: p.grosjean@unsw.edu.au, fatimajamal.khan@unsw.edu.au). Lambert: Texas A&M (email: miranda.lambert@tamu.edu. Cassar acknowledges financial support from the University of San Francisco, help on the ground from BRAC, and outstanding research assistance in the field from Bethany Gerdemann. Grosjean gratefully acknowledges financial support from Australian Research Council FT 190100298. This study received IRB approval from USF (IRB: 1029) and from UNSW (HC191036). The findings and views reported in this paper are the authors' and should not be attributed to the institutions the authors are affiliated with.

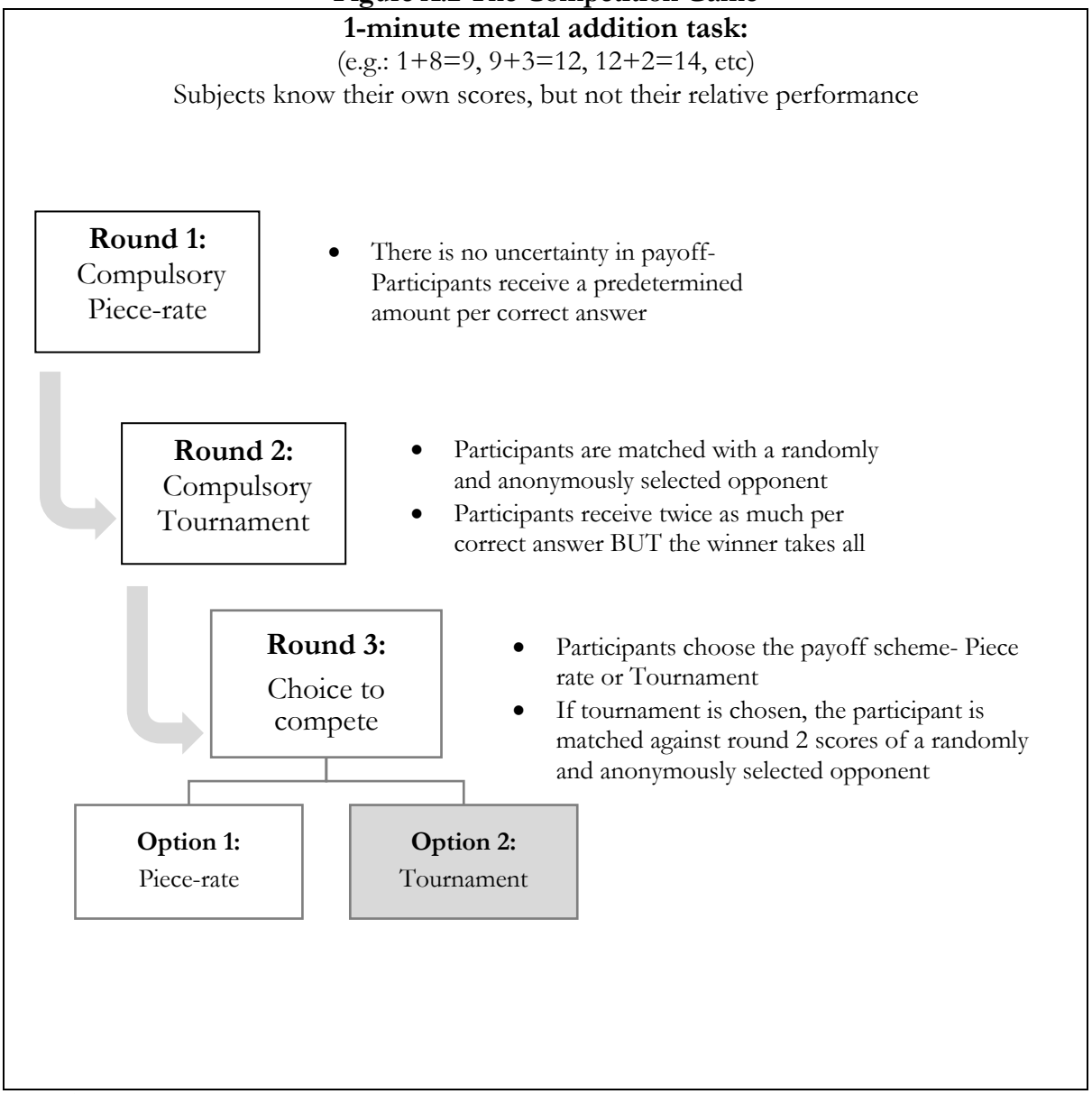
Supplementary Information A: Additional Figures and Results

Figure A.1 The Cooperation Game



Notes: In the sharing game the participant can choose between Option 1 (keep Le 5,000 for self and send Le 5.000 to the other person; the costly sharing option) and Option 2 (keep Le 10,000 for self and send Le 0 to the other person). In the envy game the participant can choose between Option 1 (keep Le 5,000 for self and send Le 5,000 to the other person; the costly envy option) and Option 2 (keep Le 10,000 for self and send Le 30,000 to the other person). Measure of cooperation: *Egalitarian* is equal to 1 if the participant chooses Option 1 in the sharing game and Option 1 in the Envy game and 0 otherwise.

Figure A.2 The Competition Game



Notes: The competition game is based on an oral version of the standard experimental protocol for eliciting competitive preferences. *Competitive* is equal to 1 if the participant chooses to compete in tournament against the past performance of a randomly and anonymously selected opponent from the same village in Round 3 and 0 otherwise.

Table A.1 Predictors of War Exposure

	(1)	(2)	(3)	(4)	(5)	(5)
	Dependant variable: *Injured*		Dependant variable: *Destruction*		Dependant variable: *Killed*	
Female	-0.07*	-0.07**	-0.03	-0.03	-0.04	-0.04
	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.04)
	[0.03]	[0.06]	[0.34]	[0.31]	[0.36]	[0.42]
Middle aged	0.05	0.05	0.06*	0.06*	-0.04	-0.04
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
	[0.39]	[0.52]	[0.25]	[0.33]	[0.63]	[0.78]
Old aged	0.09*	0.09*	0.16***	0.16***	0.03	0.02
	(0.05)	(0.05)	(0.04)	(0.04)	(0.05)	(0.05)
	[0.34]	[0.43]	[0.01]	[0.04]	[0.77]	[0.83]
Muslim	-0.03	-0.03	0.06	0.06	-0.06	-0.05
	(0.05)	(0.05)	(0.04)	(0.04)	(0.05)	(0.05)
	[0.62]	[0.51]	[0.18]	[0.38]	[0.30]	[0.12]
Parent	0.07	0.07	0.05	0.05	0.07	0.07
	(0.06)	(0.06)	(0.05)	(0.06)	(0.06)	(0.06)
	[0.38]	[0.27]	[0.39]	[0.32]	[0.36]	[0.29]
# Children	0.01	0.01	0.01	0.01	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	[0.57]	[0.41]	[0.25]	[0.28]	[0.79]	[0.78]
Risk	0.00	0.00	0.01	0.01	-0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	[0.89]	[0.90]	[0.40]	[0.43]	[0.97]	[0.94]
Ability	-0.01	-0.01	0.00	0.00	0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	[0.59]	[0.13]	[0.86]	[0.84]	[0.62]	[0.29]
Confidence	0.01	0.01	-0.01	-0.01	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
	[0.67]	[0.19]	[0.35]	[0.25]	[0.59]	[0.57]
Village effects	Random	Fixed	Random	Fixed	Random	Fixed
Number of clusters	14	14	14	14	14	14
Observations	745	745	744	744	743	743
R-squared	0.03	0.26	0.08	0.24	0.03	0.24

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. Standard errors are corrected for potential heteroskedasticity and for potential clustering at the village level using the cluster bootstrap method based on 1,000 replications. The bootstrap P-values are given in parenthesis below the robust standard errors. All specifications include random or fixed effects at the village level as indicated. *Injured (Inj.)* is an indicator variable equal to one if the respondent or any member of the respondent's household was injured during the conflict. *Destruction (Des.)* is an indicator variable equal to 1 if the respondent reports any loss of property as a result of the conflict. *Killed* is an indicator variable equal to one if any member of the respondent's household was killed during the conflict.

Table A.2: Effect of victimisation on egalitarian preferences - Table 2 using a fixed effects model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Dependant variable: *Egalitarian*											
Sample	Full				Parents		Non-Parents		Females		Males	
Measure of Victimisation	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.
Female	-0.01	-0.00			-0.06	-0.06	0.09	0.13				
	(0.06)	(0.07)			(0.07)	(0.09)	(0.12)	(0.12)				
	[0.88]	[0.95]			[0.61]	[0.60]	[0.39]	[0.25]				
Victimisation	0.05	0.07	0.23***	0.23***	-0.01	-0.01	0.33**	0.34**	0.21*	0.23*	0.29**	0.32***
	(0.06)	(0.07)	(0.09)	(0.09)	(0.07)	(0.08)	(0.15)	(0.14)	(0.12)	(0.12)	(0.12)	(0.12)
	[0.32]	[0.40]	[0.00]	[0.00]	[0.89]	[0.94]	[0.00]	[0.00]	[0.08]	[0.03]	[0.00]	[0.00]
Female * Victimisation	0.01	0.00			0.07	0.07	-0.10	-0.13				
	(0.07)	(0.08)			(0.08)	(0.09)	(0.18)	(0.19)				
	[0.83]	[0.97]			[0.57]	[0.51]	[0.68]	[0.46]				
Parent			0.15**	0.16**					0.13	0.16	0.29**	0.34**
			(0.07)	(0.08)					(0.11)	(0.10)	(0.12)	(0.13)
			[0.00]	[0.00]					[0.15]	[0.01]	[0.00]	[0.00]
Parent * Victimisation			-0.19**	-0.19**					-0.11	-0.15	-0.38***	-0.41***
			(0.09)	(0.09)					(0.13)	(0.13)	(0.14)	(0.14)
			[0.00]	[0.00]					[0.27]	[0.04]	[0.00]	[0.00]
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of clusters	14	14	14	14	14	14	12	12	14	14	14	14
Observations	746	745	746	745	652	651	94	94	431	431	315	314
R-squared	0.18	0.18	0.18	0.19	0.18	0.19	0.27	0.27	0.25	0.25	0.16	0.16

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. As a robustness check, models from Table 2 are estimated with village fixed effects. All specifications include fixed effects at the village level. *Egalitarian* is an indicator variable equal to 1 if the respondent chooses the costly sharing and the costly envy option in the dictator game while playing with someone from the same village indicating their preference for egalitarianism. *Injured (Inj.)* is an indicator variable equal to one if the respondent or any member of the respondent's household was injured during the conflict. *Destruction (Des.)* is an indicator variable equal to 1 if the respondent reports any loss of property as a result of the conflict. . Individual controls include the respondents' age, gender, religious affiliation (Muslim vs Christian), number of children as well as risk, ability, and confidence scores. Age is captured by terciles of age distribution: young (18, our youngest respondent, to 28), middle age (29-39), and old (above 40).

Table A.3: Effect of victimisation on egalitarian preferences - Table 2 using a Logit model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Dependant variable: *Egalitarian*											
Sample	Full				Parents		Non-Parents		Females		Males	
Measure of Victimisation	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.
Female	-0.07		-0.28	0.84			-0.02		-0.31	0.87		
	(0.36)		(0.41)	(0.76)			(0.40)		(0.54)	(0.76)		
Victimisation	0.23	1.29***	-0.11	1.72***	1.24*	1.64***	0.35	1.36***	-0.06	1.77***	1.37**	1.85***
	(0.26)	(0.34)	(0.29)	(0.46)	(0.64)	(0.46)	(0.38)	(0.36)	(0.44)	(0.34)	(0.59)	(0.41)
Female * Victimisation	0.10		0.36	-0.93			0.03		0.34	-0.66		
	(0.38)		(0.41)	(0.98)			(0.35)		(0.49)	(1.00)		
Parent		0.92***			0.87	1.69***		1.04***			1.00**	2.03***
		(0.30)			(0.56)	(0.55)		(0.27)			(0.42)	(0.66)
Parent * Victimisation		-1.13***			-0.74	-2.04***		-1.16***			-0.93*	-2.22***
		(0.38)			(0.59)	(0.51)		(0.38)			(0.49)	(0.70)
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of clusters	14	14	14	12	14	14	14	14	14	12	14	14
Observations	746	746	652	94	431	315	745	745	651	94	431	314

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. As a robustness check, models from Table 2 are estimated using a logit model. All specifications include random effects at the village level. *Egalitarian* is an indicator variable equal to 1 if the respondent chooses the costly sharing and the costly envy option in the dictator game while playing with someone from the same village indicating their preference for egalitarianism. *Injured (Inj.)* is an indicator variable equal to one if the respondent or any member of the respondent's household was injured during the conflict. *Destruction (Des.)* is an indicator variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Individual controls include the respondents' age, gender, religious affiliation (Muslim vs Christian) and number of children. Age is by terciles of age distribution: young (18- 28), middle age (29-39), and old (above 40).

Table A.4: Effect of victimisation on egalitarian preferences - Table 2 'Horse Race' Specifications

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependant variable: *Egalitarian*					
Sample	Full		Parents	Non-Parents	Females	Males
Female	-0.00		-0.07	0.14*		
	(0.08)		(0.11)	(0.08)		
	[0.99]		[0.54]	[0.19]		
Injured	-0.00	0.07	-0.04	0.21**	-0.01	0.15
	(0.08)	(0.14)	(0.09)	(0.09)	(0.51)	(0.10)
	[0.97[	[0.68]	[0.65]	[0.09]	[0.98]	[0.21]
Destruction	0.05	0.12	0.00	0.16*	0.22	0.16*
	(0.10)	(0.15)	(0.11)	(0.08)	(0.51)	(0.10)
	[0.61]	[0.49]	[0.97]	[0.18]	[0.62]	[0.13]
Female * Injured	0.03		0.07	-0.69*		
	(0.11)		(0.12)	(0.37)		
	[0.77]		[0.55]	[0.11]		
Female * Destruction	-0.01		0.02	0.55		
	(0.11)		(0.13)	(0.41)		
	[0.91]		[0.87]	[0.23]		
Parent		0.23***			0.15**	0.35***
		(0.07)			(0.06)	(0.10)
		[0.01]			[0.17]	[0.00]
Parent * Injured		-0.11			0.08	-0.24*
		(0.16)			(0.50)	(0.13)
		[0.55]			[0.85]	[0.08]
Parent * Destruction		-0.09			-0.19	-0.17
		(0.14)			(0.48)	(0.16)
		[0.55]			[0.66]	[0.30]
Individual controls	Y	Y	Y	Y	Y	Y
Number of clusters	14	14	14	12	14	14
Observations	745	745	651	94	431	314
R-squared	0.01	0.02	0.01	0.06	0.00	0.04

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. As a robustness check, models from Table 2 are estimated in a horse race specification in which we control for *Destruction* together with *Injured*. All specifications include random effects at the village level *Egalitarian* is an indicator variable equal to 1 if the respondent chooses the costly sharing and the costly envy option in the dictator game while playing with someone from the same village indicating their preference for egalitarianism. *Injured (Inj.)* is an indicator variable equal to one if the respondent or any member of the respondent's household was injured during the conflict. *Destruction (Des.)* is an indicator variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Individual controls include the respondents' age, gender, religious affiliation (Muslim vs Christian) and number of children. Age is by terciles of age distribution: young (18- 28), middle age (29-39), and old (above 40).

Table A.5: Effect of victimisation on competitive preferences - Table 3 using fixed effects model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Dependant variable: *Competitiveness*											
Sample	Full				Parents		Non-Parents		Females		Males	
Measure of Victimisation	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.
Female	-0.08	-0.09			-0.10*	-0.16**	0.03	0.12				
	(0.05)	(0.06)			(0.06)	(0.07)	(0.16)	(0.17)				
	[0.12]	[0.09]			[0.10]	[0.01]	[0.77]	[0.34]				
Victimisation	-0.07	-0.09	-0.13	-0.08	-0.05	-0.13**	-0.22*	-0.03	-0.09	-0.16	-0.16	-0.00
	(0.05)	(0.06)	(0.09)	(0.09)	(0.06)	(0.06)	(0.13)	(0.14)	(0.13)	(0.13)	(0.12)	(0.13)
	[0.28]	[0.11]	[0.03]	[0.06]	[0.38]	[0.04]	[0.15]	[0.69]	[0.17]	[0.08]	[0.23]	[0.98]
Female * Victimisation	0.14**	0.13*			0.15**	0.20***	0.08	-0.07				
	(0.06)	(0.07)			(0.07)	(0.07)	(0.21)	(0.23)				
	[0.02]	[0.34]			[0.02]	[0.00]	[0.65]	[0.60]				
Parent			-0.05	-0.02					-0.06	-0.09	-0.02	0.10
			(0.07)	(0.08)					(0.10)	(0.10)	(0.13)	(0.14)
			[0.41]	[0.76]					[0.56]	[0.32]	[0.80]	[0.33]
Parent * Victimisation			0.17*	0.09					0.20	0.23*	0.07	-0.13
			(0.09)	(0.09)					(0.14)	(0.14)	(0.14)	(0.15)
			[0.00]	[0.14]					[0.11]	[0.05]	[0.39]	[0.12]
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of clusters	14	14	14	14	14	14	14	14	14	14	14	14
Observations	745	744	745	744	651	650	94	94	431	431	314	313
R-squared	0.37	0.37	0.37	0.37	0.39	0.39	0.39	0.37	0.40	0.40	0.37	0.37

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. As a robustness check our original model from Table 3 is estimated with village fixed effects. All specifications include fixed effects at the village level. *Competitiveness* is an indicator variable equal to one if the respondent chooses tournament. *Injured (Inj.)* is an indicator variable equal to one if the respondent or any member of the respondent's household was injured during the conflict. *Destruction (Des.)* is an indicator variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian), number of children, risk, ability, and confidence scores. Age is by terciles of age distribution: young (18- 28), middle age (29-39), and old (above 40).

Table A.6: Effect of victimisation on competitive preferences - Table 3 using a Logit model

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Dependant variable: *Competitiveness*											
Sample	Full				Parents		Non-Parents		Females		Males	
Measure of Victimisation	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.	Inj.	Des.
Female	-0.55*	-0.75*			-0.67*	-1.30**	0.46	0.97				
	(0.29)	(0.39)			(0.34)	(0.51)	(0.76)	(0.76)				
Victimisation	-0.49*	-0.75***	-0.77***	-0.47	-0.40	-1.15***	-1.23***	-0.34	-0.58	-1.03	-0.89*	-0.04
	(0.26)	(0.29)	(0.28)	(0.31)	(0.29)	(0.40)	(0.47)	(0.34)	(0.49)	(0.66)	(0.47)	(0.45)
Female * Victimisation	0.93***	1.01**			1.02**	1.58***	0.14	-0.83				
	(0.35)	(0.41)			(0.42)	(0.52)	(0.82)	(0.80)				
Parent			-0.31	-0.10					-0.39	-0.59	-0.10	0.93
			(0.41)	(0.43)					(0.65)	(0.62)	(0.43)	(0.71)
Parent * Victimisation			0.97**	0.48					1.22	1.42*	0.22	-1.31**
			(0.43)	(0.43)					(0.76)	(0.73)	(0.44)	(0.54)
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Number of clusters	14	14	14	14	14	14	12	12	14	14	14	14
Observations	745	744	745	744	651	650	94	94	431	431	314	313

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. As a robustness check, our original model from Table 3 is estimated using a logit model. All specifications include random effects at the village level. *Competitiveness* is an indicator variable equal to one if the respondent chooses tournament. *Injured (Inj.)* is an indicator variable equal to one if the respondent or any member of the respondent's household was injured during the conflict. *Destruction (Des.)* is an indicator variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian), number of children, risk, ability, and confidence scores. Age is by terciles of age distribution: young (18- 28), middle age (29-39), and old (above 40).

Table A.7: Effect of victimisation on competitive preferences - Table 3 using 'Horse Race' specs

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependant variable: *Competitive*ness					
Sample	Full		Parents	Non-Parents	Females	Males
Female	-0.10*		-0.18***	0.16		
	(0.06)		(0.07)	(0.11)		
	[0.09]		[0.02]	[0.19]		
Injured	-0.04	-0.16	0.00	-0.27	0.24	-0.29
	(0.06)	(0.16)	(0.06)	(0.26)	(0.17)	(0.18)
	[0.52]	[0.34]	[0.97]	[0.26]	[0.12]	[0.16]
Destruction	-0.07	-0.01	-0.20***	0.12	-0.38**	0.15
	(0.05)	(0.15)	(0.07)	(0.24)	(0.19)	(0.16)
	[0.31]	[0.98]	[0.02]	[0.62]	[0.02]	[0.43]
Female * Injured	0.12**		0.10	0.54***		
	(0.05)		(0.07)	(0.17)		
	[0.08]		[0.20]	[0.01]		
Female * Destruction	0.05		0.15*	-0.56***		
	(0.06)		(0.08)	(0.17)		
	[0.52]		[0.12]	[0.00]		
Parent		-0.05			-0.11	0.07
		(0.08)			(0.09)	(0.14)
		[0.48]			[0.24]	[0.68]
Parent * Injured		0.22*			-0.14	0.25
		(0.13)			(0.16)	(0.17)
		[0.14]			[0.34]	[0.17]
Parent * Destruction		-0.09			0.38**	-0.33*
		(0.15)			(0.18)	(0.20)
		[0.56]			[0.01]	[0.12]
Individual controls	Y	Y	Y	Y	Y	Y
Number of clusters	14	14	14	12	14	14
Observations	744	744	650	94	431	313
R-squared	0.21	0.22	0.23	0.23	0.25	0.17

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. As a robustness check, our original model from Table 2 is estimated in a horse race specification in which we control for *Destruction* together with *Injured*. All specifications include random effects at the village level. *Competitiveness* is an indicator variable equal to one if the respondent chooses tournament. *Injured (Inj.)* is an indicator variable equal to one if the respondent or any member of the respondent's household was injured during the conflict. *Destruction (Des.)* is an indicator variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian), number of children, risk, ability, and confidence scores. Age is by terciles of age distribution: young (18- 28), middle age (29-39), and old (above 40).

Table A.8: Mechanisms for effect on competitive preferences - Table 4 using fixed effects model

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependant variable: *Competitiveness*					
Sample:	Single, widowed or divorced	Partnered	Many children	Few children	Young children	Older children
Female	-0.36**	-0.11	-0.22**	-0.12	-0.25***	-0.04
	(0.14)	(0.08)	(0.11)	(0.09)	(0.10)	(0.09)
	[0.25]	[0.12]	[0.05]	[0.17]	[0.01]	[0.62]
Destruction	-0.38***	-0.08	-0.17*	-0.10	-0.20**	-0.04
	(0.12)	(0.07)	(0.10)	(0.09)	(0.09)	(0.08)
	[0.00]	[0.24]	[0.09]	[0.20]	[0.00]	[0.62]
Female * Destruction	0.40*	0.15*	0.24**	0.18*	0.27**	0.08
	(0.16)	(0.08)	(0.12)	(0.10)	(0.11)	(0.10)
	[0.23]	[0.00]	[0.00]	[0.04]	[0.01]	[0.37]
Individual controls	Y	Y	Y	Y	Y	Y
Number of clusters	14	14	14	14	14	14
Observations	124	521	324	326	255	395
R-squared	0.37	0.41	0.40	0.41	0.43	0.39

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. As a robustness check our original model from Table 4 is estimated with village fixed effects. All specifications include random effects at the village level. *Competitiveness* is an indicator variable equal to one if the respondent chooses tournament. *Single, widowed or divorced* considers only the parents who are either single, divorced or have been widowed, while *Partnered* considers only those parents who currently have a partner. *Many Children* considers only the parents with more children than the village average, while *Few Children* are those that have either the same number of children as the village average or fewer. *Young children* are those whose children are 10 years old or under on average. *Older children* are those whose children are over 10 years old on average. *Destruction (Des.)* is an indicator variable equal to 1 if the respondent reports any loss of property as a result of the conflict. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian), number of children, risk, ability, and confidence scores. Age is by terciles of age distribution: young (18- 28), middle age (29-39), and old (above 40).

80 **Table A.9: Competitiveness by gender and victimisation – Parents in Colombia**

	(1) Female Competitiveness (Std. Dev.) N=118	(2) Male Competitiveness (Std. Dev.) N=73	(3) t-test Female=Male P-Value
Non-Displaced	0.386	0.500	0.222
	(0.490)	(0.505)	
	n=70	n=48	
Displaced	0.532	0.500	0.802
	(0.504)	(0.511)	
	n=47	n=24	
Non-Displaced=Displaced t-test P-Value	0.121	1.000	

81 *Notes: Displaced* is an indicator variable equal to one if the respondent or any member of the respondent's household
82 was forcibly displaced during the conflict. *Competitiveness* is an indicator variable equal to one if the respondent chooses
83 tournament.

Table A.10: Relation between competitive and egalitarian preferences

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependant variable: *Egalitarian*							
Competitive	-0.02	-0.02	-0.06	-0.02	-0.01	0.00	-0.24**	-0.20**
	(0.04)	(0.04)	(0.04)	(0.04)	(0.06)	(0.06)	(0.10)	(0.09)
	[0.63]	[0.69]	[0.33]	[0.76]	[0.93]	[0.96]	[0.00]	[0.00]
Female			-0.01	-0.01	0.06	0.01		
			(0.04)	(0.04)	(0.06)	(0.06)		
			[0.90]	[0.62]	[0.50]	[0.87]		
Female * Competitive					-0.09	-0.03		
					(0.07)	(0.07)		
					[0.44]	[0.79]		
Parent			0.12**	0.06			-0.01	-0.07
			(0.06)	(0.06)			(0.09)	(0.09)
			[0.01]	[0.11]			[0.87]	[0.12]
Parent * Competitive							0.22**	0.21**
							(0.10)	(0.10)
							[0.02]	[0.00]
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y
Village effects	Random	Fixed	Random	Fixed	Random	Fixed	Random	Fixed
Number of clusters	14	14	14	14	14	14	14	14
Observations	751	751	750	750	750	750	750	750
R-squared	0.01	0.17	0.02	0.18	0.02	0.18	0.03	0.18

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. All specifications include random or fixed effects at the village level as indicated. *Egalitarian* is an indicator variable equal to 1 if the respondent chooses the costly sharing and the costly envy option in the dictator game while playing with someone from the same village indicating their preference for egalitarianism. *Competitiveness* is an indicator variable equal to one if the respondent chooses tournament. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian) and number of children. Age is by terciles of age distribution: young (18- 28), middle age (29-39), and old (above 40).

Table A.11: Role of age in relation between competitive and egalitarian preferences

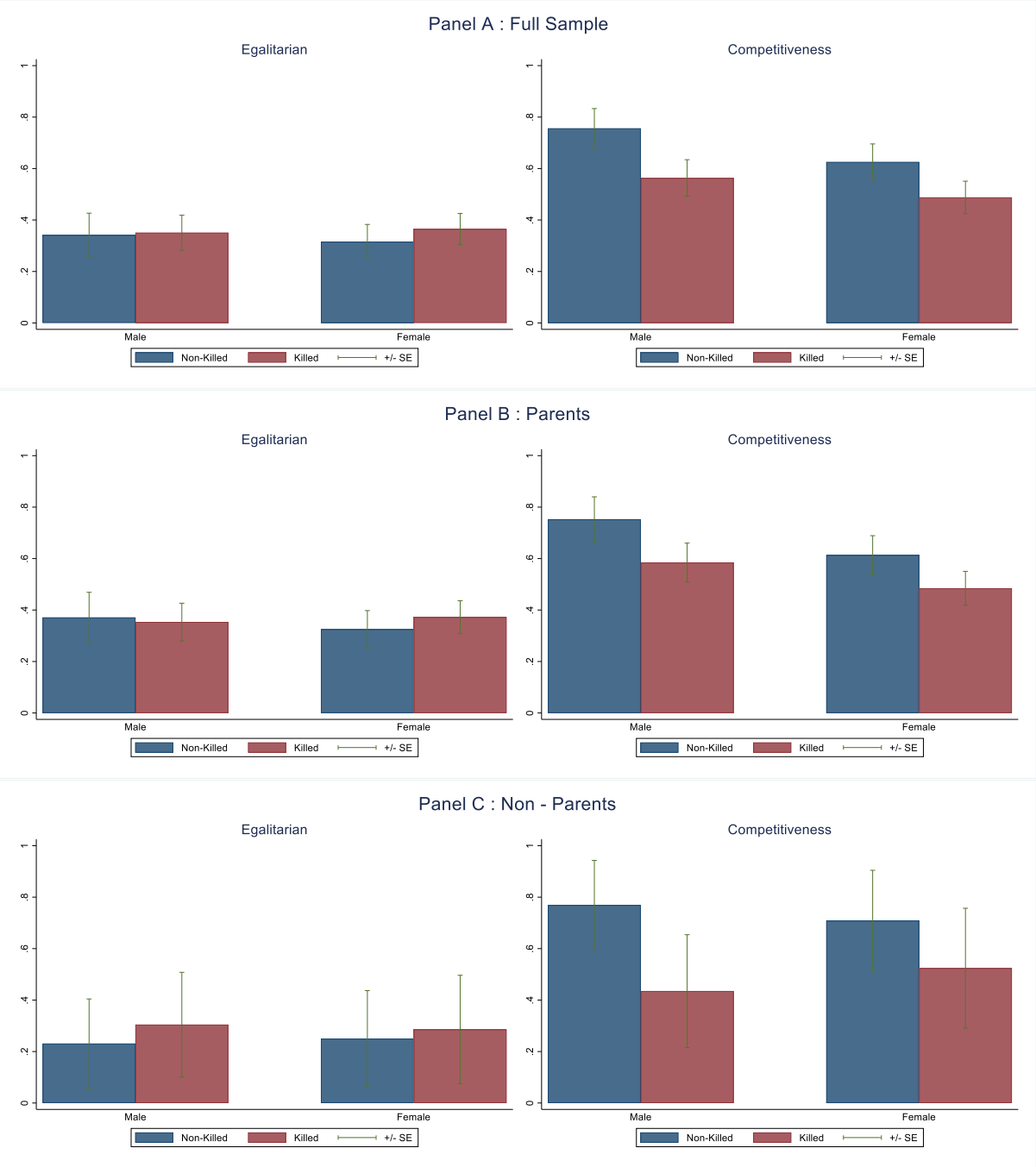
	(1)	(2)	(3)	(4)
	Dependant variable: *Egalitarian*			
Competitive	-0.08	-0.07	-0.24**	-0.21**
	(0.08)	(0.08)	(0.10)	(0.09)
	[0.49]	[0.48]	[0.00]	[0.00]
Female	0.05	0.00		
	(0.06)	(0.06)		
	[0.76]	[0.98]		
Female * Competitive	-0.06	-0.01		
	(0.08)	(0.07)		
	[0.64]	[0.93]		
Parent			0.00	-0.05
			(0.09)	(0.09)
			[1.00]	[0.17]
Parent * Competitive			0.20*	0.19*
			(0.11)	(0.11)
			[0.03]	[0.02]
Middle aged	-0.04	-0.05	-0.04	-0.04
	(0.07)	(0.07)	(0.07)	(0.07)
	[0.46]	[0.57]	[0.65]	[0.67]
Middle aged * Competitive	0.05	0.09	-0.01	0.04
	(0.09)	(0.08)	(0.09)	(0.08)
	[0.71]	[0.39]	[0.96]	[0.74]
Old aged	0.05	-0.06	0.03	-0.04
	(0.07)	(0.07)	(0.07)	(0.07)
	[0.78]	[0.44]	[0.61]	[0.61]
Old aged * Competitive	0.13	0.10	0.07	0.05
	(0.09)	(0.09)	(0.09)	(0.09)
	[0.07]	[0.09]	[0.32]	[0.50]
Individual controls	Y	Y	Y	Y
Village effects	Random	Fixed	Random	Fixed
Number of clusters	14	14	14	14
Observations	750	750	750	750
R-squared	0.03	0.18	0.03	0.18

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. All specifications include random or fixed effects at the village level as indicated. *Egalitarian* is an indicator variable equal to 1 if the respondent chooses the costly sharing and the costly envy option in the dictator game while playing with someone from the same village indicating their preference for egalitarianism. *Competitiveness* is an indicator variable equal to one if the respondent chooses tournament. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian) and number of children. Age is by terciles of age distribution: young (18- 28), middle age (29-39), and old (above 40).

Supplementary Information B: Additional Measure of Victimisation - Killed

Since our results suggest that the behavioural changes in competitive behaviour are being channelled through the economic effects of deprivation, our main variables of analysis are *Injured* and *Destruction*, which we believe are most associated with the reduction in material resources. Here we present results for an additional measure of victimisation: *Killed*, which we believe does not directly lead to economic deprivation or scarcity. *Killed* is an indicator variable equal to 1 if the respondent reported the death of a household member due to the conflict.

Figure B.1: Mean egalitarianism and competitiveness by Gender and Parental Status



Note: The graphs illustrate the unadjusted differences in the mean competitiveness and in-group egalitarianism between men and women for measures of individual victimisation. *Killed* is an indicator variable equal to 1 if the respondent reported the death of a household member due to conflict. *Egalitarian* is an indicator variable equal to 1 if the respondent chooses the costly sharing and the costly envy option in the dictator game while playing with someone from the same village indicating their preference for egalitarianism. *Competitiveness* is an indicator variable equal to one if the respondent chooses tournament.

Table B.1: Effect of victimisation on egalitarian preferences - Killed

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Dependant variable: *Egalitarian*											
Sample	Full				Parents		Non-Parents		Females		Males	
Female	-0.02	-0.03			-0.04	-0.05	0.06	0.05				
	(0.06)	(0.05)			(0.07)	(0.06)	(0.09)	(0.13)				
	[0.76]	[0.64]			[0.53]	[0.51]	[0.58]	[0.58]				
Killed	0.00	0.00	0.08	0.10	-0.03	-0.03	0.11	0.14	0.10	0.12	0.08	0.14
	(0.05)	(0.06)	(0.09)	(0.09)	(0.06)	(0.06)	(0.09)	(0.16)	(0.14)	(0.13)	(0.08)	(0.14)
	[0.98]	[1.00]	[0.42]	[0.34]	[0.67]	[0.63]	[0.30]	[0.13]	[0.52]	[0.46]	[0.50]	[0.00]
Female * Killed	0.05	0.05			0.07	0.07	-0.07	-0.08				
	(0.07)	(0.07)			(0.07)	(0.07)	(0.16)	(0.21)				
	[0.48]	[0.49]			[0.33]	[0.38]	[0.68]	[0.69				
Parent			0.10	0.08					0.11	0.10	0.15***	0.16
			(0.06)	(0.08)					(0.10)	(0.11)	(0.06)	(0.13)
			[0.23]	[0.24]					[0.33]	[0.34]	[0.07]	[0.01]
Parent * Killed			-0.07	-0.08					-0.04	-0.06	-0.12	-0.21
			(0.08)	(0.10)					(0.11)	(0.13)	(0.08)	(0.14)
			[0.48]	[0.37]					[0.75]	[0.68]	[0.29]	[0.00]
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	R	F	R	F	R	F	R	F	R	F	R	F
Number of clusters	14	14	14	14	14	14	12	12	14	14	14	14
Observations	744	744	744	744	650	650	94	94	431	431	313	313
R-squared	0.01	0.18	0.01	0.18	0.01	0.18	0.01	0.21	0.01	0.24	0.03	0.15

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. All specifications include random *(R)* or fixed *(F)* effects at the village level as indicated. *Egalitarian* is an indicator variable equal to 1 if the respondent chooses the costly sharing and the costly envy option in the dictator game while playing with someone from the same village indicating their preference for egalitarianism. *Killed* is an indicator variable equal to one if the respondent reported death of a household member as a result of the conflict. Individual controls are included in all specifications. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian) and number of children. Age is by terciles of age distribution: young (18- 28), middle age (29-39), and old (above 40).

Table B.2: Effect of victimisation on competitive preferences - Killed

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Dependant variable: *Competitiveness*											
Sample	Full				Parents		Non-Parents		Females		Males	
Female	-0.07	-0.07			-0.09*	-0.09*	0.06	0.00				
	(0.04)	(0.05)			(0.05)	(0.05)	(0.11)	(0.16)				
	[0.17]	[0.16]			[0.05]	[0.08]	[0.66]	[0.99]				
Killed	-0.16***	-0.12**	-0.11**	-0.08	-0.14***	-0.12**	-0.30**	-0.20	-0.08	-0.06	-0.21***	-0.14
	(0.05)	(0.05)	(0.05)	(0.09)	(0.05)	(0.06)	(0.12)	(0.15)	(0.08)	(0.14)	(0.07)	(0.13)
	[0.01]	[0.04]	[0.15]	[0.19]	[0.03]	[0.05]	[0.05]	[0.02]	[0.46]	[0.45]	[0.14]	[0.08]
Female * Killed	0.13***	0.13**			0.15***	0.15**	0.17	0.20				
	(0.04)	(0.06)			(0.05)	(0.06)	(0.19)	(0.25)				
	[0.00]	[0.00]			[0.01]	[0.01]	[0.39]	[0.09]				
Parent			0.01	0.02					-0.01	0.00	0.01	0.04
			(0.05)	(0.07)					(0.09)	(0.10)	(0.11)	(0.12)
			[0.85]	[0.64]					[0.93]	[0.95]	[0.94]	[0.63]
Parent * Killed			0.06	0.05					0.09	0.09	0.04	0.00
			(0.06)	(0.09)					(0.11)	(0.14)	(0.10)	(0.14)
			[0.43]	[0.42]					[0.48]	[0.39]	[0.76]	[1.00]
Individual controls	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Village effects	R	F	R	F	R	F	R	F	R	F	R	F
Number of clusters	14	14	14	14	14	14	12	12	14	14	14	14
Observations	743	743	743	743	649	649	94	94	431	431	312	312
R-squared	0.23	0.37	0.21	0.37	0.22	0.39	0.25	0.38	0.25	0.39	0.19	0.38

Notes: OLS regression with a constant. Robust standard errors are given in parenthesis below the coefficients. *** p<0.01, ** p<0.05, * p<0.1. All specifications include random *(R)* or fixed *(F)* effects at the village level as indicated. *Competitiveness* is an indicator variable equal to one if the respondent chooses tournament. *Killed* is an indicator variable equal to one if the respondent reported death of a household member as a result of the conflict. Individual controls include the respondents' age, gender, religious affiliation (Muslim, Christian), number of children, risk, ability, and confidence scores. Age is by terciles of age distribution: young (18- 28), middle age (29-39), and old (above 40).

Supplementary Information C: Mothers' and fathers' contributions and responsibilities

We elicited norms of mothers' and fathers' contributions and responsibilities towards children and spouses by asking our married participants two questions: "*What do you provide for yourself and your children?*" and "*What does your spouse provide for yourself and your children?*" In addition, we collected some qualitative information from the observations of the field coordinator (Bethany Gerdemann) and the opinions of the local enumerators.

Table C.1 shows that both parents agree that about 65% of food is provided by the father, although there is a disagreement with respect to the mother's contributions, as women think they contribute 51% while fathers recognize only 35%. Similarly, for children's clothing/shoes, school fees and medical expenses, between 50% and 58% is agreed that is provided by fathers. Again, mothers think they contribute more that their husbands recognize. Interestingly, fathers provide for some of the women medical expenses (48%) and clothes (39%), more than their wives provide to them (17% for both items). Household items is where disagreement is highest, with mothers indicating they provide 60% and their husbands 20%, while fathers think they contribute 27% and their wife/ves only 21%.

These numbers are in line with the qualitative observations from the field. The coordinator reported to have observed that women tend to be the primary caretakers and they ultimately ensure their children are fed, cared for, and attend school. Men are supposed to provide money for school fees and perhaps clothing but women are supposed to provide the food by whatever means necessary. If the family farms, then the men contribute to food production and acquisition. If men work in other trades, then they may provide money for food, but often it is the women who secure food whether through employment, petty trade, or some other way the field coordinator could not see. For small families, men often spend more time with their kids. For polygynous men, with many more kids and wives, fathers seem less directly involved with their children. There are lots of children born out of wedlock. In those cases, the men often do not live near their kids, but will get updates occasionally, and may go visit periodically. It almost seems like they aren't expected to be around or directly involved, and it seems like women do not expect much from the father of their children.

Table C.1. Percentage of married parents reporting whether they and/or their spouse provide for the listed expenses

	(1)	(2)	(3)	(4)
	Mothers		Fathers	
Expense:	Provided by self	Provided by spouse	Provided by self	Provided by spouse
Food	51	65	67	35
Water	49	17	26	19
Fuel	27	9	12	9
Clothing/shoes for self	45	39	57	17
Clothing/shoes for children	31	54	55	27
School fees	19	50	50	15
Medical expenses for self	32	48	57	17
Medical expenses for children	29	57	58	21
Household items (pots, appliances, furniture)	60	20	27	21

Supplementary Information D: Background on the conflict in Sierra Leone

The Civil War in Sierra Leone lasted almost a decade from 1991 to 2003. It started when the Revolutionary United Front (RUF) attempted to overthrow the government of then President Jospeh Momoh. The RUF was assisted by the National Patriotic Front of Libera (NPFL) of Charles Taylor. The cause of the civil war "could be traced to the corrosive effects of the personalised and monolithic rule of the Congress, which led to the destruction of civil society and democratic accountability" (Zack-Williams 1999). Soon after the start, the RUF took over large territories in eastern and southern Sierra Leone where large diamond reserves existed. While they had some local support, the RUF brutalised native Sierra Leoneans to a great extent. They conscripted locals and especially children to work in their diamond mines which funded their military campaign. At that time, it was said: "Sierra Leone is no place to be young" (Goodwin 1999). Young boys were made to take up arms or work in mines while young girls were captured and made to take up arms, used as sex slaves, work at the diamond mines or do any task that was required of them.

Given this, it would seem living close to a rebel camp increased chances of exposure to conflict, including having family members injured, killed or having their property taken over or destroyed. However, within a village there is no particular evidence that certain people were targeted more than others; men, women, girls and boys were all targeted. Therefore, conditional on certain observables, it can be safely assumed that violence was randomly assigned within a village. Village fixed effects have been included in SI Table A2 and A5 to control for the variation between villages and only look at variation between individuals within the same village.

Figure D.1: Map of Sierra Leone

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