

Gender altruism and attitudes towards violence against women: Experimental evidence from Tanzania*

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Abstract

We test the idea that unequal gender norms contribute to shape individuals' attitudes towards violence against women. We proceed in two steps. We first perform a series of behavioral games to build indices of the degree to which participants treat women and men equally – *gender altruism*. We implement these games in an experimental setting in traditional fishing societies in rural Tanzania, where we can exploit important differences in gender norms and the sexual division of labor at home. We find systematically lower levels of gender altruism in lake-fishing villages compared to sea-fishing villages. When we relate our measures of gender altruism to attitudes towards domestic violence, we find a significantly higher tendency for participants in lake-fishing villages to justify violence against women. In order to identify the direction of causality, we use differences in coastal location as a proxy for differences in gender norms. Overall, our findings contribute with experimental evidence suggesting that that unequal gender norms contribute to shape individuals' attitudes towards violence against women.

Keywords: Gender norms, violence against women, altruism, equality, dictator game, ultimatum game, fishing societies.

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1. Introduction

Violence against women is more prevalent in Africa than in other parts of the world (WHO, 2013), and it is even more pervasive in Tanzania than in several other countries in the continent.¹ Estimates of the World Health Organization show that four out of ten women in Tanzania have experienced physical or sexual violence at least once in their lifetime by the turn of the millennium (WHO, 2005); and among those women who had ever been injured by a partner, one half reported that they needed health care for an injury at least once (Ellsberg *et al.*, 2008). Even though the high level of prevalence of violence against women is known across the country, the prevailing gender norms admit women's subordination, and even justify male violence towards women (Laisser *et al.*, 2011).²

A large literature cutting across disciplines has examined the origins of domestic violence (see Alesina, Brioschi and La Ferrara 2016 for a short survey). The traditional literature focuses on contemporaneous determinants, and finds that institutional, and individuals' and families' socio-economic characteristics are strong correlates of violence against women (Rao 1997; Castro, Peek-Asa and Ruiz 2003; Anderberg *et al.* 2016). More recent studies have focused on historical and cultural elements, and show that differences in gender norms and attitudes towards gender roles can be partly attributed to characteristics of traditional livelihoods and traditional family structures (see e.g. Alesina, Giuliano and Nunn, 2013; and Tur-Prats, 2015).³

Within the more recent literature, Alesina *et al.* (2013) show that differences in traditional agricultural practices contributed to shape attitudes about the appropriate role for women in society. In Leyaro *et al.* (2017) we extend that idea, and argue that differences across traditional fishing economies also have the potential to affect the evolution of cultural differences in gender norms, and in particular those associated to actions and attitudes about violence against women. In that paper (Leyaro *et al.* 2017), we find

¹ The country stands out in that region as one of the countries with a significantly higher level of non-partner sexual violence and sexual abuse during childhood than the average country (WHO, 2005).

² Even though women in Tanzania are socialized to tolerate domestic violence, it has become easier in recent years for women to report, get help, and suggest preventive measures against domestic violence (Laisser *et al.*, 2011).

³ Research in psychology supports this idea, by showing the potential of local ecologies to shape cultures, and of cultures to influence the development of personalities (Triandis and Suh, 2002).

systematically less violence against women in traditional sea-fishing areas as compared to traditional lake-fishing, agricultural, or pastoralist societies, in an analysis with health survey data for Tanzania. Based on literature in anthropology and agricultural economics, we hypothesize that the mechanism is related to differences in the sexual division of labor, which gives a prominent and more egalitarian role to women in sea-fishing areas, as compared to other traditional livelihoods.

In this study, we test empirically the hypothesis of a more egalitarian gender culture in sea-fishing societies, and we check if a more egalitarian gender culture has an effect on domestic violence against women. We first implement a series of behavioral games in a lab-in-the-field setting, to build indices of the degree to which participants treat women and men equally – which we label as *gender altruism*. We find systematically lower levels of gender altruism in lake-fishing villages compared to sea-fishing villages. When we look at the relationship between gender altruism and domestic violence, we find a tendency for participants in lake-fishing villages to justify domestic violence against women. In order to disentangle the direction of causality between attitudes towards equality and attitudes towards gender-based violence, we propose an identification strategy using the geographic location of each village as an instrument to predict equality attitudes. More precisely, following Leyaro et al. (2017) and the idea that women in sea-fishing societies have a relatively stronger position in the economy of the household compared to women in lake-fishing societies, we propose that seashore location can be used as a valid exogenous predictor of individual attitudes towards violence against women, because of its direct effects in shaping more favorable social attitudes towards gender equality. Our main results support this hypothesis, showing that the geographic location of sea-fishing villages predicts the presence of more egalitarian gender attitudes in those locations, and that this in turn maps into lower levels of justification of violence against women.

Our results contribute with experimental evidence to the literature examining the historical and cultural origins of gender norms and violence against women, by showing that differences in cultural norms of altruism and attitudes towards gender equality, or differences in *gender altruism*, hold explanatory power for differences in attitudes towards violence against women.

The remainder of the paper is organized as follows. Section 2 describes the theoretical framework. Section 3 describes the field setting, while Section 4 gives details about the experimental design. Section 5 shows our estimation strategy. Section 6 presents the results, and Section 7 our conclusions.

2. Theoretical framework

Leyaro et al. (2017) integrate research in economics and anthropology to propose the idea that attitudes and practices of violence against women partly originate in differences in the basic subsistence problem across societies, and in the characteristics of the sexual division of labor for solving that problem in each society. In particular, they compare traditional livelihood characteristics for sea-fishing, lake-fishing, agricultural, and pastoralist societies, and argue that traditional sea-fishing societies have a more egalitarian sexual division of labor, and a more egalitarian and diversified allocation of activities related to the basic economy of the household to women, compared to the rest.

Their main argument relies on the characteristics of sea-fishing economies. As documented by research in anthropology, sea-fishing societies enable women to be more independent and resourceful, by allowing them to acquire local skills for work that are complementary to activities outside the local economy, and in non-fishing and non-agrarian sectors. This essentially provides women in sea-fishing areas with larger shadow wages outside the traditional local economic activity of the household, which ultimately may help to sustain higher degrees of independence and bargaining power for women, and thereby reduce within-household inequalities in general, and the incidence of domestic violence against them in particular.

As explained in more detail in Leyaro et al. (2017), traditionally agricultural, pastoralist, and lake-fishing societies, do not share the same type or level of egalitarian characteristics than sea-fishing societies. These other societies seem to instead sustain norms that give men a relatively larger and a more visible role within the economy of the household. A clear example, for instance, is in the comparison between lake- and sea-fishing villages made by Gneezy et al. (2016), who find lower levels of cooperation and trust among lake

fishermen than among sea fishermen, and propose that they relate to larger the larger amount of activities that have to be undertaken in group in areas of sea-fishing.

2.1 Behavioral measures of altruistic behavior

Among behavioral games, the dictator and the ultimatum games are two protocols commonly used to measure the level of altruistic behavior.

The dictator game helps to build measures of the tendency to be generous in anonymous one-shot interactions. It is typically administered with the aim to measure specific aspects of individual social preferences, which characterize personal willingness to trade off individual gains for perceived moral rectitude or fairness (Levitt and List, 2007). That is, the level of donation in a one-shot dictator game provides a measure of generalized altruism unbiased by strategic or reputational concerns, and as such it has been used to measure the strength of egalitarian norms within and across societies (Cappelen *et al.*, 2007; Barr *et al.*, 2009). In terms of implementation, one player is allocated a sum of money and decides how to divide that amount between another player and him-/herself (Forsythe *et al.*, 1994).

The ultimatum game is a two-stage game, where the receiver has the power to punish the sender by rejecting a sum deemed too low or not acceptable in general, in which case both sender and receivers end the game with zero gains. If players are utility maximizers, senders should send amounts approaching zero, while receivers should reject any offer. In practice, neither of these predictions are typically fulfilled. Therefore, the ultimatum game is designed to capture gender differences in strategic behavior, and attitudes to fairness, related to equality, which play a significant role in determining the outcome of negotiations (Thaler, 1988).

2.2 Previous empirical studies on altruistic behavior

A number of studies have attempted to measure altruistic behavior through variations of the dictator and the ultimatum games, and have shown that they are robust tools to assess this aspect of societal behavior.

For example, Patton (2004) compares the results of the ultimatum game played by two ethnic/political groups (the Achuar and Quechua) in a remote area of the Ecuadorian Amazon. Even though these two groups share common hunting, fishing, gathering, and horticultural lifeways, they play the ultimatum game differently, proposing different accounts of what constitutes reciprocal fairness. The differences in the outcome of the game between these two groups are explained by differences in coalitional stability, whereby members of the less stable coalition have lower expectations that cooperative behavior will be reciprocated in the future.

Marlowe (2004) implements an ultimatum and a dictator game in order to study cooperation within a hunter-gatherer society in Tanzania. Even though various ethnographic studies regard the Hadza as one of the most egalitarian societies in the country, the author shows how they have made lower offers in both games compared to those typically observed in more complex societies.⁴

Gneezy et al. (2009) study gender differences in competition in a patriarchal (Maasai in Tanzania) and a matriarchal society (Khasi in India), and find twice as high competition rates among Maasai men than among Maasai women. The result is opposite in the matrilineal Khasi society. Their results emphasize the inheritance rules as one of the determinants of the observed gender differences in selecting into competitive environments. Focusing on different types of fishing subsistence in Brazil, Gneezy et al. (2016) find that people in lake-fishing areas tend to trust, coordinate group actions, and cooperate less than their sea-fishing counterparts.

Finally, Henrich et al. (2006) study human cooperation and preferences for administering costly punishment. Their experimental results show a common trait for 15 different populations they study, namely the existence of some willingness to administer costly punishment under increasing unequal behavior. Whilst the magnitude of this punishment is not equal across populations, the authors find that costly punishment varies with altruistic behavior across populations.

⁴ For example, their offers were lower in smaller camps, which is interpreted as a possible combination of a greater desire to escape from constant sharing in small camps and a greater fear of punishment for not sharing in larger camps.

Building on this type of results and evidence of the effectiveness of behavioral experiments to measure different cultural attitudes, we describe below two variations of the dictator game and a variation of the ultimatum game, to construct measures of altruism and attitudes towards equality between genders, or a measure of *gender altruism* amongst our respondents.

3. Field and experimental setting

We selected participants for our experiment in three fishing villages at the coast of Indian Ocean and three at Lake Victoria in Tanzania. These villages share several characteristics in terms of geography and overall organization. As it can be seen from Figure 1, both fishing societies are in similar distance to large cities, but they are not in close geographical proximity to each other (which, for example, helps to reduce concerns that people in the two different types of locations work in the same markets).

[Figure 1]

The main difference between the selected sea and lake fishing villages is that women are more likely to take a more prominent role in activities related fishing, distributing and marketing of fish, in the sea region. For example, women perform pre- and post-harvesting work, such as mending nets, collecting bait, preparing food for fishers, keeping accounts (Williams, 2008), and they also outnumber men in the processing and trading of fish (Weeratunge, Snyder and Sze, 2010). A recent study is congruent with those findings, and reports an increase in the number of women entering local fish markets in Zanzibar over the last years (Fröcklin *et al.*, 2013).⁵

Fishermen at sea and at lake also use different technologies to catch fish. The sea fisheries are divided into coastal and offshore. Coastal fisheries are predominantly small-scale (artisanal), operating small dug-out canoes and wooden planked boats (Ministry of Agriculture, Livestock and Fisheries, 2016). In general, the level of motorization is very low. As well as supplying fresh fish into local markets, restaurant and hotel trade, the

⁵ This particular increased involvement of women in Zanzibar was probably due to the lack of alternative economic activities, and the need for all family members to contribute to household (Fröcklin *et al.*, 2013).

artisanal fishery supplies a modest export trade in higher value species such as marine crabs, lobsters, octopus, shrimps and squid. Smaller fish are usually dried or fried immediately after cleaning and packed into plastic containers or sacks for distribution to local and regional markets.

The offshore fishery is concentrated around species skipjack, yellowfin and big eye tunas, and other large pelagic fish such as shark, swordfish and marlins (Ministry of Agriculture, Livestock and Fisheries, 2016). The fleet comprises domestic industrial fishing vessels, foreign carrier vessels, purse seine vessels for processing tuna into cans and longline vessels for tuna, shark and swordfish.

Fisheries on Lake Victoria is also important – for example it accounted for 63% of all fish production from freshwater capture fisheries during 2013 (Ministry of Agriculture, Livestock and Fisheries, 2016). The main species of commercial interest are Nile perch, dagaa (freshwater sardine) and tilapia. While Nile perch is mostly exported, dagaa and tilapia are consumed locally. The division of labor between sexes is such that men tend to control the large-scale operations of high-value fish such as Nile perch, while women focus on the local market and low-value fish such as dagaa.⁶

Nile perch fishery has attained great importance over the past couple of decades. It is caught mostly from small wooden canoes and fished with gillnets and longlines. Collector vessels powered by outboard motors deliver the catch to traders and processors on landing sites. Only suitable size and quality Nile perch is processed into chilled and frozen export products. Dagaa fishery is mostly artisanal, using different types of gear including beach seine nets, scoop and lift nets and some encircling nets operated in deep waters. Fishing often includes attraction by artificial light obtained from kerosene pressure lamps attached to a float. The annual production is in the order of 130,000 tones, accounting for about 42% of inland fish production (Ministry of Agriculture, Livestock and Fisheries, 2016). Once the fish has reached the landing sites, the carriers (usually women) transfer

⁶ Fishing societies tend have a high involvement of women in processing and distribution in general (McGoodwin, 2001), but this type of differences can be observed in relation to different types of fishing or the exploited fish species. For example, Fröcklin et al. (2013) document that men tend to dominate the exploitation and marketing of high-value fish, while women focus on low-value fish, consistent with what we observe in lake-fishing villages, but not in sea-fishing villages.

the catch from the boats to the drying area. The dagaa is sun-dried, either on the ground or on racks and then packed into sacks for distribution to local markets.

4. Data and experimental design

All the data for this study come from behavioral games in the field and a participant survey, which took place in an experimental setting, over two weeks between January and February 2018. Our games are two variations of a one-shot dictator game, one which is played with 10,000 Tanzanian Shillings (TZS) per recipient, and one which is played only in *hypothetical* terms as part of the survey; and a one-shot ultimatum game. All games are implemented with the intention to assess the level of altruism and perceptions of fairness among men and women in lake and sea-fishing regions of rural Tanzania.

The sequence of the activities in the experiment was to play the dictator game first and the ultimatum game second, and then conduct the survey, which included the hypothetical dictator game. Figure 2 shows the relationships and the number of participants in the experiment by village.⁷ In each village, 40 women and 40 men were invited to participate in the study. Afterwards, 10 out of 40 women and 10 out of 40 men were randomly selected to be the sender in the dictator and the ultimatum games. Further 10 men and 10 women were selected to be the receiver in both games, and 10 were chosen as controls, receiving only a participation fee for completing the questionnaire. Therefore, in total we are able to compute the level of donations of 60 women and 60 men for all games.

[Figure 2]

Both men and women were invited through community leaders to participate in the study and were told that they could earn a participation fee of 5,000 TZS for around three hours of their time. Additionally, they were told they could earn up to 40,000 TZS for playing different games. This has, of course depended on the game and whether they were randomly selected to be senders or receivers.

⁷ The participants have also participated in a randomized intervention that included a showing of two videos on violence (one on domestic violence and one on violence against albinos) to randomly chosen male and female participants. The videos were always shown after the games. The details are available in Appendix A.

At the beginning of the experiments, all participants obtained identifying codes to ensure anonymity, by drawing a piece of paper with their code from a box. Based on their code, they were assigned a role in the game and asked to wait in a group of other players with the same role. Before the start of the experiment, the games were explained to all participants and role-specific rules were repeated in smaller groups. The detailed protocol and the instructions are described in the Appendix A.

Men and women were physically separated during the experiment. Depending on the circumstances at the location, they were either in separate buildings, courtyards, or separate rooms at different sides of the same building. Two experimenters and two assistants were assigned to both the male and the female participant group in each session.⁸

4.1. The dictator games

Our first experiment is based on a one-shot dictator game, similar to that used by Forsythe et al. (1994). In our case, the sum to be distributed with another player was of 10,000 Tanzanian Shillings (TZS). Senders were asked to share that amount with a woman and the same amount with a man. The same hypothetical equivalent sum was used in the theoretical dictator game. The amount of 10,000 TZS corresponds to about 5 USD and is roughly equivalent to a month's rent of a simple two-room cottage in the sea-fishing area.⁹ The games were anonymous, meaning that the identity of the sender and receivers with whom they have been matched to play is never revealed.

If senders in the dictator game were self-interested money-maximizers, they would not allocate anything to other players. In practice, they typically allocate an average of 20-30 percent of the budget to the other player, with the vast majority of them transferring a positive amount (Camerer, 2003).

⁸ Before collecting the data, the entire protocol was tested with 40 participants in one village in the coastal region in Tanzania.

⁹ As another comparison: the minimum daily wage in the private sector in Tanzania was 3,846 TZS for agricultural services; 5,077 TZS for health services and 4,423 TZS in the trade, industries and commerce sectors in 2013.

In our version of the game, participants were deciding on the amount of money to be shared with the same and the opposite sex. That is, male subjects were told that their task was to allocate money to any of the men from the male group and any of the women from the female group; and female subjects were requested to allocate money to any of the women from the female group and any of the men from the male group. Each sex was asked to first decide on the allocation to another unknown person of the same sex.

For the dictator game, each participant received one large envelope that contained four small envelopes. Two of the small envelopes contained 10 one-thousand TZS bills. The other two were empty and had to be used to send the donation to the female and the male receivers. All senders were instructed to place any number of one-thousand bills in the envelopes marked B and C (corresponding to the allocation to men and women, depending on the sender's sex¹⁰), seal the envelope, drop it in a box, and leave. After the game, when all senders had deposited their envelopes, we matched their donation with a receiver from either male or the female recipient group that had the corresponding identification code. Participants were never told about this matching rule so nobody could be linked to their choices.

The *theoretical* dictator game was implemented as part of the participant survey. Participants were asked how they would divide 10,000 TZS between themselves and a man, and how they would divide the same amount of money between themselves and a woman. To reduce a possibility that participants think that recipients are persons whom they know, we have added photographs of a Tanzanian man and a Tanzanian woman unknown to the participants – to keep close to the condition of anonymity of the recipient in the original dictator game.¹¹

The summary of the donations in both dictator games is shown in Table B1 in the Appendix B. In general, we observe a difference between the donations at the lake and at

¹⁰ When the sender was a women, the envelope marked B was going to an anonymously paired female recipient and the envelope marked C was going to an anonymously paired male recipient. When the sender was a man, envelope B went to another man and envelope C went to another women. A more detailed information is available in the Appendix A.

¹¹ The persons in the photos had what are considered to be culturally common facial features to avoid bias on ethnical grounds. The exact wording and the layout of this question are shown in Figure A1 in the Appendix.

the sea for both sexes. We can also observe that men sent more to women than to men and that the opposite holds for female senders.

Regardless of the sent amounts, our main interest is in relative amounts sent to participants of both sexes. As indicated by the average values, both equality indices based on the dictator game tend to be higher at the sea than at the lake for both male and female participants. The values of the index based on the theoretical dictator is always higher than the value of the index based on the incentivized game. The difference in average values is higher for women than for men, indicating a differential response to incentives by sex.

4.2. The ultimatum game

In the next part of the experiment, we implemented a variation of the ultimatum game in which the participants were again asked to make the sharing decision based on the recipient's sex. In this game, participants kept the same roles as in the dictator game, i.e. senders were asked in which way they intended to share the allocated amount (10,000 TZS) with a receiver of the same and then of the opposite sex. This time, however, receivers had the power to reject the amount offered. If so, both proposer and receiver would gain nothing; if not, then the money would be distributed as proposed by the sender.

Contrary to the way in which the dictator game was played, proposers in the ultimatum game did not physically place the allocated amount in the recipient's envelope, but they wrote the amount they wished to send to the recipient on a blank "check". After receiving the check (the proposer's offer), the recipient was asked to indicate on the same check whether she or he agreed or not. If the offer was rejected, recipients were asked to write the minimum amount they would have accepted.¹² The recipient's decision was then communicated to the proposer, and the payouts were made accordingly. Neither proposers nor receivers were aware of who they were playing with. The summary of the donations in the ultimatum game is shown in Table B1 in the Appendix B. Illustrating the

¹² An image of the check is shown in Figure A2 in the Appendix A.

role of the credible threat incorporated in the design of the game, we observe higher average values of the donations in the ultimatum than in the dictator game.

4.3. The survey

All participants were administered a short questionnaire that follows the Tanzanian Demographic and Health (DHS) survey module on violence, and in addition contains basic demographic questions. Men and women had slightly different questionnaires, reflecting the likely differences in the experience of domestic violence.

The violence module in the women's questionnaire contains five indicator variables for justification of violence against women, asking if violence is justified in specific everyday situations in life, such as the wife going out without telling the husband about it, the wife neglecting the children, the wife arguing with the husband, the wife refusing to have sex with the husband, or burning the food.¹³

The violence module in the men's questionnaire asks whether they have committed violence against women without enquiring about specific types of violent events. The questions on the reasons for justifying violence are the same as in the women's questionnaire.

The survey was administered in person in a way that secured that other participants could not see other respondent's answers. Participants who could read and write filled-in the questionnaire themselves with occasional clarifications of the survey team, while the illiterate participants were individually interviewed face-to-face by qualified enumerators.¹⁴

Table B1 in the Appendix B shows summary statistics for the main participant demographic characteristics, such as age, schooling, household size, marital status and

¹³ In addition, the module enquires about nine indicator variables for the experience of violence, which take value one if the spouse has ever pushed, shaken or thrown something at the respondent; slapped; punched with fist or something harmful; kicked or dragged; tried to strangle or burn; physically forced sex when not wanted; physically forced other sexual acts when not wanted; twisted woman's arm or pulled her hair or threatened her with any weapon.

¹⁴ The enumerators were employed as research assistants at University of Dar es Salaam and had experience with face-to-face interviews.

employment status. It also shows the average rates of the acceptance of violence and the average values of the violence justification index, which are, as in Leyaro et al. (2017), significantly higher among men in the lake than in the coastal region (t-test = 1.68, p = 0.047).

Also, as indicated by the balance tests for key control variables in Table B2 in the Appendix, men from the coastal region tend to have a larger household size (measured by the number of household members) and are more likely than women to have some sort of income earning activity. There are no particular differences in terms of age, school attendance and marriage rates (indicated by having a marriage certificate). Men and women from the lake region do not show significant differences in these characteristics.

5. Estimation strategy and *egalitarian* indices

We compare individuals in sea-fishing and lake-fishing societies in terms of their degree of altruism towards men and women, and we use the differences that we find to ultimately study individual differences in attitudes towards violence against women.

In any of the administered games, the level of donation from a woman to a man or from a man to a woman is likely to be affected by social norms and a range of unobservable individual characteristics. For example, poor individuals who play as senders may tend to allocate little to the receivers, even though they may be altruistic or egalitarian. In order to produce accurate measure of the individual degree of egalitarianism towards men and women, or an *egalitarian index*, we then check whether the level of donations are equal to build an indicator of the propensity of each sender to make equal donations across genders.

In practical terms, conditional on the level of donations to both men and women, we interpret the propensity of an equal allocation as an indicator of equality towards the other gender, or *gender altruism*.

To examine the impact of gender altruism on attitudes towards violence against women, we estimate two specifications. First, to determine whether equality norms towards other

gender correlate with attitudes towards gender-based violence, we apply ordinary least squares (OLS), which is specified as follows:

$$y_i = \alpha + \beta E_i + \gamma X_i + e_i \quad (1)$$

where y_i is the outcome of interest for individual i . In the first case, the outcome of interest is a dummy variable for whether any type of violence is accepted by the respondent (that is, it is a variable that takes the value 1 if the respondent acknowledged agreeing with at least one of the five types of violence justification described in the previous section). In the second case, y_i is a violence justification index, or a variable that takes a value between 0 and 5 depending on the number of different causes of domestic violence the respondent indicated as justifiable in the survey.

E_i denotes the equality index, which (i) takes the value 1 if senders shared the endowment equally between the receivers of the same and the opposite sex (and the value 0 otherwise); and (ii) is generated separately for each of the three games.

We estimate equation (1) separately for each of the three indices generated from each game. Assuming that sea-fishing societies have a relatively more equal sexual division of labor and a more gender-equal allocation of activities related to the basic economy of the household than lake-fishing societies, the theory in Section 2 predicts a higher levels of gender altruism in the sea-fishing villages. If egalitarian attitudes towards men and women contribute to shaping attitudes towards violence against women, we should also observe lower levels of acceptance of violence against women in sea-fishing societies.

Randomization in the selection of participants and the allocation of tasks in the games reduces model dependence. However, in order to improve precision (and to ameliorate concerns about the presence of relevant unobservable correlates of both egalitarian and non-violent norms), we also present regressions with controls. Based on the summary statistics and the balance tests presented in Tables B1-B3 in the Appendix B, we select age, gender and whether the respondent was working or not at the time the game was implemented as controls for the X_i vector. Our richest specifications also include village

fixed effects. As a baseline in all estimations, we control for the amount each participant sent to women and to men respectively.

Despite the process of randomization and of our efforts to add controls for observable and unobservable covariates, the results from the equation (1) cannot be given a causal interpretation because of remaining concerns of endogeneity due to reverse causality. For example, it can well be the case that villages with strong norms against domestic violence also promote norms for pro-sociality or generosity that drive individual attitudes. To address this concern, we propose a two-stage least squares (2SLS) estimator where the geographical location of the village serves as the instrument for the prevalence of gender altruistic norms. Based on Leyaro et al. (2017), we expect that villages located by the Indian Ocean should have relatively stronger norms for gender equality, because of the tendency of these type of societies to solve the substance problem with a relatively more egalitarian sexual division of labor at home, and that, conditional on covariates, the geographical location of villages provides a useful source of exogenous variation for the presence of gender altruism. In that case, the first-stage of this instrumental variable (IV) strategy would be:

$$E = \alpha' + \beta' S_i + \gamma' X_i + \varepsilon_i \quad (2)$$

where S_i is an indicator variable that takes the value 1 if a village is located by the ocean, and the value 0 if it is located by the lake.

6. Results

6.1. OLS

Tables 1 to 3 present the OLS results for the three equality indices. Table 1 shows the results for the equality index generated from the dictator game. The dependent variable in columns (1)-(3) is an indicator that takes the value 1 if any type of violence is justified by the individual (labeled as *Violence Acceptance*), while in columns (4)-(6) it is a count of the justification of violence against women that involves (a) pushing, shaking or throwing something, (b) slapping, (c) twisting her arm or pulling her hair, (d) punching with fist or something harmful, or (e) kicking or dragging her. This second index is labeled *Violence Justification Index*.

The main regressor in Table 1 is an indicator variable of whether an individual's donations in the dictator game were equal for men and for women. Columns (1) and (4) report results with the baseline controls for all specifications, which are the amounts sent to men and women in each game. Columns (2) and (5) add controls for sex, age, age squared and working status. Columns (3) and (6) include also village fixed effects.

[Table 1 here]

The results in Table 1 show a negative correlation between the equality index generated from the dictator game, and the indicator of acceptance of violence against women. Participants sharing the endowment equally between their respective male and the female recipients are 21 percentage points more likely to reject any justification of gender-based violence. The results are significant at the 5% level. The inclusion of controls reduces the magnitude and significance of the coefficient, but it remains negative and significant at the 10% level. The main coefficient becomes more noisily estimated with the inclusion of village fixed effects and loses its significance at the 10% level, but it remains negative, which indicates that more equality relates to lower acceptance of violence even when the comparison is made among individuals within each village. Another important finding from the regressions is that in almost all specifications, higher donations towards women are also significantly related to lower acceptance of violence, and the coefficients on the fixed effects also indicate that the level of violence acceptance is lower on villages located by the Indian Ocean as compared to those located by the Lake Victoria.

Concerning the violence justification index, all three coefficients are negative and significant. In particular, column (6) indicates that participants sharing their money equally score 0.54 less on the violence justification index (conditional on the baseline controls, additional individual controls, and village fixed effects), indicating a lower acceptance for gender-based violence among individuals with stronger between-gender equality score in the dictator game.

Table 2 presents results for a similar OLS regression, but this time using the equality index generated from the ultimatum game. In terms of general acceptance of violence, more egalitarian respondents are 26 percentage points less likely to accept any of the five justifications for gender-based violence presented in the survey. This result is robust to the inclusion of controls and village fixed effects, and it is significant at the 1% level. A negative and significant correlation is also visible between the ultimatum game equality index and the violence justification index. In fact, egalitarian participants score 0.51 points lower on the violence justification index. This result is also robust to the inclusion of controls and village fixed effects, and significant at the 10% level. Although the coefficients in models (4) and (5) are not precisely estimated, they still show a negative correlation between the two indices.

[Table 2 here]

Table 3 shows OLS results for a regression using the *theoretical* dictator game equality index as the main regressor. Although the index is not significantly correlated with the acceptance of violence against women, all coefficients are negative, indicating, as expected, that those sharing equally their hypothetical endowment are also less likely to accept gender-based violence. Recalling that the theoretical dictator game is administered as a hypothetical answer to the question of differential donations between men and women in the survey questionnaire, this result may be a reflection that the main variable is contaminated with measurement error. It worth noting here that, similar as above, amounts sent to women also correlate negatively and significantly with perceptions of violence.

[Table 3 here]

Tables 1 to 3 support our main hypothesis, showing that an egalitarian sharing of the donation levels between men and women in behavioral games are related to less acceptance of violence against women. As argued above, despite randomization and the inclusion of controls, we cannot give the results in Tables 1-3 a causal interpretation immediately, because of concerns of endogeneity due to reverse causality. In the next

section, we present the results of the IV/2SLS identification strategy described in Section 5.

6.2. IV/2SLS

Panel A in Table 4 shows results for 2SLS estimations run using an indicator variable for villages located by the Indian Ocean as the instrument for the equality indices.

[Table 4: Panel A & B here]

The results show that a coastal location is a significant predictor of the equality indices, especially in the dictator game and the theoretical dictator games (the coastal location indicator is a noisier predictor of the equality index in the ultimatum game, but the association between a geographical location by the sea and the level of gender altruism remains positive). The first stage regressions in columns (1) and (5) in Panel A in Table 4 show significant results at 5% and 10% level respectively. In particular, seashore location increases the likelihood of equal donations between men and women by around 21 percentage points in the dictator game and by 18 percentage points in the theoretical dictator game.

With these results estimated in the first stage, we are able to identify a negative impact of the equality indices on the indices of acceptance of violence against women. The result is robust to the inclusion of controls and significant at the 10% level. Given that the first stage regressions reveal that the proposed instrument is weak, we check whether we can confirm significance in the second stage by applying the method proposed by Moreira (2003). The confidence intervals and p-values of the Moreira (2003) test, which are robust to the presence of potentially weak instruments, are reported in Panel A in Table 4 and indicate that the equality index coefficient predicted by seashore location is statistically significant at the 2% level in all cases.

Panel B in Table 4 shows similar results using the violence justification index as the dependent variable. The coefficients in the second stage remain negative and significant at the 10% level after correcting for the presence of potentially weak instruments.

7. Conclusion

In this paper, we present an empirical test of the idea that more egalitarian gender norms lead to lower tolerance of violence against women.

To elicit individual measures of the level of egalitarian attitudes towards men and women, we implemented simple adaptations of the dictator and the ultimatum games, and played these games in an experimental setting in six fishing villages in rural Tanzania, three on Lake Victoria and three on the Indian Ocean. Based on Leyaro et al. (2017), we conjecture that sea-fishing villages have the potential to sustain a more egalitarian and a less gender-violent environment.

To construct measures of the individual degree of egalitarian attitudes towards men and women, we build indices that reflect equal donations to men and women in the different games. We propose that, conditional on the level of individual donations to women and to men, these indices represent valid measures of *gender altruism*.

Our results reveal higher levels of gender altruism in sea-fishing societies, and also a higher tendency for individuals in these villages to justify less violence against women. This result is in general consistent with Henrich et al.'s (2006) evidence of differences in altruistic behavior across small societies in different parts of the world, and in particular supportive of the idea that more egalitarian attitudes among women and men are associated with less violence against women. The results are also robust to the inclusion of individual characteristics, and to making individual comparisons within villages.

In an effort to address concerns about endogeneity due to reverse causality, we exploit differences in the geographical location of the different villages, and present IV/2SLS results that suggest that more egalitarian gender norms lead to lower justification of gender violence.

Interpreting these findings in light of the hypothesis in Leyaro et al. (2017), these results indicate that local cultures that support equality in the sexual division of labor in the household (more prevalent across sea- than lake-fishing societies), are able to shape local cultures that promote gender equality and altruism, and that they even may have an

important role in sustaining norms that help to reduce the justification of violence against women.

Our results are encouraging to explore further norms of cooperation and trust that may be complementary to norms of altruism, and which may help us to understand better how to contribute to the abandonment of violence against women.

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TABLES AND FIGURES

Table 1

*Acceptance of violence against women and attitudes towards gender equality
(OLS, Dictator Game)*

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. var.:	Violence Accepted			Violence Justification Index		
Equality index (DG)	-0.21** (0.09)	-0.17* (0.10)	-0.12 (0.11)	-0.70*** (0.26)	-0.62** (0.28)	-0.54* (0.30)
Sent to women	-0.07*** (0.02)	-0.09** (0.03)	-0.08** (0.03)	-0.30*** (0.08)	-0.35*** (0.12)	-0.34*** (0.12)
Sent to men	0.07*** (0.03)	0.07** (0.03)	0.05 (0.04)	0.16* (0.10)	0.21** (0.09)	0.18* (0.10)
Age		0.02 (0.02)	0.01 (0.02)		0.00 (0.07)	0.01 (0.08)
Age squared		-0.00 (0.00)	-0.00 (0.00)		0.00 (0.00)	0.00 (0.00)
Sex		-0.03 (0.13)	-0.01 (0.13)		0.04 (0.43)	0.09 (0.43)
1(Working)		0.07 (0.14)	0.05 (0.14)		0.19 (0.43)	0.17 (0.42)
1(Village S1)			-0.35* (0.20)			-0.75 (0.51)
1(Village S2)			-0.21 (0.17)			-0.55 (0.47)
1(Village S3)			-0.35** (0.15)			-0.43 (0.47)
1(Village L4)			-0.17 (0.18)			-0.10 (0.54)
1(Village L5)			-0.16 (0.15)			-0.49 (0.41)
Constant	0.73*** (0.13)	0.30 (0.51)	0.51 (0.53)	2.26*** (0.41)	1.36 (1.82)	1.49 (1.98)
Observations	120	100	100	120	100	100
R-squared	0.12	0.15	0.20	0.16	0.24	0.27

Notes: Robust standard errors in parentheses. Significance levels for the t-test: * p<0.10, ** p<0.05, *** p<0.01. The average value of the Violence Justification Index is 1.48.

Table 2*Violence justification indices and attitudes towards gender equality
(OLS, Ultimatum Game)*

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. var.:	Violence Accepted			Violence Justification Index		
Equality index (UG)	-0.16* (0.09)	-0.22** (0.09)	-0.26*** (0.09)	-0.28 (0.26)	-0.42 (0.27)	-0.51* (0.29)
Sent to women	-0.08*** (0.02)	-0.10*** (0.04)	-0.09*** (0.03)	-0.31*** (0.08)	-0.36*** (0.11)	-0.35*** (0.12)
Sent to men	0.07*** (0.03)	0.07** (0.03)	0.06 (0.04)	0.16* (0.10)	0.21** (0.09)	0.17* (0.10)
Age		0.02 (0.02)	0.02 (0.02)		0.03 (0.07)	0.03 (0.08)
Age squared		-0.00 (0.00)	-0.00 (0.00)		0.00 (0.00)	0.00 (0.00)
Sex		0.00 (0.13)	0.03 (0.13)		0.14 (0.41)	0.20 (0.41)
1(Working)		0.05 (0.13)	0.02 (0.13)		0.16 (0.42)	0.11 (0.40)
1(Village S1)			-0.43** (0.18)			-1.01** (0.49)
1(Village S2)			-0.18 (0.16)			-0.64 (0.44)
1(Village S3)			-0.40*** (0.14)			-0.59 (0.44)
1(Village L4)			-0.18 (0.17)			-0.23 (0.52)
1(Village L5)			-0.25 (0.16)			-0.70 (0.43)
Constant	0.75*** (0.13)	0.22 (0.50)	0.51 (0.53)	2.16*** (0.42)	0.81 (1.80)	1.20 (1.99)
Observations	120	100	100	120	100	100
R-squared	0.10	0.17	0.24	0.12	0.22	0.27

Notes: Robust standard errors in parentheses. Significance levels for the t-test: * p<0.10, ** p<0.05, *** p<0.01. The average value of the Violence Justification Index is 1.48.

Table 3*Violence justification indices and attitudes towards gender equality*
(OLS, Theoretical Dictator Game)

	(1)	(2)	(3)	(4)	(5)	(6)
Dep. var.:	Violence Accepted			Violence Justification Index		
Equality index (TDG)	-0.13 (0.09)	-0.13 (0.10)	-0.13 (0.12)	-0.20 (0.28)	-0.32 (0.31)	-0.33 (0.36)
Sent to women	-0.07*** (0.02)	-0.09** (0.04)	-0.08** (0.04)	-0.30*** (0.08)	-0.34*** (0.12)	-0.33** (0.13)
Sent to men	0.08*** (0.03)	0.07** (0.03)	0.05 (0.04)	0.17* (0.10)	0.21** (0.10)	0.17 (0.10)
Age		0.01 (0.02)	0.01 (0.02)		0.01 (0.08)	0.02 (0.08)
Age squared		-0.00 (0.00)	-0.00 (0.00)		0.00 (0.00)	0.00 (0.00)
Sex		0.01 (0.13)	0.02 (0.13)		0.16 (0.41)	0.19 (0.42)
1(Working)		0.08 (0.14)	0.05 (0.14)		0.21 (0.43)	0.18 (0.42)
1(Village S1)			-0.41** (0.19)			-0.99* (0.50)
1(Village S2)			-0.20 (0.17)			-0.26 (0.52)
1(Village S3)			-0.21 (0.17)			-0.66 (0.46)
1(Village L4)			-0.35** (0.15)			-0.49 (0.49)
1(Village L5)			-0.18 (0.15)			-0.58 (0.40)
Constant	0.72*** (0.13)	0.27 (0.52)	0.53 (0.55)	2.08*** (0.44)	1.00 (1.88)	1.32 (2.03)
Observations	120	100	100	120	100	100
R-squared	0.09	0.14	0.20	0.12	0.22	0.25

Notes: Robust standard errors in parentheses. Significance levels for the t-test: * p<0.10, ** p<0.05, *** p<0.01.

Table 4: Panel A

Violence against women and attitudes towards gender equality
(2SLS, DG UG TDG Games)

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Dictator Game</i>		<i>Ultimatum Game</i>		<i>Theoretical Dictator</i>	
	1 st stage	2 nd stage	1 st stage	2 nd stage	1 st stage	2 nd stage
Dep. var.:	Equality Index	Violence Accepted	Equality Index	Violence Accepted	Equality Index	Violence Accepted
1(Sea)	0.207** (0.10)		0.120 (0.10)		0.180* (0.09)	
Equality Index		-1.057* (0.62)		-1.817 (1.45)		-1.216 (0.75)
Sent to W	-0.0390 (0.03)	-0.124** (-2.36)	-0.0705* (0.04)	-0.211* (0.12)	-0.0476 (0.03)	-0.141* (0.07)
Sent to M	0.0318 (0.03)	0.0930** (0.04)	0.0394 (0.03)	0.131* (0.08)	0.0610* (0.03)	0.134* (0.07)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	100	100	100	100	100	100
1 st stage F-stat	4.439		1.457		3.713	
Moreira conf. interval		[-14.3, -17]		(-inf, -.3] U [1.9, +inf)		(-inf, -.2] U [53.1, +inf)
Moreira p-val.		0.0207		0.0207		0.0207

Notes: Controls: age, age squared, sex, working status. z statistics in parentheses. Significance levels for the z-test: * p<0.10, ** p<0.05, *** p<0.01.

Table 4: Panel B

Violence against women and attitudes towards gender equality
(2SLS, DG UG TDG Games)

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>Dictator Game</i>		<i>Ultimatum Game</i>		<i>Theoretical Dictator</i>	
	1 st stage	2 nd stage	1 st stage	2 nd stage	1 st stage	2 nd stage
Dep. var.:	Equality Index	Violence Justification Index	Equality Index	Violence Justification Index	Equality Index	Violence Justification Index
1(Sea)	0.207** (0.10)		0.120 (0.10)		0.180* (0.09)	
Equality Index		-2.302 (1.53)		-3.956 (3.56)		-2.647 (1.92)
Sent to W	-0.0390 (0.03)	-0.420*** (0.15)	-0.0705* (0.04)	-0.609* (0.31)	-0.0476 (0.03)	-0.457** (0.20)
Sent to M	0.0318 (0.03)	0.263** (0.11)	0.0394 (0.03)	0.346* (0.20)	0.0610* (0.03)	0.352** (0.17)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	100	100	100	100	100	100
1 st stage F-stat	4.439		1.457		3.713	
Moreira conf. interval		[-28.55, 0.51]		(-inf,1.842]U [1.846,+inf)		(-inf, .5] U [113.1,+inf)
Moreira p-val.		0.0928		0.0928		0.0928

Notes: Controls: age, age squared, sex, working status. z statistics in parentheses. Significance levels for the z-test: * p<0.10, ** p<0.05, *** p<0.01.

Figure 1

Field setting

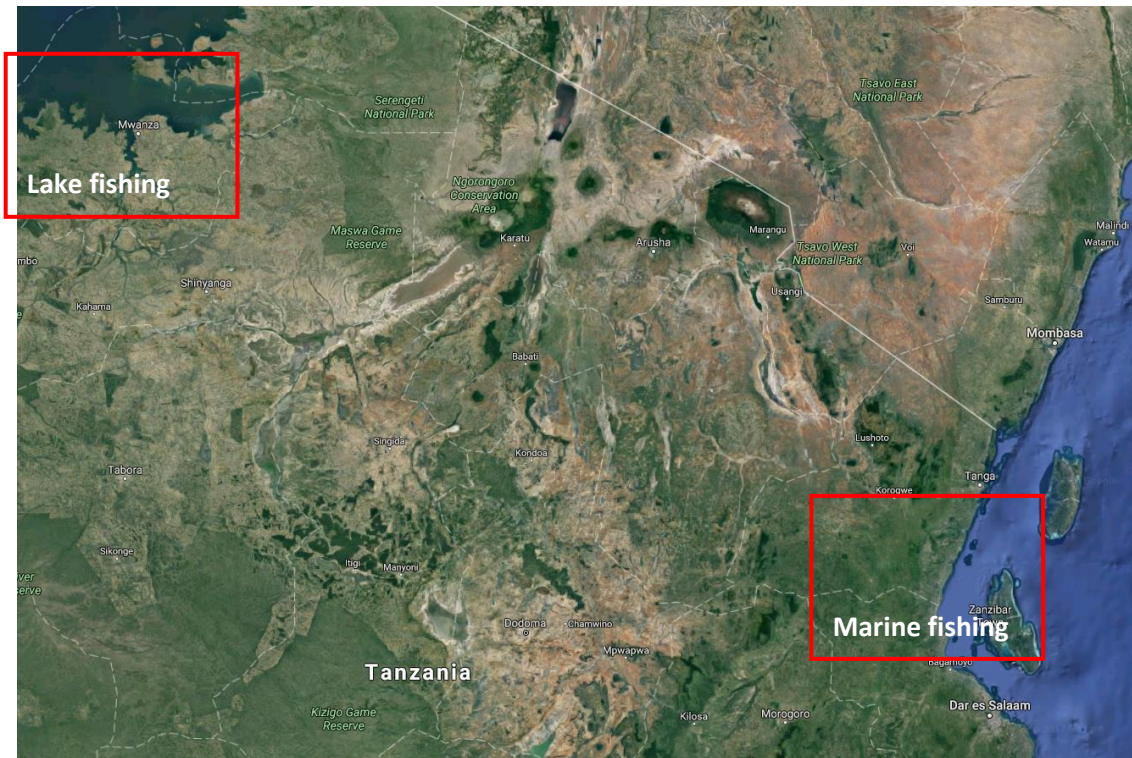
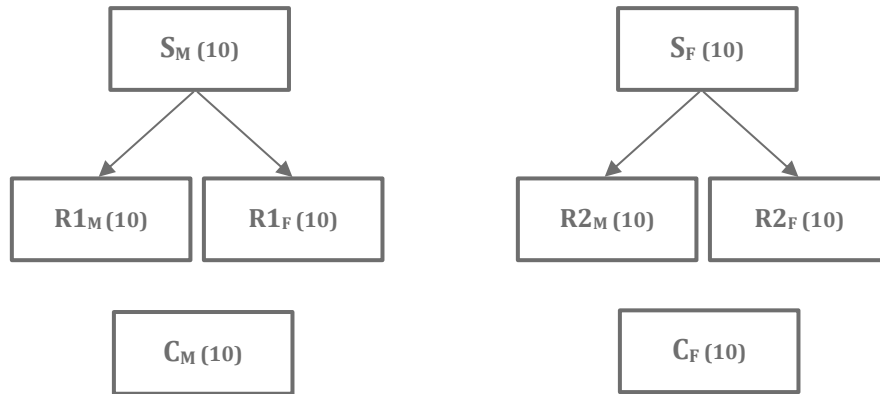


Figure 2

Experimental design: Relationship between participants and their number in each village



Note: S denotes sender and R denotes recipient in the dictator and the ultimatum game. C denotes the control group, that is, those not participating in any game. M denotes male, while F denotes female participants. The number in parentheses is the total number of participants in each category.

APPENDIX A

Experimental protocol

1. Invite 40 men and 40 women per village to participate in the game.
2. Make a list of participants with their names and phone numbers in order in which they arrive to the location.
3. Ask men to draw from the box a paper with a number from 1 to 40.
4. Ask women to draw from the box a paper with a number from 1 to 40.
5. For both group 1 and group 2, men and women are divided into subgroups (A, B, C, D or E) depending on the number they have drawn. This will create two groups and five subgroups, as shown in Table 1. Table 1 shows how the players are paired. In each group, A1 plays with B11 and C21; A2 plays with B12 and C22, etc. The participants do not know this.

Table 1: Groups and player numbers (each row shows how A and B and A and C are paired)

Group 1						Group 2				
M Player	W Player	M Player	W Player	M Contro	W Contro	W Player	W Player	M Player	M Contro	W Contro
A1	A2	B1	C1	l D1	l E1	A2	B2	C2	l D2	l E2
1	1	11	21	31	36	1	11	21	36	31
2	2	12	22	32	37	2	12	22	37	32
3	3	13	23	33	38	3	13	23	38	33
4	4	14	24	34	39	4	14	24	39	34
5	5	15	25	35	40	5	15	25	40	35
6	6	16	26			6	16	26		
7	7	17	27			7	17	27		
8	8	18	28			8	18	28		
9	9	19	29			9	19	29		
10	10	20	30			10	20	30		

6. The instruction talk should explain that there will be 2 or 3 games, depending on the lottery, and an interview after the last game. There will also be some who do not play any game (control group, players D and E). They only have to fill in the questionnaire.
7. The instruction will explain how to fill in the questionnaire, especially questions in which we need an answer for several sub-questions.
8. Explain that the illiterate will have a face-to-face interview and there could be some waiting.
9. The control group participants (first 4 players D and E) watch the video and get the questionnaire after watching the video. The remaining control group participants get the questionnaires immediately after the numbers lottery, and fill it in immediately. Before they leave, questionnaires are checked for completion and they receive the show-up fee. All the rest (players A, B and C) get the questionnaire after the last game.
10. The instructor demonstrates how the dictator and the ultimatum games are played. Explain that all players A are paired randomly with both a man and a woman from the village. Also

that if player A is a man, then player B is also a man, and player C is a woman. If player A is a woman, then player B is also a woman, and player C is a man. Explain that other than that, no one will know who is matched with whom.

11. To check if the participants understood the game, they are randomly tested by the experimenter. Experimenter gives an example and randomly selects a few participants to give the answer.
12. Subgroups are taken to separate locations to assure anonymity (players A are separated from players B and C). Players A1 stand with D1 and D2. Players A2 stand with E1 and E2. Players B1 stand with C2. Players C1 stand with B2.
13. **Game 1:** Dictator. Player A receives 4 envelopes, 2 of them with 10,000 TZS in notes of 1,000 TZS, and 2 empty envelopes. Player A decides how to share 10,000 TZS with player B, and how to share 10,000 TZS with player C, depositing the amounts in each empty envelope marked B and C. Player A puts each envelope in the corresponding B or C box.
NB: All amounts left for players B and C should be recorded in B and C rooms, before they are given to players B and C (who get the envelopes only after the questionnaire has been completed).
14. **Game 2:** Ultimatum. Player A receives a large envelope with two small empty envelopes and two blank checks. Player A writes down the amounts for players B and C on the checks. Player B and player C then decide to accept or reject the offer, and mark that on the check. Player A gets the check back (to be cashed in at the end) and a questionnaire to fill in. Players B and C get a check stating the amount to be cashed in and a questionnaire to be filled in.
15. Everybody plays anonymously – no several persons in the ‘private’ space.
16. Video. The first 3 players A, B and C in both groups watch video 1 (on violence against women) and the next 3 players A, B and C in both groups watch video 2 (on violence against albinos). The first 2 players D and E watch video 1 and the next 2 players D and E watch video 2.
17. The rest of players start filling in the questionnaire. After watching the video, the remaining players fill in the questionnaire.
18. It is important that participants do not talk with each other while they are filling in the questionnaire (for that, sit participants sufficiently apart from each other, which can also help to avoid peaking).
19. Before giving the participation fee, check whether all the questionnaire is filled in, and record the number of the participant who has received the fee on the participation list.
20. Give the envelopes from the dictator game, and cash the checks from the ultimatum game.

Instructions for the experiment¹⁵

Instructions for Group 1

Activity 1 Instructions

Task: Decide how much money to share with a random woman and a man from the village.

1. You have been paired with two persons from the village. One of the persons is female and the other is male. It is not known whom you are paired with. Imagine any woman or any man from your village. Just as you don't know who they are, your identity will also not be known to them.
2. You have been allocated two times 10,000 shillings to share with a woman and a man you are paired with.
3. Open the first large envelope you have received today. In there you will find four small envelopes, two of which contain 10 one thousand shilling bills and two other are empty.
4. Decide how many bills (if any) of the 10,000 you will send to the man and put that amount in the empty envelope marked B.
5. Decide how many bills (if any) of the 10,000 you will send to the woman and put that amount in the empty envelope marked C.
6. The rest of the money is yours to take from the experiment.
7. Place the envelopes in appropriate boxes marked B and C.
8. Go back to your seat and await further instructions from the experimenter.
9. After all players have deposited the envelopes in the boxes B and C, the assistant will record the number on the envelope and the amount of money in each envelope, reseal the envelopes and take them to the players you have been paired with.

Activity 2 Instructions

Task: Decide how much money to share with a random woman and a man from the village who then decide whether to accept or decline the proposed amount. If they accept, the money is shared as proposed. If they reject, nobody gets any payment.

1. You have been paired with two persons from the village. One of the persons is female and the other is male. Their identity is not known to you and your identity is not known to them. They only know your sex, i.e. whether you are a man or a woman.
2. You have been allocated two times 10,000 shillings to share with a woman and a man you are paired with.
3. Open the second large envelope you have received today. In there you will find two small envelopes and two checks which you need to fill in.
4. Decide how many bills (if any) of the 10,000 you will send to the man and write that amount on the check B.
5. Decide how many bills (if any) of the 10,000 you will send to the woman and write that amount on the check C.

¹⁵ We show, as an example, the instructions for players from one of the groups. The instructions for the second group follow a similar pattern.

6. The assistant will take the checks to the persons you have been paired with and inform you of their decision to accept or reject your proposed amount.
7. If they accept your proposal, the money is shared as proposed. If they reject, nobody gets any payment. You will get paid after filling in the questionnaire according to the amounts written on the check.
8. Go back to your seat and await further instructions from the experimenter.

Figure A1

Hypothetical dictator game from the questionnaire

a. Decide how you would share 10,000 shilling with this man



1. Your share _____ TZS
2. His share _____ TZS

b. Decide how you would share 10,000 shilling with this woman



1. Your share _____ TZS
2. Her share _____ TZS

Figure A2

The check used in the ultimatum game

<p>Man <input style="width: 30px; height: 15px;" type="text"/></p> <p>Woman <input style="width: 30px; height: 15px;" type="text"/></p>	<p>Man <input style="width: 30px; height: 15px;" type="text"/></p> <p>Woman <input style="width: 30px; height: 15px;" type="text"/></p> <p style="text-align: right; margin-right: 20px;"><input style="width: 150px; height: 25px;" type="text"/> TZS</p> <p>Accept <input style="width: 30px; height: 15px;" type="text"/></p> <p>Reject <input style="width: 30px; height: 15px;" type="text"/></p> <p>What (in general) is the minimum amount you will accept? _____ TZS</p>
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APPENDIX B

Table B1

Summary statistics

WOMEN	<i>Sea</i>					<i>Lake</i>				
	Mean	SD	Min	Max	Obs.	Mean	SD	Min	Max	Obs.
Equality index DG	0.47	0.51	0	1	30	0.27	0.45	0	1	30
Equality index UG	0.60	0.50	0	1	30	0.63	0.49	0	1	30
Equality index TD	0.77	0.43	0	1	30	0.67	0.48	0	1	30
Sent to W ('000) DG	2.73	1.66	0	5	30	2.20	1.42	1	5	30
Sent to M ('000) DG	3.13	1.68	0	5	30	3.47	1.91	0	7	30
Sent to W ('000) UG	5.97	1.30	5	10	30	5.66	1.43	3	10	30
Sent to M ('000) UG	5.43	0.77	5	7	30	6.23	1.41	5	9	30
Sent to W ('000) TD	4.32	1.47	0	5	28	4.50	1.45	0	6	29
Sent to M ('000) TD	3.96	1.54	0	5	28	3.88	1.89	0	7	30
Violence Acceptance	0.67	0.48	0	1	30	0.83	0.38	0	1	30
Violence Justification	1.73	1.72	0	5	30	2.03	1.40	0	5	30
Age	38.92	13.56	20	70	25	35.45	11.19	21	60	29
School attend.	0.93	0.26	0	1	29	0.83	0.38	0	1	30
HH size	5.07	1.72	2	9	30	5.60	2.88	0	13	30
Married	0.23	0.43	0	1	30	0.23	0.43	0	1	30
Working	0.63	0.49	0	1	27	0.82	0.39	0	1	22

MEN	<i>Sea</i>					<i>Lake</i>				
	Mean	SD	Min	Max	Obs.	Mean	SD	Min	Max	Obs.
Equality index DG	0.50	0.51	0	1	30	0.30	0.47	0	1	30
Equality index UG	0.57	0.50	0	1	30	0.37	0.49	0	1	30
Equality index TD	0.63	0.49	0	1	30	0.40	0.50	0	1	30
Sent to W ('000) DG	4.47	1.72	1	9	30	4.67	1.40	1	8	30
Sent to M ('000) DG	3.53	1.43	0	5	30	3.20	1.35	0	5	30
Sent to W ('000) UG	5.15	1.20	3	8	30	4.90	1.45	1	8	30
Sent to M ('000) UG	5.53	0.94	4	8	30	6.00	1.20	4	8	30
Sent to W ('000) TD	4.78	1.22	2	8	30	4.86	1.36	0	7	29
Sent to M ('000) TD	4.73	1.17	2	8	30	4.28	1.46	2	7	29
Violence Acceptance	0.43	0.50	0	1	30	0.63	0.49	0	1	30
Violence Justification	0.90	1.27	0	4	30	1.27	1.41	0	5	30
Age	35.68	11.57	18	63	28	35.34	10.33	20	58	29
School attend.	0.97	0.67	0	4	30	0.93	0.26	0	1	29
HH size	4.25	2.01	1	9	28	5.00	2.51	1	10	28
Married	0.27	0.45	0	1	30	0.30	0.47	0	1	30
Working	0.90	0.31	0	1	30	0.87	0.35	0	1	30

Notes: DG denotes dictator game, UG denotes ultimatum game and TD denotes theoretical dictator game.

Table B2:*Balance tests for key control variables, by gender*

<i>Sea</i>	Number	<i>Men</i>	<i>Women</i>	Difference	t-value
Age	53	35.68	38.92	-3.24	-0.94
School attendance	59	0.87	0.93	-0.06	-0.81
Household members	58	4.25	5.07	-0.82	-1.67
Married	60	0.27	0.23	0.03	0.29
Working	57	0.90	0.63	0.27	2.52

<i>Lake</i>	Number	<i>Men</i>	<i>Women</i>	Difference	t-value
Age	58	35.34	35.45	-0.10	-0.04
School attendance	59	0.93	0.83	0.10	1.15
Household members	58	5.00	5.60	-0.60	-0.84
Married	60	0.30	0.23	0.07	0.58
Working	52	0.87	0.82	0.05	0.47

Table B3:*Balance tests for key control variables, by location*

<i>Men</i>	Number	<i>Sea</i>	<i>Lake</i>	Difference	t-value
Age	57	35.68	35.34	0.33	0.11
School attendance	59	0.87	0.93	-0.06	-0.81
Household members	56	4.25	5.00	-0.75	-1.23
Married	60	0.27	0.30	-0.03	-0.28
Working	60	0.90	0.87	0.03	0.40

<i>Women</i>	Number	<i>Sea</i>	<i>Lake</i>	Difference	t-value
Age	54	38.92	35.45	3.47	1.03
School attendance	59	0.93	0.83	0.10	1.15
Household members	60	5.07	5.60	-0.53	-0.87
Married	60	0.23	0.23	0.00	0.00
Working	49	0.63	0.82	-0.19	-1.45