

# Chapter 14

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## Gifts or Entitlements: The Influence of Property Rights and Institutions for Third-Party Sanctioning on Behavior in Three Experimental Economic Games

Carolyn K. Lesorogol

Social norms and their enforcement play an important role in maintaining social order, particularly in small-scale societies where the reach of the central state is limited. Although norms are thus functional in this sense, it is less clear how and why individuals act to enforce norms, particularly when enforcement entails costs to the enforcer while the gains from enforcement extend to all members of the group. A number of scholars have posited the presence of a human trait (perhaps with a genetic component), termed “strong reciprocity” or “altruistic punishment,” to explain the presence of costly punishment (or cooperative) behavior (Fehr and Fischbacher 2003; Fehr, Fischbacher, and Gächter 2002; Gintis 2000; Gintis et al. 2008). The evidence from experimental economic games that has been offered in support of these arguments demonstrates that individuals behave altruistically in laboratory settings, where concerns about reputation and future interactions do not apply.

This chapter reports on field experiments conducted in Samburu District, Kenya, in 2003. Players in these experiments demonstrated concerns for fairness as well as costly sanctioning behavior in the dictator game (DG), the strategy method ultimatum game (UG), and the third-party punishment game (TPG). Thus, they tended to support the notion of strong reciprocity. However, examination of the patterns of offers and sanctions suggests that these may be related to how players interpreted ownership in the games and whether they viewed offers as gifts or entitlements. Furthermore, differences in the patterns of punishment in the UG and TPG may also be explained by Samburu notions of social sanctioning and the role of third- versus second-party enforcement of norms. Thus, although it may be the case that a general trait for altruistic punishment and cooperation exists, these results suggest that extant social norms and local institutions influence play even in abstract games under carefully controlled field conditions. It may be difficult to control for reputation effects and expectations about future interactions, but the fact that games may cue particular social institutions provides insight into how these institutions function in the real world.

## ETHNOGRAPHIC BACKGROUND: SAMBURU LIVESTOCK PRODUCTION, COOPERATION, AND INVOLVEMENT IN MARKETS

The Samburu are Nilotic-speaking pastoralists living in the north-central part of Kenya. They primarily herd cattle, sheep, and goats, although camels are becoming increasingly common in the district, partly as an adaptation to drought. Samburu are patrilineal and, in general, patrilocal. Settlements (nkangitie) normally consist of a man and his wife or wives and closely related households, especially agnatic kin. It is not unusual for affines or even friends from other clans to live together for a time in a settlement for a variety of reasons, including access to material support from better-off individuals.

The degree of mobility for Samburu depends largely on environmental conditions. Samburu District is physically divided between lowlands and highlands. The lowlands are quite arid (annual average rainfall is about 200 millimeters), with scrub bush vegetation, while the highlands are wetter (about 500 millimeters in average annual rainfall) and grasslands predominate. People are more mobile in the lowlands and may move their entire settlement several times a year, according to the availability of grazing and water resources. Highland Samburu are more sedentary and tend to move livestock seasonally while maintaining a more or less permanent home-base settlement. Samburu also move between the highlands and lowlands, especially during periods of drought or a prolonged dry season.

Regardless of the pattern of mobility, cooperation in herding is widespread. Households often combine herds on a daily basis, especially cattle, in order to share herding labor and achieve economies of scale. When livestock move to dry-season camps, they are accompanied by young men (Imurran, or warriors), and there is a greater level of cooperation among households than for daily herding. Cooperation extends beyond herding to other daily activities. For example, women share many domestic duties with co-wives and women from other households within their settlements and from neighboring settlements. Older women watch small children while firewood is collected by younger women, who, in exchange, bring back firewood for the older ones. If one woman is going to town to make purchases, other women will give her money and instructions on what they want her to buy, and she will deliver it to them, literally on her back. House-building is a major task for women, especially in the highlands, where houses are becoming larger and more substantial. Women cooperate in collecting building materials and in constructing the house itself. The woman receiving the help often reciprocates in kind and also provides tea or food and, more recently, sometimes cash payment.

Among Samburu, livestock are owned individually (although more than one individual may have rights in a single animal), but land is managed collectively. The Samburu system meets most of the criteria set forth by Elinor Ostrom (1990) for effective management of a common-pool resource: both rules on access and use and monitoring systems are in place, and graduated sanctions for violators are specified and enforced. This system is generally effective, but there is ongoing change to it, spurred recently by government efforts since the 1970s to adjudicate land. In the highlands, land adjudication has taken the form of granting title to land to groups of households residing in specified areas. In a few cases, title was granted to individuals, and in one community all resident households were given equal-sized parcels of land after a long dispute over ownership rights (Lesorogol 2003, 2008). The trend toward land adjudication and titling raises questions about the future of cooperative land management in this region.

Livestock remain the basis of subsistence and household wealth and income for most Samburu, but there is ample evidence of increasing diversification of the economic base (Holtzman 1996; Lesorogol 2008). Population growth, persistent drought, and reduced mobility have combined

to reduce per capita livestock holdings over the last fifty years. In response, many men have left the area in search of wage work in other parts of the country, notably as watchmen in the capital city, Nairobi. Women are also engaged in income-generating activities, especially petty trade (sugar, tea, soap, tobacco, alcohol) out of their homes and the sale of natural resources such as firewood, building poles, and charcoal. Some households have begun to cultivate crops, primarily maize and beans, for both home consumption and sale, particularly in higher-rainfall areas where agriculture is somewhat less risky (although data on yields indicate that risks are considerable, even in the best-suited places) (Republic of Kenya 2001).

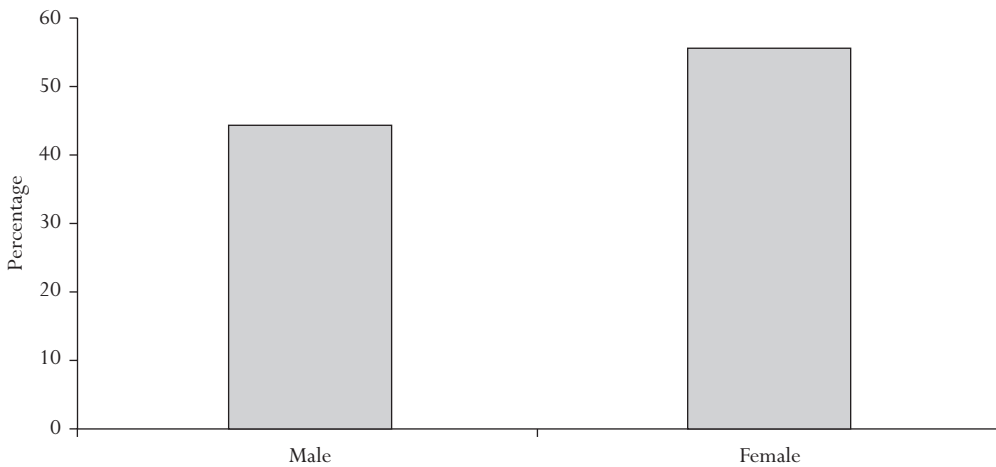
Along with these strategies, most Samburu sell some of their own livestock in local markets and use the cash to purchase food and other necessities and to pay for education and health services. Livestock trading is a popular pursuit, especially for younger men who are able to travel the long distances required to buy and sell livestock. Rapid market fluctuations make trading very risky, however, and accessing initial capital can be a challenge to many who would like to be engaged in trade. Clearly, Samburu people are increasingly reliant on markets, both local ones and more distant ones (for example, the capital city of Nairobi, four hundred kilometers away) for their livelihood. There is a gradient of involvement with markets that mimics the environmental divide between highlands and lowlands: people in the highlands are closer to markets and more engaged with them, while those in the lowlands are farther away from markets and appear to be less reliant on them (Straight 1997).

## THE STUDY COMMUNITY

Mbaringon (“rocky place”) is located in the highlands of Samburu District, about twenty-five kilometers from Maralal, the district capital. A smaller town, Kisima, is located on the western edge of Mbaringon. In the 1970s, Mbaringon became a group ranch, and today it has over six hundred members, representing virtually all males in the area, including many under the age of eighteen. In a network survey conducted as part of this study, just over 380 households were contacted. Average household size in Mbaringon was about 10 in a 2000–2001 survey, implying a population of about 3,800.<sup>1</sup> The group ranch covers an area of roughly seventy-five square kilometers. Mbaringon members of the group ranch have joint title to the land, and an elected committee is responsible for group ranch affairs. However, day-to-day livestock management remains at the discretion of individual herders in cooperation with the local council of elders, who regulate access to certain high-value resources, including a forest and permanent water springs. There are no fences or obvious boundaries around the group ranch. About thirty or forty individuals have built fences around small plots (less than an acre) where they sometimes grow crops or keep their young livestock, but these are the exception, not the norm.

## METHODS

The core package of games—the dictator game, the strategy method ultimatum game, and the third-party punishment game—was played in Mbaringon in 2003, according to the agreed-upon protocols of the cross-cultural project. The only deviation was in not holding postgame interviews following the TPG: additional games (the double-blind dictator game and the trust game) were played subsequent to the core package, and I did not want to contaminate the player pool by asking questions about the games already played. I had conducted games before in Mbaringon as part of another research project in 2001. However, none of the players in the 2003 round had played in 2001, the UG had not been played here before, and the TPG was played according to a different protocol. Given the time that had elapsed and the differences

FIGURE 14.1 *Sex of Mbaringon Participants in Games*

Source: Author's compilation based on author data.

in players and game details, I do not believe that contamination or collusion was present in Mbaringon.

The games were conducted at the local primary school, where several rooms and a shady outdoor area were made available in order to separate the players from each other as necessary. Twelve research assistants were on hand to conduct pregame interviews and to monitor people to ensure that they did not discuss the games while waiting.

## PLAYER CHARACTERISTICS

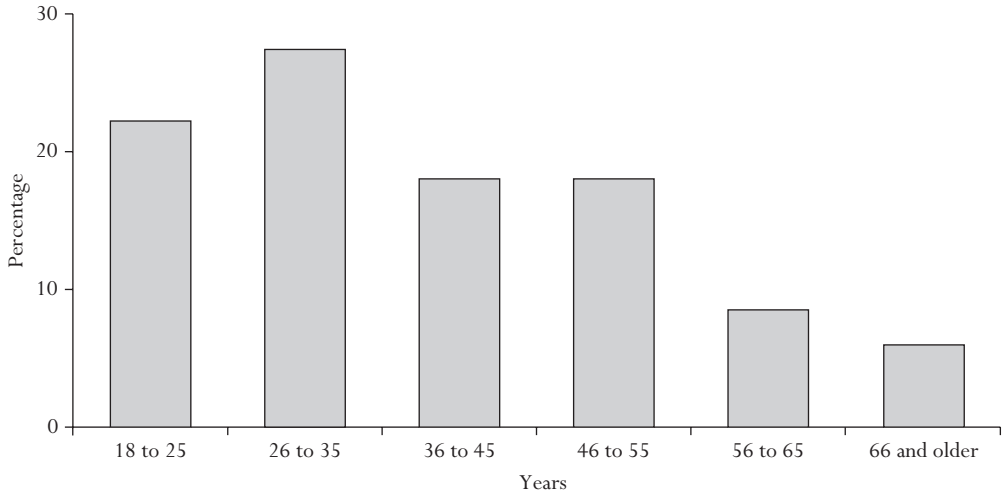
Figures 14.1 to 14.7 illustrate some of the demographic characteristics of the 117 players in the games conducted in Mbaringon. Notable among these characteristics are participants' low levels of education: the mean years of education was 1.4, and more than 70 percent of the players had no formal education. In spite of that, about 60 percent of participants reported speaking the national language, Swahili, either a little or a lot. Language acquisition generally indicates involvement with markets or towns, where people pick up the language even without formal education. Note also that individual income and per capita wealth are heavily skewed toward lower levels, reflecting the generally low levels of income and wealth in the population.

## RESULTS

### The Dictator Game

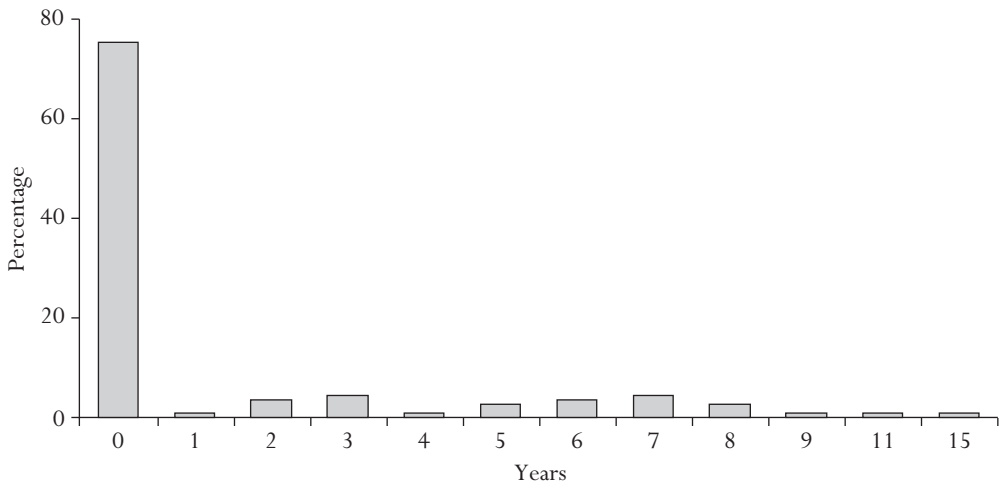
The dictator game asks player 1 to split a pot of money (the stake) with an anonymous player 2. In this case, the stake was 100 Kenyan shillings, equivalent to a day's manual labor wage in this area. Mainstream economic assumptions predict that player 1 will keep all the money and give nothing to player 2, as this is in his or her interest and, given the anonymity of the game, player 1's decision will remain unknown to player 2 and to others in the community. Offers greater than zero indicate a concern for fairness. In the United States, offers usually cluster around 0 and

FIGURE 14.2 *Age of Mbaringon Participants in Games*



Source: Author's compilation based on author data.

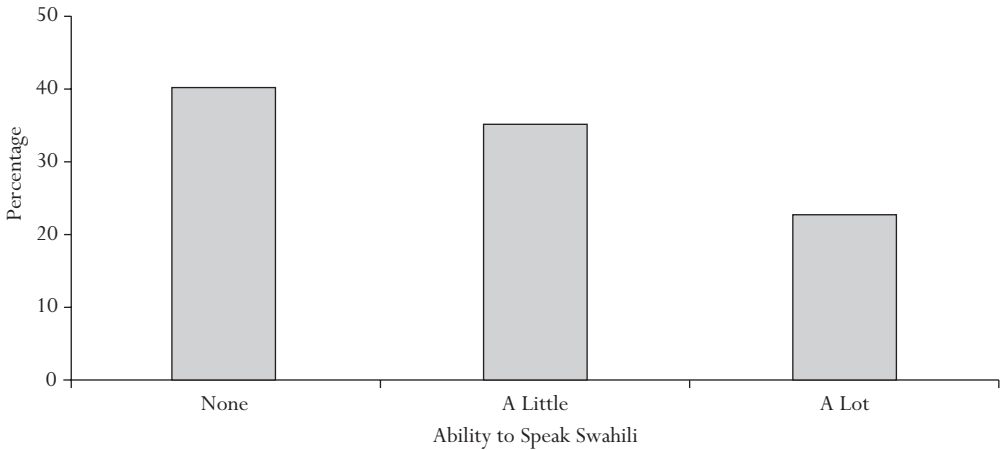
FIGURE 14.3 *Years of Schooling in Mbaringon Sample*



Source: Author's compilation based on author data.

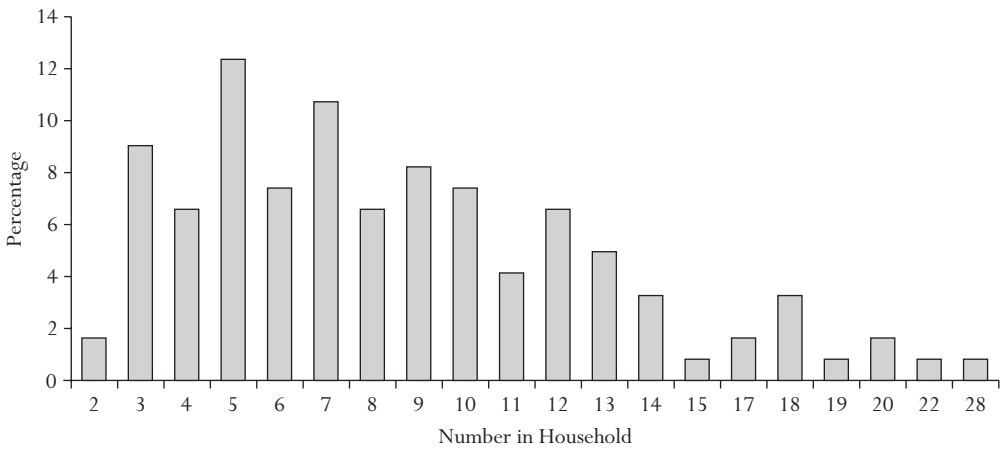
(Text continues on p. 364.)

FIGURE 14.4 *National Language Proficiency in Mbaringon Sample*



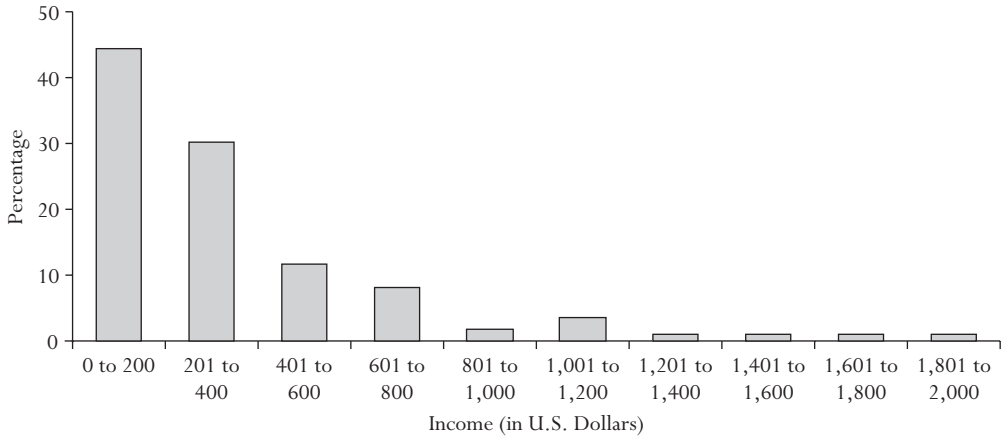
Source: Author's compilation based on author data.

FIGURE 14.5 *Household Size in Mbaringon Sample*



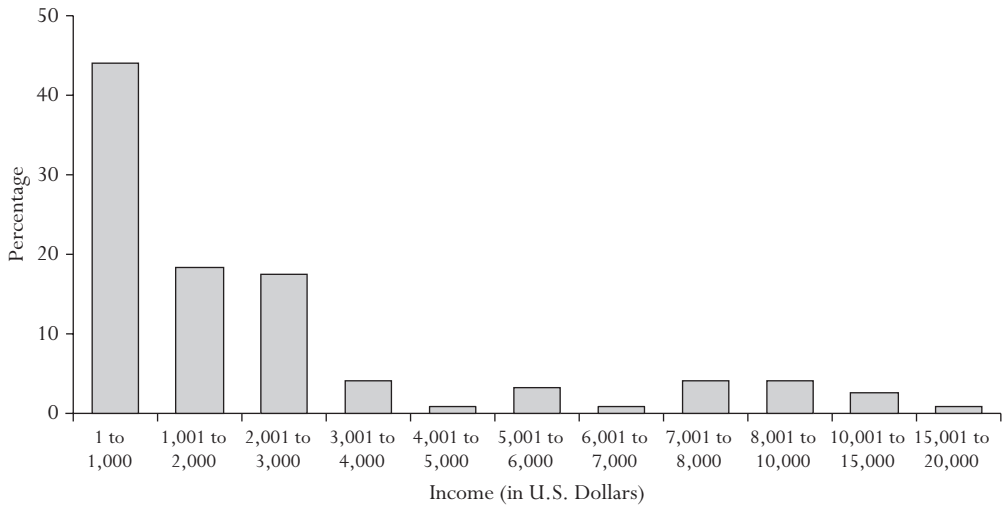
Source: Author's compilation based on author data.

FIGURE 14.6 *Individual Total Annual Income in Mbaringon Sample*



Source: Author's compilation based on author data.

FIGURE 14.7 *Total Household Wealth in Mbaringon Sample*



Source: Author's compilation based on author data.

50 percent of the stake (Camerer 2003). Among the thirty-one Mbaringon players, the mean DG offer was 40 percent of the stake (40 shillings), with a minimum of 0 shillings and a maximum of 90 shillings (standard deviation = 23.238).

Although offers spanned a wide range (0 to 90 percent), they approximated a normal distribution. Player 1s clearly exhibited a concern for fairness in the high number of positive offers they made in the DG. The wide spread of offers suggests, however, that there was no clear norm for offers in this game, a subject to which I return later. Figure 14.8 shows that the modal offer was 30 percent while there were six offers greater than 50 percent. These hyper-fair offers are somewhat surprising and unprecedented in this population, where the DG was played in 2001. I suspect that a few of these individuals were motivated to give such high offers in order to impress this investigator, owing to their position in the community and their own particular extenuating circumstances.

It is interesting to note that the offers in the DG in 2003 were significantly higher than they were in 2001. Table 14.1 gives the results of a Mann-Whitney nonparametric test indicating a significant ( $p = 0.004$ ) difference in the distributions of offers. This difference may have been due to improved environmental conditions in 2003. In 2001, Mbaringon was just starting to recover from a devastating drought in 2000, whereas rainfall was above average in 2003. It is possible that their improved welfare made people more generous (see also chapter 12, this volume, available at: <http://www.russellsage.org/Ensminger>).

### The Strategy Method Ultimatum Game

**Patterns in the Offers** In Mbaringon, the same thirty-one players played the strategy method UG game immediately following the DG, and they retained the same roles. The mean player 1 offer in the UG was 35.16 shillings (35.16 percent of the stake), with a minimum of 10 percent and a maximum of 80 percent (standard deviation = 19.126). This mean offer is lower—but not

FIGURE 14.8 *Mbaringon Offers in the Dictator Game*

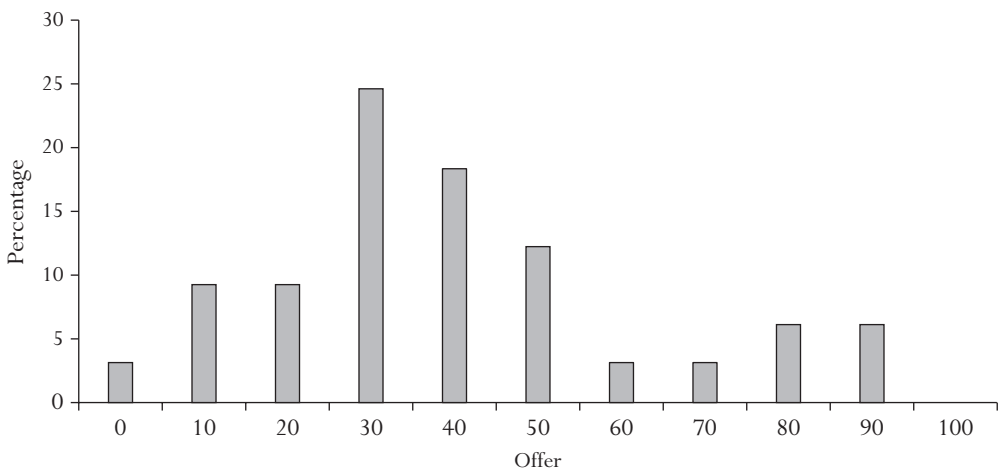




TABLE 14.1 *Mann-Whitney Test on Dictator Game Offers in Mbaringon, 2001 and 2003*

Year	N	Mean Rank	Sum of Ranks	Offer
<b>Ranks</b>				
DG offer in 2001	2	25.50	816.00	
DG offer in 2003	1	38.71	1,200.00	
Total	3			
<b>Test statistics<sup>a</sup></b>				
Mann-Whitney U				288.000
Wilcoxon W				816.000
Z				-2.912
Asymptotic significance (two-tailed)				0.004

Source: Author’s compilation based on author data.  
 a. Grouping variable: year.

TABLE 14.2 *Mann-Whitney Test on Dictator Game and Ultimatum Game Offers in Mbaringon*

Offers Player 1	N	Mean Rank	Sum of Ranks	Offer
<b>Ranks</b>				
UG-offer	31	30.00	930.00	
DG-offer	31	33.00	1,023.00	
Total	62			
<b>Test statistics<sup>a</sup></b>				
Mann-Whitney U				434.000
Wilcoxon W				930.000
Z				-0.663
Asymptotic significance (two-tailed)				0.507

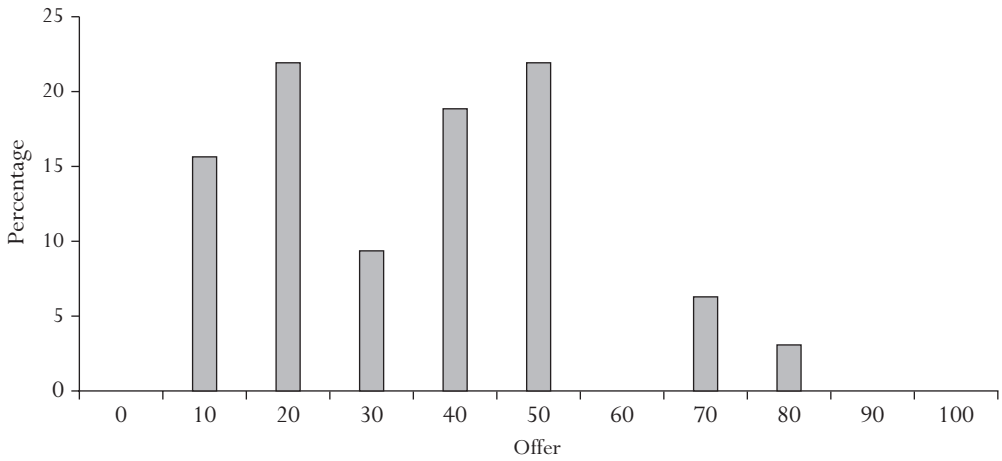
Source: Author’s compilation based on author data.  
 a. Grouping variable: Player 1 offers in DG and UG.

significantly so—than the mean offer in the DG. Table 14.2 shows the results of a Mann-Whitney test comparing offers in the DG and the UG.

While the distributions are not significantly different, there is considerable difference in the shape of the distribution in offers between the two games (figure 14.9). Notably, the distribution changes from close to normal to a bimodal distribution with peaks at 20 and 50 percent. Also, the six hyper-fair offers in the DG are reduced to three in the UG. There is no simple pattern, however, to these changes. Indeed, fourteen players reduced their offers from the DG to the UG, including all six hyper-fair offers in the DG, which fell by an average of thirty-two percentage points. Seven offers remained the same, while ten offers increased. Eight out of the ten increases were from offers of 30 percent or less. Overall, low offers (less than 30 percent) increased much more often (eight out of thirteen, or 62 percent) than they fell (two out of thirteen, or 15 percent). These shifts in offers are not captured very well in bivariate correlations, which show no significant correlation between offers in the DG and the UG (figure 14.10 and table 14.3).

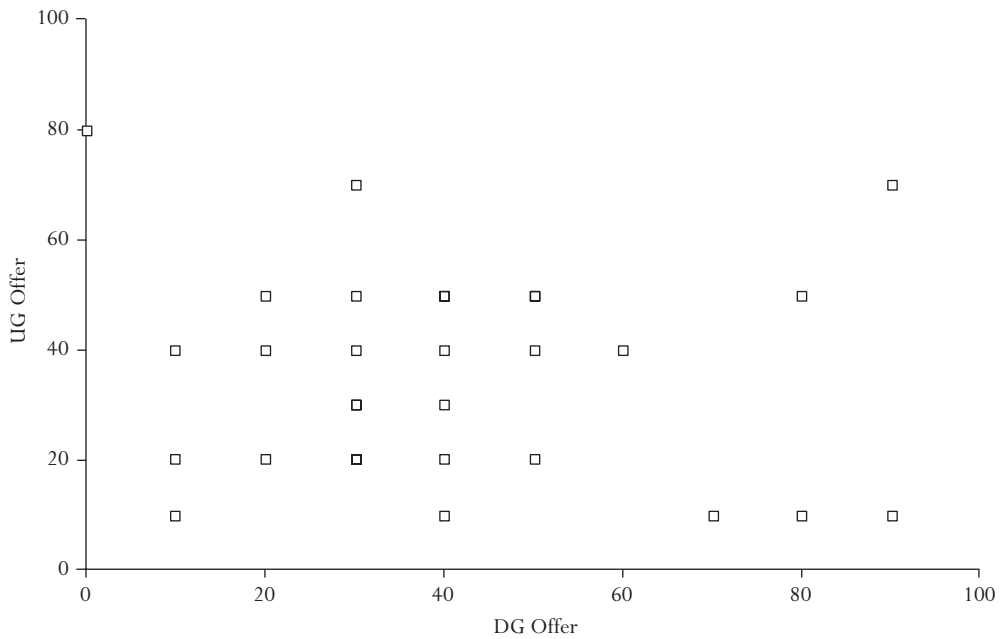
A closer examination of the pattern of offers suggests that player 1s who made relatively low offers in the DG increased their offers in the UG (perhaps fearing rejection), while those who

FIGURE 14.9 *Mbaringon Ultimatum Game Offers (N = 31)*



Source: Author's compilation based on author data.

FIGURE 14.10 *Scatter Plot of Mbaringon Dictator Game and Ultimatum Game Offers*



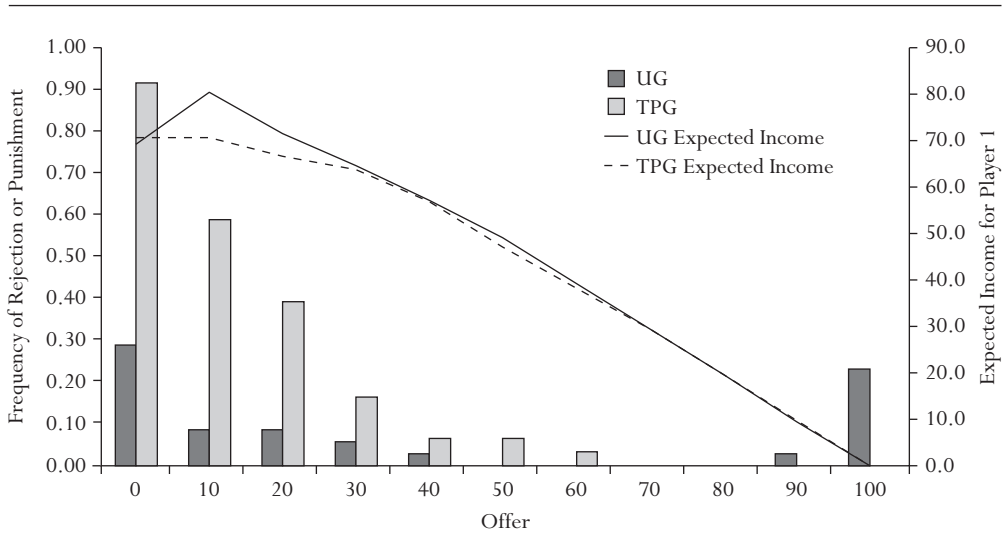
Source: Author's compilation based on author data.

TABLE 14.3 Correlations of Dictator Game and Ultimatum Game Offers in Mbaringon, 2003

	DG Offer	Player 1 UG Offer
DG offer: Pearson correlation	1%	-0.090
DG offer: Significance (two-tailed)	—	0.630
N	31	31

Source: Author’s compilation based on author data.

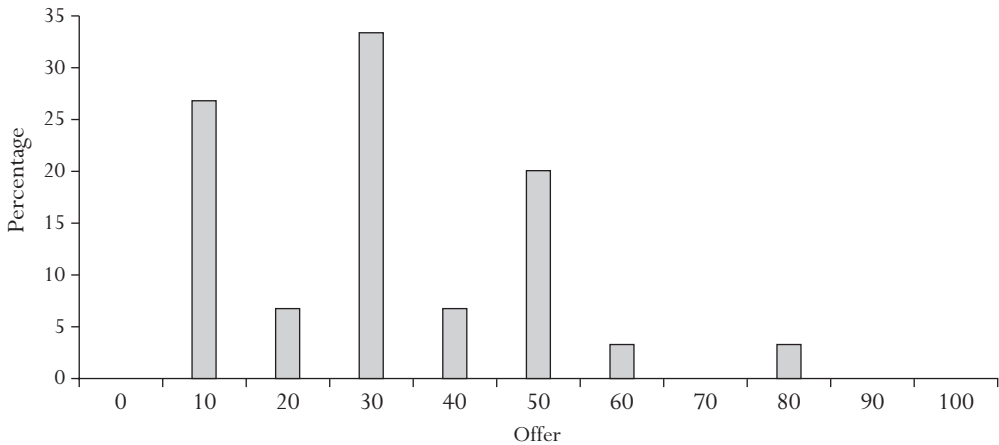
FIGURE 14.11 Mbaringon Rejections and Expected Income in the Ultimatum Game and the Third-Party Punishment Game



Source: Author’s calculations based on author data.

made hyper-fair offers in the DG invariably reduced their offers in the UG, sometimes by large margins—for example, from 80 or 90 percent to 10 percent. One plausible explanation for this behavior is that these players realized that they had not gained much through their generosity in the DG and decided to recoup something in the UG.<sup>2</sup> Thus, while there is no clear correlation between offers in the two games, there are indications that players’ strategies shifted between the two games. Edwins Laban Gwako (chapter 12, this volume, available at: <http://www.russellsage.org/Ensminger>) found a similar pattern of offers between the DG and the UG in the Maragoli and Gusii populations in Kenya, including evidence from interviews that player 1s were averaging their returns across the two games.

**Patterns of Rejection in the Strategy Method Ultimatum Game** Player 2s had the choice of rejecting the offers made by player 1s in the UG. In the strategy method version of this game, player 2 is asked whether he or she would accept or reject each possible offer before player 1’s actual offer is revealed. Figure 14.11 shows the percentage of player 2s who rejected each possible offer. Thirty-two percent of player 2s rejected offers of zero, while 10 percent

FIGURE 14.12 *Mbaringon Offers in the Third-Party Punishment Game (N = 30)*

Source: Author's compilation based on author data.

rejected offers of 10 or 20 percent. From that point, rates of rejection fell: all player 2s accepted offers of 50 through 80 percent. Interestingly, some player 2s rejected hyper-fair offers as well; 26 percent rejected offers of 100 percent. These players commented while they were playing the game that it was not fair or right for player 1 to give them the entire stake, because they believed that the stake should be divided fairly (evenly) between the two players (for similar results in a Chinese experiment, see Hennig-Schmidt et al. 2008). In actual play, none of the pairs of players ended up with zero. That is, there were no cases where player 1's offer was lower than what player 2 would accept.

### The Third-Party Punishment Game

The third-party punishment game provides an opportunity for a third player to take action regarding an offer from player 1 to player 2 in a game identical to the dictator game. In this protocol, player 3 can either do nothing about player 1's offer or respond by paying 10 shillings (out of 50 shillings allocated to player 3) in order to punish player 1; when player 3 pays 10 shillings, 30 shillings are deducted from player 1's takings. As in the strategy method UG, the TPG was played using the strategy method to elicit player 3's decisions about sanctioning prior to revealing player 1's actual offer. New players were recruited for the TPG, none of whom had played in the previous day's DG and UG.

Given the possibility of punishment in this game, we would expect the mean to be higher than in the DG and perhaps similar to the mean in the UG. The mean player 1 offer in the TPG ( $N = 30$ ) was 31.33 (standard deviation = 17.953), with a minimum of 10 percent and a maximum of 80 percent. This mean was lower than the means in DG and the UG. In contrast to the DG and the UG, there were only two hyper-fair offers in the TPG.

The pattern of offers (figure 14.12), reveals a mode at 30 percent and secondary modes at 10 and 50 percent. It appears that a sizable number of players (more than 25 percent) were confident that even offers of 10 would not be punished. In fact, eighteen player 3s (60 percent) did say that they would punish offers of 10, and in three cases this led to a reduction of player 1's

takings. Three other actual punishments occurred on offers of 30 percent. In that case, only five player 3s (17 percent) said that they would punish offers of 30, but three out of the five were paired with player 1s who made offers of 30 (the modal offer).

The pattern of punishment behavior in this game is interesting compared to that in the ultimatum game. Player 3s in the TPG were far more likely to punish low offers by player 1s than were player 2s in the UG. For example, while 93 percent of player 3s in the TPG said that they would punish offers of zero, only 32 percent of player 2s in the UG said that they would reject zero offers. This means that player 3 in the TPG was willing to suffer a loss of 10 shillings in order to punish player 1 while player 2 in the UG was unwilling to reject a zero offer even though it would have been costless for him or her to do so. Punishment rates in the TPG of offers of 10 (60 percent) and 20 (40 percent) were much higher than rejection rates of the same offers in the UG, which were only 10 percent for offers of 10 and 20. On the other hand, no player punished high offers in the TPG, while offers of 90 and 100 were sometimes rejected in the UG, possibly because of the way the game was set up: there was no way for player 3 to punish player 2 for receiving too much of the stake.

### Explaining Variation in Offers

**Individual Demographic Measures** To test for the influence of individual-level demographic characteristics on offers, linear regressions were conducted on offers in the three games. The dependent variable in each case was the offer percentage, and the independent variables were age, sex, years of education, individual total annual income, household wealth, and household size.

Each independent variable was removed from the regression sequentially if it was not significant in the first model. Tables 14.4, 14.5, and 14.6 show that on the whole the individual-level demographic variables were not good predictors of offers in the games.

I also tested for the influence of individual-level demographic variables on rejection behavior in the strategy method UG. For this, I constructed a variable, the minimum acceptable offer (MinAO)—the lowest offer that was accepted by player 2—which became the dependent variable in the regression. In this case, age is a predictor of MinAO (table 14.7). Older players were more likely to have higher MinAOs (that is, to reject low offers) than younger players, a finding that was robust across all the models. In the full model, a one-standard-deviation (14.6) change in age leads to a seven-percentage-point change in the MinAO. A bivariate Pearson correlation of age and MinAO reveals a 33 percent correlation, which is significant at the 0.05 level. Age is also a significant predictor of lowest unpunished offers (LUOs) in the TPG (table 14.8).<sup>3</sup> In the full model, a one-standard-deviation change in age results in a 9.3-percentage-point difference in the LUO. As in the UG, older players were more likely to punish low offers. These results suggest that older players tend to uphold norms of fairness to a greater extent than younger players and that they are willing to incur costs to do so.

### DOES CUEING OF CULTURALLY SPECIFIC INSTITUTIONS EXPLAIN VARIATIONS IN BEHAVIOR?

A number of explanations have been offered for the presence of altruistic punishment behavior, as observed here, where players incur costs to sanction other players who behave contrary to norms of fairness. In general, these explanations posit that altruistic punishment, or strong reciprocity, is a means to enforce adherence to social norms and thereby enhance the possibilities for human cooperation (Fehr and Fischbacher 2003, 2004; Fehr, Fischbacher, and Gächter 2002;

TABLE 14.4 *Linear Regressions of Mbaringon Dictator Game Offers, 2003*

Variable (Divided by Standard Deviation)	(1)	(2)	(3)	(4)	(5)	(6)
Age	-0.55 (4.41)					
Female	16.99 (11.10)	16.97 (10.82)				
Education	5.91 (3.64)	6.01* (3.46)	5.20 (3.54)			
Individual income	5.21 (3.44)	5.16 (3.34)	3.36 (3.24)	3.46 (3.12)		
Household wealth	-9.20 (5.92)	-9.09 (5.71)	-5.91 (5.52)	-4.59 (5.53)	-3.20 (5.49)	
Household size	-5.43 (5.59)	-5.45 (5.45)	-4.90 (5.63)	-7.26 (5.52)	-9.67* (5.42)	-10.50** (5.17)
Constant	45.00*** (17.37)	43.41*** (11.50)	47.28*** (11.61)	53.65*** (11.05)	60.46*** (10.47)	59.78*** (10.28)
Observations	26	26	26	26	26	26
Model significance	0.20	0.12	0.17	0.27	0.13	0.05
Adjusted R-squared	0.13	0.17	0.11	0.04	0.07	0.10

Source: Author's compilation based on author data.

Note: Standard errors are in parentheses. All coefficients are normalized (divided by standard deviation).

\*\*\*Coefficient significant at < 0.01 level in two-tailed test

\*\*Coefficient significant at < 0.05 level in two-tailed test

\*Coefficient significant at < 0.10 level in two-tailed test

TABLE 14.5 *Linear Regressions of Mbaringon Ultimatum Game Offers, 2003*

Variable (Divided by Standard Deviation)	(1)	(2)	(3)	(4)	(5)	(6)
Age	2.50 (3.69)					
Female	4.86 (9.29)	4.97 (9.16)				
Education	3.47 (3.04)	3.02 (2.93)	2.78 (2.84)			
Individual income	-3.09 (2.88)	-2.88 (2.82)	-3.40 (2.61)	-3.01 (2.39)		
Household wealth	5.48 (4.95)	4.99 (4.83)	5.92 (4.44)	6.19 (4.24)	3.78 (4.76)	
Household size	-6.29 (4.68)	-6.19 (4.61)	-6.03 (4.52)	-7.14 (4.29)	-3.55 (4.70)	-2.57 (4.50)
Constant	33.51** (14.53)	40.75*** (9.73)	41.89*** (9.34)	45.27*** (8.48)	39.04*** (9.08)	39.84*** (8.96)
Observations	26	26	26	26	26	26
Model significance	0.48	0.40	0.29	0.19	0.63	0.57
Adjusted R-squared	-0.01	0.02	0.05	0.08	-0.04	-0.03

Source: Author's compilation based on author data.

Note: Standard errors are in parentheses. All coefficients are normalized (divided by standard deviation).

\*\*\*Coefficient significant at < 0.01 level in two-tailed test

\*\*Coefficient significant at < 0.05 level in two-tailed test

TABLE 14.6 *Linear Regressions of Mbaringon Third-Party Punishment Game Offers, 2003*

Variable (Divided by Standard Deviation)	(1)	(2)	(3)	(4)	(5)	(6)
Age	-4.03 (3.92)					
Female	-9.04 (8.79)	-9.12 (8.80)				
Education	2.19 (4.31)	3.05 (4.23)	2.68 (4.23)			
Individual income	-0.27 (7.11)	-0.42 (7.12)	3.42 (6.09)	4.30 (5.65)		
Household wealth	-0.14 (8.61)	2.70 (8.17)	0.22 (7.82)	-1.94 (7.08)	-0.183 (6.64)	
Household size	-4.54 (5.94)	-6.73 (5.55)	-4.93 (5.28)	-4.56 (5.10)	-5.11 (5.00)	-5.22 (3.30)
Constant	53.27*** (15.21)	45.56*** (13.26)	34.95*** (8.45)	37.16*** (8.08)	40.39*** (6.82)	40.43*** (6.57)
Observations	29	29	29	29	29	29
Model significance	0.54	0.55	0.57	0.42	0.31	0.13
Adjusted R-squared	-0.03	-0.03	-0.04	-0.001	0.01	0.05

Source: Author's compilation based on author data.

Note: Standard errors are in parentheses. All coefficients are normalized (divided by standard deviation).

\*\*\*Coefficient significant at < 0.01 level in two-tailed test

TABLE 14.7 *Linear Regressions of Mbaringon Minimum Acceptable Offers in the Ultimatum Game, 2003*

Variable (Divided by Standard Deviation)	(1)	(2)	(3)	(4)	(5)	(6)
Age	7.07** (2.75)	5.13** (2.50)	5.00** (2.45)	4.55* (2.42)	4.59* (2.36)	4.29* (2.31)
Female	7.97 (5.28)					
Education	1.66 (2.34)	1.42 (2.40)				
Individual income	3.28 (2.13)	2.38 (2.10)	2.12 (2.03)			
Household wealth	-1.89 (3.02)	-1.71 (3.10)	-1.09 (2.88)	-0.43 (2.81)		
Household size	-0.64 (2.73)	0.009 (2.77)	-0.54 (2.58)	-1.17 (2.51)	-1.41 (1.89)	
Constant	-18.32 (10.62)	-10.00 (9.31)	-8.08 (8.61)	-3.84 (7.61)	-3.84 (7.47)	-5.85 (6.91)
Observations	30	30	30	30	30	30
Model significance	0.30	0.42	0.32	0.30	0.16	0.07
Adjusted R-squared	0.06	0.006	0.03	0.03	0.06	0.08

Source: Author's compilation based on author data.

Note: Standard errors are in parentheses. All coefficients are normalized (divided by standard deviation).

\*\*Coefficient significant at < 0.05 level in two-tailed test

\*Coefficient significant at < 0.10 level in two-tailed test

TABLE 14.8 *Linear Regressions of Mbaringon Lowest Unpunished Offers in the Third-Party Punishment Game, 2003*

Variable (Divided by Standard Deviation)	(1)	(2)	(3)	(4)	(5)	(6)
Age	9.29* (4.68)	9.36* (4.80)	9.74** (4.09)	9.62** (3.98)	9.06** (3.68)	5.56* (3.10)
Female	17.79* (9.69)	16.82* (9.91)	15.36 (9.40)	15.43 (9.21)	14.68 (8.88)	
Education	-6.93 (4.75)					
Individual income	-7.13 (8.06)	-8.23 (8.22)				
Household wealth	3.64 (3.39)	1.70 (3.20)	0.69 (3.06)			
Household size	-3.68 (4.20)	-3.70 (4.31)	-1.86 (4.11)	-1.26 (3.07)		
Constant	-7.30 (20.36)	-6.18 (20.86)	-14.16 (16.09)	-14.45 (15.73)	-14.49 (15.48)	6.94 (8.71)
Observations	28	28	28	28	28	28
Model significance	0.16	0.20	0.24	0.13	0.06	0.08
Adjusted R-squared	0.14	0.10	0.07	0.10	0.13	0.07

Source: Author's compilation based on author data.

Note: Standard errors are in parentheses. All coefficients are normalized (divided by standard deviation).

\*\*Coefficient significant at < 0.05 level in two-tailed test

\*Coefficient significant at < 0.10 level in two-tailed test

Gintis 2000). Ernst Fehr and Urs Fischbacher (2004, 77) also compare second- and third-party punishment in games that are closely analogous to the strategy method UG and TPG discussed here. They find that players are much more likely to punish violations of norms that affect them directly (second-party enforcement) than those to which they are merely witness (third-party enforcement). They reason that this difference is due to the higher costs of low offers to beneficiaries as opposed to third parties and the negative psychological effects associated with low offers (80). It is intriguing, then, that in the games reported here, player 2s in the UG were less likely to punish than player 3s in the TPG, even when offers were low and the costs of punishment were low or zero (in the case of zero offers in the UG).

A possible explanation for this pattern of punishment is the manner in which the structure of the game itself influences behavior rather than a propensity toward altruistic punishment per se. Specifically, the game structure may remind individual players of particular social situations and the institutionalized rules that apply to those situations (Henrich and Henrich 2007, ch. 6). Such cueing effects of games have been noted by Jean Ensminger (2000) and by Gary Bolton, Elena Katok, and Rami Zwick (1998). In this case, Samburu patterns of dispute resolution and property rights might help explain why people were more willing to deploy third-party punishment in the TPG than second-party punishment (rejection) in the UG. It is common in Samburu society to settle disputes by fining individuals who are guilty of violating rules or norms (for example, for grazing infractions, violation of age-grade rules, theft, assault, and marital disputes). In these cases, fines are imposed by a council of elders—a third party—and are either transferred to the injured party (interpersonal disputes) or consumed by the community as a whole (grazing fines). Since these types of infractions and sanctions are relatively common occurrences, individuals are quite used to playing a role as a third party and exacting a fine, as in the TPG.



Rejecting a gift, however, is another story. If the game situation was construed as receiving a gift (rather than an entitlement) from someone else, then rejecting even a low offer would be tantamount to refusing a gift, which is quite unusual among Samburu. Gift giving and receiving are important bases for reciprocity in the community, and individuals invest fairly heavily in developing and maintaining networks of reciprocity (Lesorogol 2009). To the extent that offers are perceived to be gifts, low rates of rejection or punishment would be consistent with Mbaringon social norms regarding gifts.

I have argued elsewhere (Lesorogol 2005) that the ambiguity of property rights in the dictator game may affect play (see also Engel 2011; Hoffman et al. 1994; Hoffman, McCabe, and Smith 2000; Hoffman and Spitzer 1985). That is, even though the game instructions stipulate that the stake is allocated to the pair of players, player 1 is given authority to decide how the money is divided between him- or herself and player 2. In this sense, it is possible to construe ownership as residing more with player 1 than with player 2, a condition that also holds in the UG and the TPG (with the caveat that player 2 can reject low offers in the UG and player 3 can sanction player 1 in the TPG—conditions that do not apply in the DG).

If player 1 perceives him- or herself as having ownership rights over the stake, then offers are gifts, not entitlements, and low offers would be acceptable to both giver and receiver. This would explain why many player 2s accepted low offers. On the other hand, if ownership is construed as joint, then offers are more like entitlements than gifts, and low offers would be more likely to be rejected as a violation of fairness norms; this would explain why some players do reject offers up to 50 percent of the stake. Rejections of hyper-fair offers also make sense in the entitlement view, since hyper-fair offers violate the entitlement of player 1. Thus, a player 2 operating from an entitlement perspective may reject such high offers, reasoning that the money should not go disproportionately to either player 1 or player 2. There is also the chance that people reject high offers because they are reluctant to incur the obligations that might be attached to a large gift—as in David Tracer's (2003) Papua New Guinea case—but my understanding, from Samburu players' comments during the game, is that rejections of hyper-fair offers had more to do with the entitlement perspective than with fear of incurring obligation. This ambiguity of property rights may help explain the wide range of offers, rejections, and punishments in all the games, since these depend on how each individual interprets ownership.

Given the setup of the UG and the TPG, I think it is likely that many players (but not all) interpret offers in the UG as gifts and are therefore unlikely to reject them. In the TPG, the role of player 3 is clearly defined as a third party to the transaction between player 1 and player 2. It is possible that this arrangement cues cultural patterns of third-party sanctioning by reminding players of third-party dispute resolution in general. If they therefore feel somewhat obligated to act in their capacity as a third-party observer, this may partly account for higher levels of punishment behavior compared to rejections in the UG. Further, if they interpret offers as entitlements, they are likely to punish low offers. The finding that older players were more likely to punish in the TPG and to reject low offers in the UG appears consistent with the hypothesis about cueing, because older individuals are more actively involved in the enforcement of social norms in real-life situations.

## CONCLUSIONS

These results suggest that culturally specific institutions relating to notions of property rights and modes of sanctioning help explain behavior in economic games. That is, even though these were one-shot games with intersubject anonymity, Samburu players behaved as if they were in

their own particular social context. An implication of this finding is that experimenters need to pay careful attention not only to framing effects (how game instructions are worded and presented) but also to contextual effects (how games resemble familiar cultural institutions). For example, it would be important to understand the extent to which players are consciously and strategically choosing a particular contextualization of the game (for example, as involving gifts or entitlements) that serves their own interests (economic or otherwise), or whether context enters the game unconsciously as players behave according to embedded social norms, as with the contextualized dictator game conducted among Samburu (Lesorogol 2007). The degree of intentionality may also differ among individuals, perhaps systematically. Further investigation of these parameters in field experiments will provide insight into the interplay of cultural institutions and individual behavior.

## NOTES

1. I think the population is somewhat less than 3,800 because a number of the households are young men who are just leaving their parents and getting married and do not have children.
2. Players were not paid until the completion of both games. However, player 1s knew what they were keeping from the DG even before the UG was played, since player 2s had no choice in that game and player 1s retained whatever they did not give to player 2s.
3. The regression was checked for the influence of outliers as well as effects of order of play.

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