Chapter 11

Economic Experimental Game Results from the Sursurunga of New Ireland, Papua New Guinea

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In July and August 2003, I conducted the dictator game (DG) and the strategy method ultimatum game (UG) experimental protocols, using cash, among Sursurunga speakers of New Ireland Province, Papua New Guinea. Two years later, I carried out the third-party punishment game (TPG) in the same area.[1] These games were completed using the protocols described in chapter 3.[2] This chapter begins with an overview of the Sursurunga before moving on to the results of these three games. A discussion follows in which I consider some of the implications of these results, including the ways in which Sursurunga psychological distress at perceived unfairness serves as a salient motivator for decisions made in the games.

ETHNOGRAPHIC OVERVIEW

There are about four thousand people who speak Sursurunga (an Austronesian language); they live toward the southern end of the island of New Ireland, Papua New Guinea. Most of these four thousand live in a string of nineteen nucleated villages along the east coast and in its immediate hinterlands.[3] Toward the middle of these nineteen villages is Tekedan, a village that is home to 157 people and that serves as my research base as well as one of the primary research sites.[4] About forty minutes away on foot is Nokon Village, with a population of 201. Most of the subjects for the three games resided in either Tekedan or Nokon.

The Sursurunga organize themselves on the basis of named matrilineal clans and unnamed matrilineages. Marriage is governed by a prescriptive rule of matrimoiety exogamy. As an outcome of new residential patterns that emerged in the aftermath of World War II and with a greater Australian colonial presence, named nucleated villages sprung up along the coast. Each village has a matriclan that is most prominent, such that there is a very rough one clan–one village association. There are many villages, however, that have more connections with certain other villages via enatic ties (through the mother's side) as well as through marriage. Tekedan, Nokon, and Himaul (which is between Tekedan and Nokon) are three such villages in that the number of people who visit back and forth—for various reasons (not the least of which is physical proximity)—between these three is not insignificant.

Matrilineal descent is also the template that guides the system of mortuary feasts conducted in honor of the dead. In brief, when a person dies, the opposite matrimoiety provides gifts to the family of the deceased and performs a number of the responsibilities associated with burial. Later (sometimes months, sometimes years, depending on a number of variables),

TABLE 11.1 *Reduction in Wage Labor in New Ireland Province, 1990 to 2000*

Year	Total Rural Population	Engaged in Non-monetary-Sector Activities	Money-Sector Activities	Not Stated
1990	54,635	32,808 (60.0%)	21,573 (39.5%)	252 (0.5%)
2000	73,433	60,207 (82.0%)	11,824 (16.1%)	1,402 (1.9%)

Source: Author's compilation based on Papua New Guinea national censuses (National Statistics Office 1994, 2002).

a subsequent feast is sponsored by the lineage of the deceased—with strong clan and some matrimoiety support—in which the gifts and services given at the burial are reciprocated. At these feasts, much pork is consumed, and outside of the occasional hunter bringing home a boar from the forest, pork is almost never consumed except in mortuary circumstances (which would also include smaller-scale feasts such as when the belongings of the deceased are burned or when the cemetery is cleaned and weeded).[5]

Most of the everyday diet is locally grown in swidden gardens and consists of sweet potato (varieties of *Ipomoea batatas*), manioc (*Manihot esculenta*), yams (*Dioscorea esculenta*), and taro (*Colocasia esculenta*) cooked with greens in a potage made of the cream of shredded coconut meat. Bananas and other fruits supplement the diet, along with occasional portions of fish or shellfish. Around one-quarter of the calories consumed locally come from purchased foods, by far the most common being rice.

The Boluminski Highway (the official name of the east coast road) bisects most of the nineteen Sursurunga villages on the east coast. Irregularities in the repairs made to bridges and roads in the past decade or so have made passage north to the district capital, the small town of Namatanai (2010 population: 1,376), about seventy kilometers away from Tekedan, a bit more uncomfortable and time-consuming. Many people travel to Namatanai several times a year. (A round trip from Tekedan costs eight to ten Papua New Guinea kina [about U.S.$3.20 to U.S.$4.00], depending on the vehicle.)

Namatanai serves as the source of many things for the Sursurunga area, some of the more locally important being newspapers, motor fuel, alcohol, clothing, manufactured items such as tools and cooking pots, and food.[6] Although Namatanai became harder to reach during the recent global economic downturn, the availability of items for purchase had already been limited by the longtime stagnation (or worse) of the cash economy in the area. Nowadays, Namatanai merchants have meters of empty shelving in the same spaces where they were full of Australian and Chinese imports in the early 1990s. The single biggest reason for this economic stagnation has been the devaluation of the kina, the national currency. In 1992 the kina was worth approximately U.S.$1.05; today a kina, which first began to float in 1994, fluctuates between U.S.$0.35 and U.S.$0.40. The decrease in the value of the kina has resulted in a significant provincewide move away from wage work and cash-cropping to subsistence farming, as the numbers in tables 11.1 and 11.2 show. This is even more true south of Namatanai (that is, in the part of New Ireland inhabited by Sursurunga speakers), where the Boluminski Highway is in chronic disrepair. In short, while travel to Namatanai has contributed to the town's growth as a regional center in many ways, people's economic reliance on the services available in Namatanai has decreased since the mid-1990s (see table 11.1). Perhaps the most striking evidence of this decrease is that there are far fewer items available for purchase at Namatanai (where I typically purchase supplies)—both in absolute terms (the empty shelf space mentioned earlier) and in terms of variety. For example, only one brand of rice, tinned beef, and

TABLE 11.2 *Household Economic Activity in Northern and Southern New Ireland Province, 2010*

District	Total Rural Population	Δ Percentage Engaged in Food Crops	Δ Percentage Engaged in Coconuts	Δ Percentage Engaged in Betel Nuts	Δ Percentage Engaged in Fishing
Kavieng	38,931	59.7%	12.1%	30.0%	36.7%
Namatanai	63,553	65.4	19.7	49.3	46.0

Source: Author's compilation based on Papua New Guinea National Research Institute (2010, 174–175).
Note: Δ = difference between households engaged in the activity minus those engaged in the activity for cash.

tinned fish is to be found nowadays, whereas there were choices of up to four brands of each in the early 1990s.

Information from the 2010 Papua New Guinea national census (conducted in 2011) is not yet available for the number of people engaged in non-money-sector activities and money-sector activities. However, the Papua New Guinea National Research Institute (NRI) released data in March 2010 showing that the trend away from a reliance on the cash economy (table 11.2) is more pronounced in the southern Namatanai District (where the Sursurunga are) than in northern New Ireland. The NRI figures do not distinguish between rural and urban households, but the only towns on New Ireland are the provincial capital Kavieng in the north and Namatanai in the south. The total rural population figures reported in table 11.2 are the difference between the entire district population and the populations of those two towns.

The figures in table 11.2 show that Namatanai District households consistently differ from their northern New Ireland counterparts in how much less they engage in cash-based economic activity. The conclusion that can be drawn from the two tables presented here is that, for at least a generation, the degree of integration into the broader cash economy has remained steady in the Sursurunga area.

SURSURUNGA SOCIALITY

One of the most striking aspects of Sursurunga society is the cultural emphasis on what is called "balanced reciprocity" (Sahlins 1965), which is very much a kind of "equality matching" relational template, as described by the psychological anthropologist Alan Fiske in *The Structures of Social Life* (1991; see also Fiske 1992, 2002). Fiske's insightful distillation of much twentieth-century behavioral science thinking addresses the nature of human relationships and argues for the existence of four elementary, innate templates of human social relations: communal sharing (CS), authority ranking (AR), equality matching (EM), and market pricing (MP). Each of these templates entails particular built-in assumptions about other people, such as:

> *Communal sharing:* Everyone in the group is to be treated well, and those not in the group are not to be treated well. In terms of reciprocity, intragroup exchange is ordered by an ethic of as-needed assistance.
>
> *Authority ranking:* Everyone in the group has a place, there is a pecking order, and one can identify those above and those below in that order. Exchange is an important marker of that order: those who are higher demonstrate their rightful place—or make claims to higher places—by out-giving those below.

Equality matching: Everyone in the group is the same and should have the same rights and obligations. Balanced reciprocity guides exchange: relationships are best maintained by the orderly maintenance of equitable trade. In this pattern, giving too little demonstrates meanness and stinginess, while giving too much is an aggressive act that is seen to be an effort to demean the recipient.

Market pricing: Everyone in the group is expected to be a net asset, rather than a net liability, to the group; membership in the group is contingent on giving more than one takes. Exchange is based on the related notions of profit and return. Zero-sum exchanges are avoided within the group, but not outside the group.

Fiske notes that these templates rarely exist in unalloyed form, but that in general one or two can be seen to be dominant in any particular social order. More to the point, these templates are constituents of socio-moral emotions that guide people "toward behavior that will tend to create or restore optimal relational equilibrium" (Fiske 2002, 172). In other words, people can *feel* when the culturally salient templates vary from perceived reality. Among the Sursurunga, the stress on "equal sharing" easily calls to mind EM as the prevailing relationship template or schema, as exemplified in the following examples.

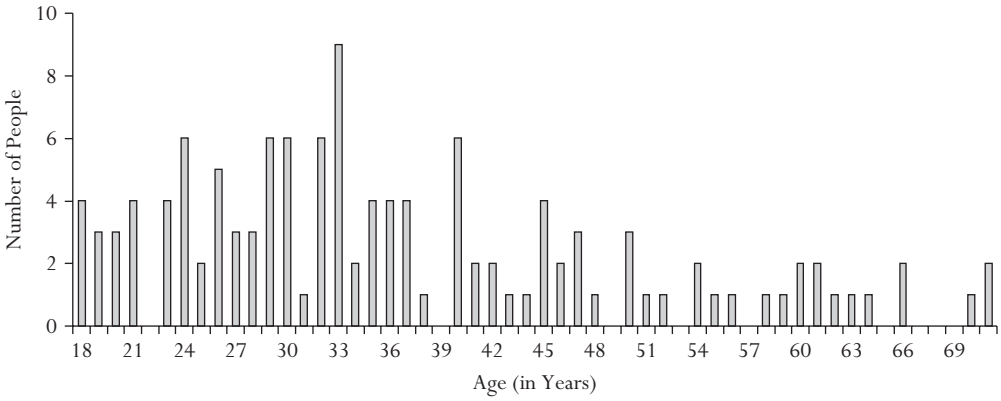
Example 1: Repaying pork. At a feast where pork is consumed, it is not uncommon for there to be a repayment for a gift of pork provided in the past. When a feast sponsor wishes to repay his debt to another, he retrieves the measuring device—the ribs of palm fronds work well for this—that was used to gauge the original gift. He then sees to it that a piece of pork of precisely the same size is cut so that he can reciprocate the original gift exactly. I should note that when pressed, people explain their behavior by noting that a return gift of lesser size makes one appear to be mean, while a return gift larger than the original makes the other person uncomfortable (bál i sák, or, "the belly is bad").[7]

Example 2: Compensation. Among the Sursurunga, no bad deed goes unpunished—at least in principle. I have witnessed discussions during local village moots (warkurai) over the appropriate cash compensation to be paid for the following transgressions: name-calling; breaking and entering; shooting slingshots in populated areas; adultery; one person's pig breaking into another person's garden; contaminating the water supply; one person's dog killing another person's chicken; and fighting. These are some of the more frequent offenses. That compensation should be rendered in such instances is without question; the issue that consumes hours of discussion for each act of malfeasance is the amount of the appropriate compensation, since, people say, too little leaves the victim with residual bad feelings and too much leaves the perpetrator with a grudge.

Example 3: Record-keeping. When a person dies, the women from surrounding villages pay their respects by coming to keen and wail at the men's house belonging to the matrilineage of the deceased. Each woman's name is recorded so that at a subsequent feast—which can sometimes take place several years later—she will be compensated for her effort with a packet of pork and other victuals. The painstaking care involved in the recording process, as well as the concern for preserving the record itself, stands out in a place where people seem to care less for and lose track of other documents, such as bank passbooks, health/immunization records, and business agreements.

I should note that the salience of EM among the Sursurunga appears to be consistent with a pan-Melanesian phenomenon (Fiske 1992, 704), even though the salience of EM will not manifest in the same ways across Melanesia. I have in mind as one contrasting case the well-known

FIGURE 11.1 *Sursurunga Sample: Age*



Source: Author's compilation based on author data.

moka exchange system found in the Central Highlands of New Guinea (Strathern 1971). In moka, exchanges alternate over the years in increasing increments until one party is unable to keep up and "loses." While moka may seem to run counter to EM, in fact it operates on the basis of EM. The intentional violation of a (salient) EM template for social relations that characterizes moka is the basis for the motivation to maintain the institution as each group attempts to keep from being "one-upped."

Fiske notes that, given the subjective sense of the "naturalness" of these templates, behaviors that conform to them or are in accord with them are to a degree their own reward (Fiske 1991, 384–87; Fiske 1992, 716; Fiske 2002)—that is, they *feel* right, which means that not behaving in a particular way, such as along the lines of EM among the Sursurunga, is aversive. The experimental games that were played, being stripped of contextual cues such as indications of another player's kinship status and prestige, provided clear opportunities for default behavioral templates such as EM to be engaged. And in the Sursurunga case, EM is precisely what we see consistently manifested.

SURSURUNGA DEMOGRAPHICS

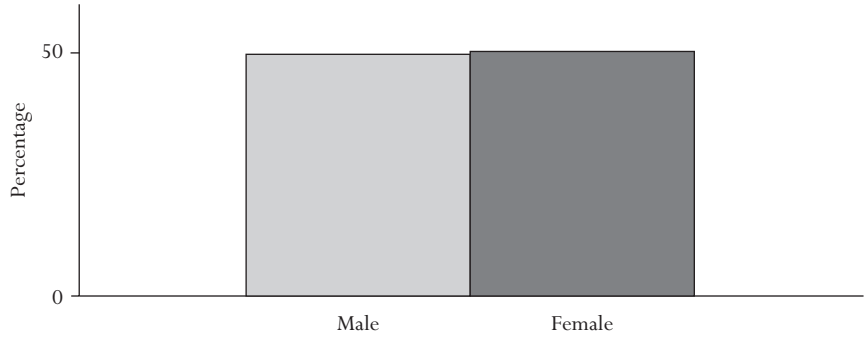
This comparative aspect of the Roots of Human Sociality Project relies on six key variables: age, sex, education, cash income, household wealth, and household size. The following histograms in figures 11.1 through 11.6 represent the Sursurunga game-playing population (N = 125) along these dimensions.[8]

The ages of the people in the Sursurunga sample are unremarkable. The mean age of all participants was 36.7 years (standard deviation = 13.4 years), and the median age was 33.0 years.

The sex ratio for the three games (that is, the DG, UG, and TPG) was virtually even, with females representing 50.4 percent of the sample.

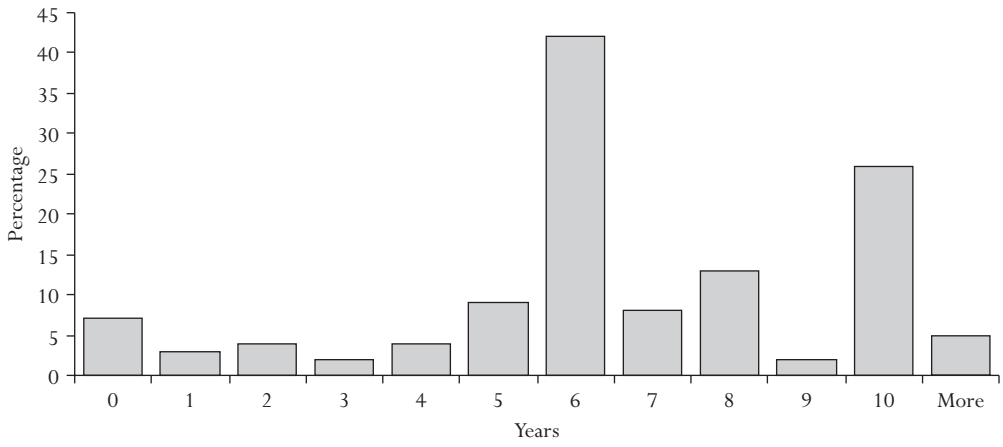
The spike at six years of education that can be seen in figure 11.3 reflects the national pattern of testing. After completing grade 6, children sit for an exam that makes them eligible for additional schooling. Between too-low test scores and the increase in cost for education beyond grade 6, education for many people ends after six years. A similar test occurs at the completion of grade 10, which accounts for a similar, although smaller, spike.

FIGURE 11.2 *Sursurunga Sample: Sex*



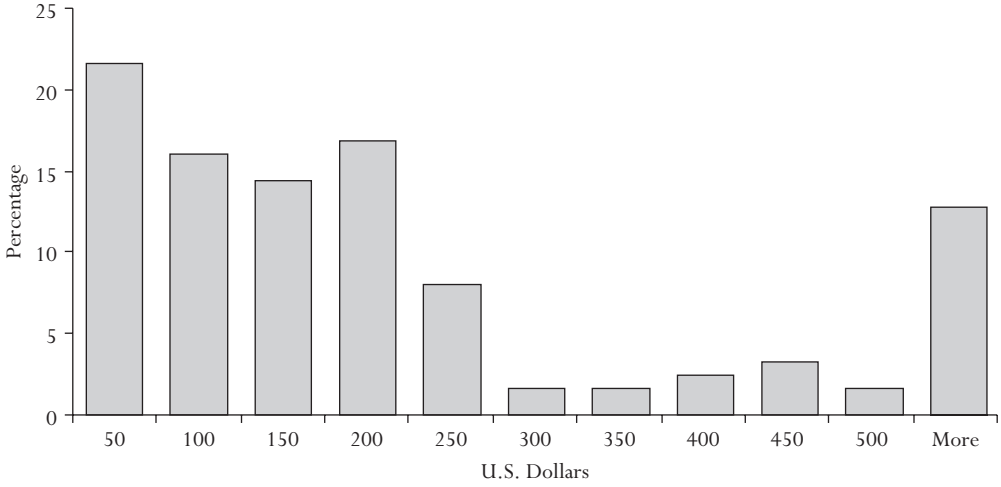
Source: Author's compilation based on author data.

FIGURE 11.3 *Sursurunga Sample: Education*



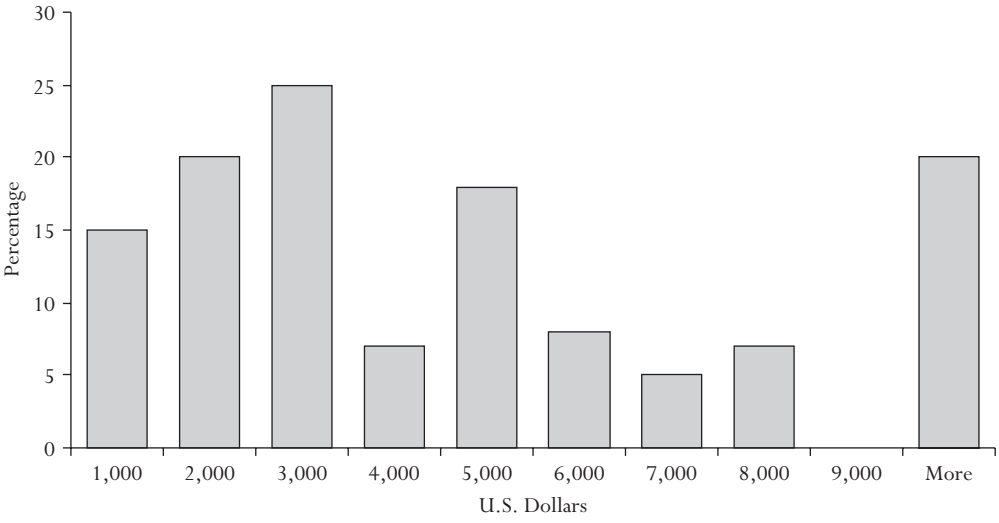
Source: Author's compilation based on author data.

FIGURE 11.4 *Sursurunga Sample: Annual Income*



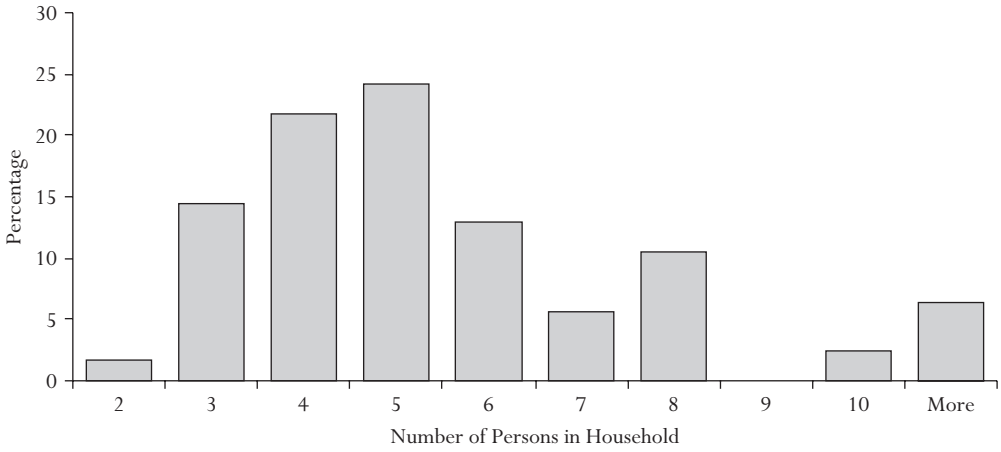
Source: Author's compilation based on author data.

FIGURE 11.5 *Sursurunga Sample: Household Wealth*



Source: Author's compilation based on author data.

FIGURE 11.6 *Sursurunga Sample: Household Size*



Source: Author's compilation based on author data.

Like household wealth, there is great range when it comes to annual cash income in the Sursurunga sample. Most people do a bit of cash-cropping, a smaller number of people do a bit of selling at roadside stands, and wage labor is a distant third when it comes to the means by which people make money. The mean per capita income for the sample is U.S.$276 (standard deviation = 477), and the median is U.S.$136. Not surprisingly, the correlation between household wealth and per capita income is $r = 0.31067$, which is significant at the 0.01 level.

The mean figure for household wealth is U.S.$5,024. There is a standard deviation, however, of $5,666. The median is $3,445. What we find, then, is a tremendous amount of variability in terms of household wealth in the Sursurunga area.

The mean household size for those playing the DG, UG, and TPG was 5.5 (standard deviation = 2.3); the median size was five persons. It is significant that no one lived alone—that is, there are no Sursurunga households of one person.

MARKET INTEGRATION AND WORLD RELIGION

The variables market integration (MI) and world religion (WR) have already been discussed (chapters 2 and 4) as being significant factors in the data, and conclusions are presented in this volume. Therefore, I describe them in a bit more detail here.

As noted in chapter 3 (table 3.1), the Sursurunga MI score is 24, which signifies that a mean of 24 percent of people's daily caloric intake (mostly in the form of rice) is purchased. As has been true for much of Papua New Guinea (Gibson 2001), rice consumption seems not to have increased much in the past two decades, so the MI score is not an aberration. The remaining calories come mostly from tubers and coconut. Protein sources include various forms of greens, fish, and, on occasion, pork.

Rice is usually purchased in small (one kilogram for around 3.25 kina, or approximately U.S.$1.25) plastic bags from a local trade store. Two trade stores can be found at Tekedan Village most of the time. I say "most of the time" because a proprietor may be absent from the village for a

few weeks or months (perhaps taking advantage of a wage labor opportunity), or because he is out of stock and cash and so shuts down temporarily. Nokon Village has four such stores, and Himaul has two—all subject to the same contingencies as the Tekedan stores. The sporadic hours of these stores contribute to the somewhat low MI level, and I am convinced (and many local people have said) that if rice was more available, more would be eaten.

The Sursurunga WR score is 1.0. Although it may seem impossible to someone from a large, industrialized, diverse society that there could be 100 percent agreement on religious beliefs, it is an accurate description of the religious reality among the Sursurunga.[9] I have no record of anyone in any of the communities studied ever disavowing Christian theism, even if church attendance and other measures of strength of belief might be low for some individuals.

Christian denominations in the area roughly match the proportions of the sample; that is, approximately 80 percent of the population claims adherence to the United Church, an alloy of London Missionary Society and Methodist churches that amalgamated throughout the region in 1968 (see Bolyanatz 2000, 25–28). The more recent arrivals, the Pentecostal and charismatic forms of Christianity, make up the remainder.

RESEARCH METHODS

The basic procedures for conducting DG, UG, and TPG have already been described in chapter 3. Here I describe the particular ways in which I used the basic procedures and the ways in which I modified or revised those procedures at the Sursurunga site.

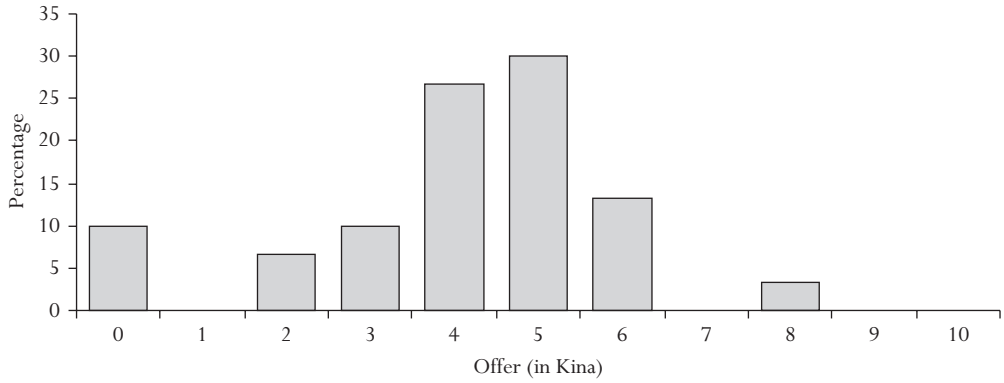
I carried out the DG and UG two years prior to the TPG. I was pessimistic about the logistics of playing all of the games on New Ireland and determined prior to arriving there in 2003 that I would attempt the TPG only if it seemed appropriate at the time. It did not. Conducting the TPG at a neighboring village (Nokon) two years later had the added advantage of reducing the chance of contamination.

The weather did not cooperate for the first half of the DG at Tekedan; constant heavy downpours made it difficult to keep people together and impossible to keep those who had finished playing separate from those who had yet to play, as shelter from the rain was a more important consideration to many people (reasonably enough) than my efforts to keep the two groups apart. Although this difficulty set up the possibility of contagion, two research assistants monitored the area carefully and reported at the end of the day that they had heard no conversations about the game. I believe that my strident insistence at the outset of the day on not discussing the games, along with the patrolling research assistants, precluded any contagion, collusion, or contamination.

The games were conducted in Tok Pisin (Neo-Melanesian), a language in which I am nearly fluent, rather than the local vernacular, Sursurunga.[10] I chose to use Tok Pisin rather than Sursurunga as the language of investigation for three reasons: (1) my Sursurunga skills are not as developed as my Tok Pisin skills; (2) everyone tested—indeed, virtually everyone in the region—was bilingual in Tok Pisin and the local language; and (3) not everyone who lived in Tekedan or Nokon Village was from the Sursurunga area, and those people spoke Tok Pisin but not Sursurunga (although they understood it).

For some people, the reiteration of examples became quite tedious in all of the games; I reduced the number of examples for people who seemed both to understand fully and to become exasperated with the repetition. Thus, after the group presentation, I asked people if they had any questions when they entered the test area. After answering any questions, for each person I gave three examples, then moved to three tests, in which people were required to answer correctly. I then provided one more hypothetical example (a kind of "final exam") and

FIGURE 11.7 *Sursurunga Sample: Dictator Game Player 1 Offers*



Source: Author's compilation based on author data.

asked the player what the outcome would be. If the person answered correctly, I believed that she or he had grasped the game, and I entered "1" on my data sheet in the "number of examples" column.[11] As expected, some people required additional examples, and I recorded the number of additional test examples given to each person. I would find that there was no statistically significant relationship between player 1 offers and the number of additional examples ($r = 0.0539$) across all three games, between player 2 minimum acceptable offers (MinAOs) and the number of additional examples ($r = -0.0847$) in the UG, and for player 3 in the TPG in terms of the highest amount offered by player 1 that went unpunished (0.0285). There is no evidence, then, that the revised amount of teaching had any effect on the outcome.

The protocols for these experiments call for the stake to be approximately one day's wage. For the cash games, I used 10 kina (1 kina equaled U.S.$ 0.26 at the time) as the stake. Ten kina is a rather good day's wage in the region, and though it is above the average daily wage (which would be between 4 and 8 kina), the ease of using ten 1-kina coins for the games outweighed other considerations. The same amount was also used in the other site in Papua New Guinea where the same experimental games were conducted (see chapter 7, this volume, available at: http://www.russellsage.org/Ensminger).

RESULTS

The Dictator Game

Figure 11.7 shows the results of the dictator game. The mean offer was 4.07 kina (or about 41 percent of the stake); the modal offer was 5 kina—a fifty-fifty split. As expected, given the salience of EM among the Sursurunga, this is not a remarkable result.

Table 11.3 shows the regressions of DG offers.[12] None of the other six variables under consideration (age, sex, education, income, household wealth, and household size) had a statistically significant effect on offers made by DG player 1s within the Sursurunga sample.

The most striking result is the pattern that emerges from players' postgame comments. Players were asked whether the activity in which they had participated was similar to any aspect

(Text continues on p. 294.)

TABLE 11.3 *Dictator Game Player 1 Offers*

Regression Statistics	
Multiple R	0.430911898
R-squared	0.185685064
Adjusted R-squared	−0.02674492
Standard error	1.880366735
Observations	30

ANOVA

	df	SS	MS	F	Significance F
Regression	6	18.54374836	3.090624727	0.874100072	0.528871761
Residual	23	81.32291831	3.535779057		
Total	29	99.86666667			

Variables

	Coefficients	Standard Error	*t*-Stat	*p*-Value	Lower 95 Percent	Upper 95 Percent
Intercept	4.452334427	1.479664029	3.009017142	0.006256418	1.39141619	7.513252664
Age	−0.223390243	0.382299096	−0.584333693	0.564683926	−1.014236173	0.567455687
Sex	−1.39900056	0.709206636	−1.972627567	0.060676599	−2.866106256	0.068105136
Education	0.270660022	0.534076271	0.506781592	0.617132303	−0.834160913	1.375480958
Income (U.S. dollars)	0.022697379	0.473512318	0.047934083	0.962182582	−0.956837476	1.002232234
Household wealth (U.S. dollars)	−0.138616782	0.403630439	−0.343424997	0.734398204	−0.973589957	0.696356392
Household size	0.173836672	0.400013205	0.434577334	0.667919291	−0.653653684	1.001327029

Source: Author's compilation based on author data.

TABLE 11.4 *Ultimatum Game Player 1 Offers and Six Demographic Variables*

Regression Statistics	
Multiple R	0.575068917
R-squared	0.330704259
Adjusted R-squared	0.15610537
Standard error	1.501421211
Observations	30

ANOVA

	df	SS	MS	F	Significance F
Regression	6	25.61855662	4.269759436	1.894079976	0.125074669
Residual	23	51.84811005	2.254265654		
Total	29	77.46666667			

Variables

	Coefficients	Standard Error	*t*-Stat	*p*-Value	Lower 95 Percent	Upper 95 Percent
Intercept	4.988548531	1.181471102	4.222319548	0.000323532	2.544489357	7.432607704
Age	0.149035433	0.305255332	0.488232038	0.630007854	−0.482433329	0.780504195
Sex	0.18234423	0.566282027	0.322002502	0.750359224	−0.989099388	1.353787848
Education	−0.107805106	0.426445239	−0.252799412	0.802668921	−0.989974289	0.774364078
Income (in U.S. dollars)	−0.362364918	0.378086586	−0.958417811	0.347819319	−1.144496606	0.41976677
Household Wealth (in U.S. dollars)	0.835092089	0.322287824	2.591137573	0.016330477	0.168388934	1.501795245
Household size	−0.365384382	0.319399562	−1.143972709	0.264401763	−1.026112712	0.295343949

Source: Author's compilation based on author data.

TABLE 11.5 *Ultimatum Game Player 1 Offers and Household Wealth*

Regression Statistics	
Multiple R	0.417638925
R-squared	0.174422271
Adjusted R-squared	0.144937353
Standard error	1.511323388
Observations	30

ANOVA

	df	SS	MS	F	Significance F
Regression	1	13.51191196	13.51191196	5.915643592	0.021653983
Residual	28	63.95475471	2.284098382		
Total	29	77.46666667			

Variables

	Coefficients	Standard Error	*t*-Stat	*p*-Value	Lower 95 Percent	Upper 95 Percent
Intercept	4.335304423	0.428709542	10.11245143	7.51506E-11	3.457132747	5.213476099
Household Wealth (in U.S. dollars)	0.682589187	0.280645708	2.432209611	0.021653983	0.107712523	1.257465851

Source: Author's compilation based on author data.

TABLE 11.6 *Ultimatum Game Player 1 Offers and Land*

Regression Statistics	
Multiple R	0.647338165
R-squared	0.4190467
Adjusted R-squared	0.376013123
Standard error	1.291059221
Observations	30

ANOVA

	df	SS	MS	F	Significance F
Regression	2	32.46215106	16.23107553	9.737668172	0.000654495
Residual	27	45.00451561	1.666833912		
Total	29	77.46666667			

Variables

	Coefficients	Standard Error	*t*-Stat	*p*-Value	Lower 95 Percent	Upper 95 Percent
Intercept	6.190532371	0.633036384	9.779109907	2.28775E-10	4.891649016	7.489415726
Land holdings	−2.016487693	0.61786782	−3.263623105	0.002982439	−3.284247727	−0.74872766
Land value	0.000207403	4.74797E-05	4.36825066	0.000166068	0.000109983	0.000304824

Source: Author's compilation based on author data.

TABLE 11.7 *Ultimatum Game Player 2 MAOs*

Regression Statistics	
Multiple R	0.762716802
R-squared	0.58173692
Adjusted R-squared	0.467665171
Standard error	2.379418002
Observations	29

ANOVA

	df	SS	MS	F	Significance F
Regression	6	173.2372428	28.8728738	5.09974577	0.002038019
Residual	22	124.5558607	5.66163003		
Total	28	297.7931034			

Variables

	Coefficients	Standard Error	*t*-Stat	*p*-Value	Lower 95 Percent	Upper 95 Percent
Intercept	−1.438716943	2.105504854	−0.6833121	0.501543296	−5.805266734	2.927832848
Age	0.353773513	0.480205983	0.736712006	0.469081544	−0.642112737	1.349659763
Sex	0.402155853	1.045713495	0.38457556	0.704244335	−1.766521191	2.570832897
Education	1.112168705	0.513707096	2.164986066	0.041507142	0.046805399	2.177532012
Income (in U.S. dollars)	−0.561699555	0.513282639	−1.094327983	0.285648348	−1.62618259	0.502783481
Household wealth (in U.S. dollars)	−2.146178728	0.648170116	−3.311134955	0.003177009	−3.49040127	−0.801956187
Household size	2.626594762	0.627841596	4.18353097	0.000385396	1.324530991	3.928658533

Source: Author's compilation based on author data.

TABLE 11.8 *Ultimatum Game Player 2 Minimum Acceptable Offers*

Regression Statistics	
Multiple R	0.499650365
R-squared	0.249650488
Adjusted R-squared	0.221859765
Standard error	2.876783891
Observations	29

ANOVA

	df	SS	MS	F	Significance F
Regression	1	74.34419352	74.34419352	8.983231225	0.005785226
Residual	27	223.4489099	8.275885553		
Total	28	297.7931034			

Variables

	Coefficients	Standard Error	*t*-Stat	*p*-Value	Lower 95 Percent	Upper 95 Percent
Intercept	0.582360713	1.176509332	0.494990305	0.624611241	−1.831637009	2.996358436
Household size	1.629463031	0.543661054	2.997203901	0.005785226	0.513962703	2.744963358

Source: Author's compilation based on author data.

TABLE 11.9 *Player 1 in Dictator Game Compared to Player 1 in Third-Party Punishment Game*

ANOVA						
Source of Variation	SS	df	MS	F	*p*-Value	F Crit
Between groups	1.874260753	1	1.874260753	0.534649119	0.46750486	4.001191306
Within groups	210.3354167	60	3.505590278			
Total	212.2096774	61				

Source: Author's compilation based on author data.

TABLE 11.10 *Third-Party Punishment Game Player 1 Offers*

Regression Statistics	
Multiple R	0.470882631
R-squared	0.221730452
Adjusted R-squared	0.03494576
Standard error	18.54448318
Observations	32

ANOVA

	df	SS	MS	F	Significance F
Regression	6	2449.428586	408.2380976	1.187091137	0.345019684
Residual	25	8597.446414	343.8978566		
Total	31	11046.875			

Variables

	Coefficients	Standard Error	*t*-Stat	*p*-Value	Lower 95 Percent	Upper 95 Percent
Intercept	47.43517131	21.45297149	2.211123589	0.036398145	3.251949822	91.6183928
Age	−2.194849519	3.647908867	−0.601673342	0.552809303	−9.707858405	5.318159367
Sex	6.457709075	7.516653525	0.859120226	0.398437301	−9.023128518	21.93854667
Education	−7.121832971	3.755024472	−1.896614263	0.069491152	−14.85545057	0.611784632
Income (in U.S. dollars)	0.935240338	3.972595039	0.235423024	0.815798247	−7.246472231	9.116952908
Household wealth (in U.S. dollars)	4.763831068	3.787620316	1.257737226	0.220108685	−3.036918932	12.56458107
Household size	2.206492677	4.217351281	0.52319395	0.605446108	−6.479304805	10.892290016

Source: Author's compilation based on author data.

TABLE 11.11 *Third-Party Punishment Game Player 3 Highest Offer Punished*

Regression Statistics	
Multiple R	0.390895087
R-squared	0.152798969
Adjusted R-squared	−0.050529279
Standard error	3.016269231
Observations	32

ANOVA

	df	SS	MS	F	Significance F
Regression	6	41.02174817	6.836958028	0.751489135	0.614108263
Residual	25	227.4470018	9.097880073		
Total	31	268.46875			

Variables

	Coefficients	Standard Error	*t*-Stat	*p*-Value	Lower 95 Percent	Upper 95 Percent
Intercept	3.770671189	3.729008692	1.01117254	0.321621015	−3.909365912	11.45070829
Age	−0.360190263	0.617971902	−0.58285864	0.565209388	−1.632927209	0.912546684
Sex	0.596155372	1.182924917	0.503967212	0.618696971	−1.840124079	3.032434823
Education	0.048051517	0.596243389	0.080590441	0.936409367	−1.179934719	1.276037754
Income (in U.S. dollars)	0.945488397	0.643006723	1.470417591	0.15392353	−0.378808728	2.269785522
Household wealth (in U.S. dollars)	−0.058198881	0.605919508	−0.096050515	0.924246274	−1.306113456	1.189715695
Household size	−0.453723075	0.578509316	−0.784296921	0.440234508	−1.645185305	0.737739154

Source: Author's compilation based on author data.

TABLE 11.12 *Sursurunga Postgame Responses to the Question: "Did This Game Remind You of Any Aspect of Customary Life?" by Range of Offer*

Response	0	1	2	3	4	5	6	7	8	9	10
Related to customary life	1			1	5	6	2				
Not related to customary life	2		2	2	1	3	2		1		

Source: Author's compilation based on author data.

TABLE 11.13 *Aggregated Results of Table 11.12*

	Game Related to Customary Life	Game Not Related to Customary Life
Made middle-range (4, 5, or 6) offer	13	6
Did not make middle-range (4, 5, or 6) offer	2	7

Source: Author's compilation based on author data.
Note: Fisher's exact test: two-tailed p-value = 0.0418; one-tailed p-value = 0.0290. Both significant at 0.05 level.

of their customary life.[13] Many people gave different reasons for why the game did remind them of customary life, but for my purposes here, all usable answers are divided into two groups: the game did seem related to at least one aspect of customary life, or the game did not seem related to any aspect of customary life.[14] Table 11.12 contains the results.

Notice that the offers of those who said that the game did seem related to at least one aspect of customary life clustered in the middle range. Table 11.13 is constructed from aggregating these results.

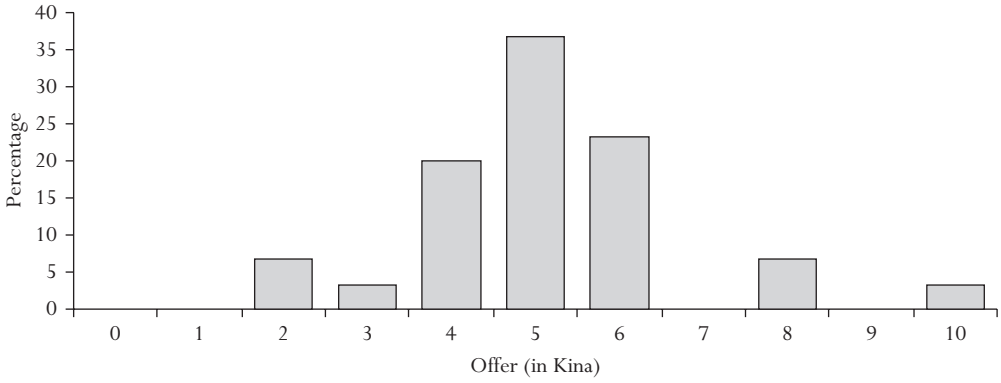
The best way to account for this significant result is that for those people who experienced the DG as cognate to an aspect of traditional life, the EM cultural template for social relations that emphasizes equal (or near-equal) sharing seems to have trumped other considerations, resulting in distributions at or near fifty-fifty.

Although this explanation is a reasonable one, it suffers from the disadvantage of relying on information that was gathered, in some cases, hours after the game was played, which left quite a bit of time for players to mentally reconstruct the event in terms that were comfortable and familiar. Furthermore, even if players reported a similarity between the game and an aspect of customary life after the game, it does not mean that that similarity was salient for them at the time they made their decision about what to offer. These not inconsiderable difficulties aside, however, I do think that the nonrandom outcome strongly suggests the salience of EM as an explanation more strongly than any other possibility.[15]

The Strategy Method Ultimatum Game

As with the DG, the modal offer of player 1s in the strategy method ultimatum game was 5 kina (see figure 11.8), but the mean was about 1 kina higher: 5.13 (or 51.3 percent of the stake). The results from the UG show that household wealth was an important variable in player 1 offers in that higher offers are correlated with greater household wealth (see table 11.4). Household wealth is importantly a function of the amount of land holdings (the correlation between these two variables is $r = 0.7773$) and the value of land ($r = 0.9231$).[16] Land, therefore, is the key

FIGURE 11.8 *Sursurunga Sample: Ultimatum Game Player 1 Offers*



Source: Author's compilation based on author data.

consideration here, as it underlies and indeed produces household wealth. Any answer to the question of why it is that household wealth seems to produce higher offers must begin with land and landownership.

Salient categories of land among the Sursurunga include, in addition to residential village land, uncultivated land owned by a descent group that can be used by any member of the matriclan; garden land; and land upon which cash crops are grown (Bolyanatz 1998; Bolyanatz 2000, 47–63). The last is by far the most valuable, in large part because the value of the cash-producing species that grow on it is folded into the value of the land. (The New Ireland provincial government's standard catalog of the values of cash-producing species is used in determining appropriate compensation in the case of litigation.) Generally, those individuals with control over more hectares also have land that is worth more ($r = 0.8496$), since cash-cropping is considered to be the best use of land once subsistence needs are met.

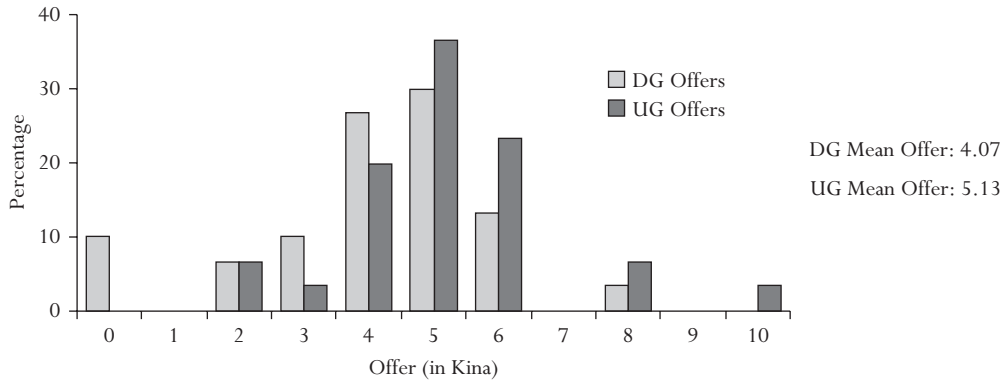
One possible explanation—although there is no evidence that makes it compelling—for the land control–cum–household wealth association with high offers is that a degree of obligation on the part of those who are relatively well off to be more generous is consistent with EM. I am unable to determine with any confidence, however, whether EM was salient at the time subjects made their decisions during the UG.

Comparing the Dictator Game and the Ultimatum Game

Figure 11.9 shows that player 1s from both the DG and UG had modal offers of 5 kina. Other than a slightly higher mean offer, there was no appreciable difference between the two games in this regard. The only factor that seemed to affect DG offers was, as noted in the discussion of tables 11.3 to 11.11, an individual's sense of traditional sharing patterns, which is deeply influenced by an EM cultural and moral template. The modal offer of 50 percent for the UG suggests that this same template influences behavior there too, although the higher UG mean offer points to other considerations as well.

This begs the question of why economic variables (that is, the general reliance on cash-cropping relative to subsistence farming) seem to affect offers only in the UG. The short answer to this question is that economic considerations are fundamentally *social* considerations. That is,

FIGURE 11.9 *Sursurunga Sample: Dictator Game and Ultimatum Game Player 1 Offers*



Source: Author's compilation based on author data.

they always involve the agency of other people (which is, of course, absent in the DG): once fundamental subsistence needs have been met, there are no important nonsocial uses of wealth.

Ultimatum Game Player 2 Results

Figure 11.10 shows the frequency of offers that were acceptable to player 2s. Tables 11.7 and 11.8 show the regressions for player 2s' minimum acceptable offers. Education drops out as significant in other regressions, as does household wealth. Household size, on the other hand, is important: the larger the household, the more likely a person was to accept unfair offers in the Sursurunga sample. At first, this might seem counterintuitive: would we not expect attention to fairness in sharing to be heightened where there are more people to share with? But it could be argued equally that a household with more members generates a certain degree of trust that others will not needlessly withhold resources and that a stingy offer must have a good reason behind it. I have no other explanation at hand.

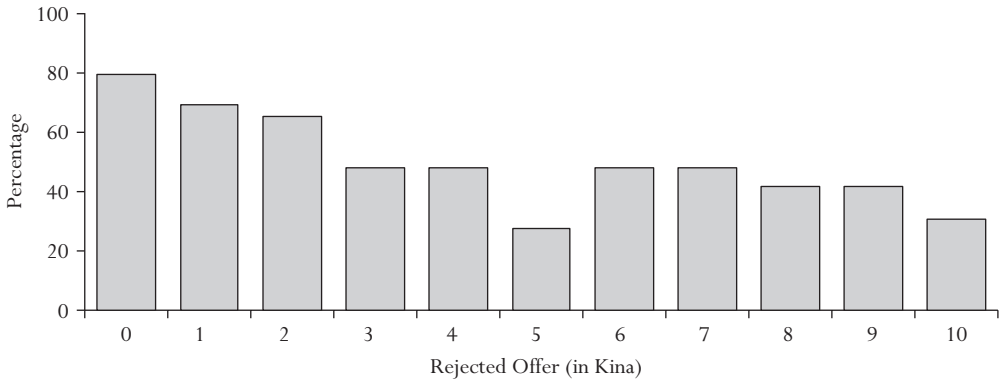
Figure 11.11 represents the minimum acceptable offers of player 2s in the Sursurunga sample; the mean MinAO was 3.72 kina (or 37.2 percent of the stake). I should note that four people rejected all offers except the 100 percent offer of 10 kina. (I address these cases later in the chapter.) Another anomalous result is that five people said that they would have accepted any offer, including 0 kina. Postgame interviews indicated the presence of a general tendency to abandon any agency in the game, best exemplified by the individuals who said, "The other person is in charge of the money; what they do with it is their business. So I will accept any decision made."

The Sursurunga data have by far the highest rate of rejection of 50 percent offers among player 2s in the cross-cultural sample. The anomalous high rate of rejection of offers of 50 percent is problematic, and is discussed later.

The Third-Party Punishment Game

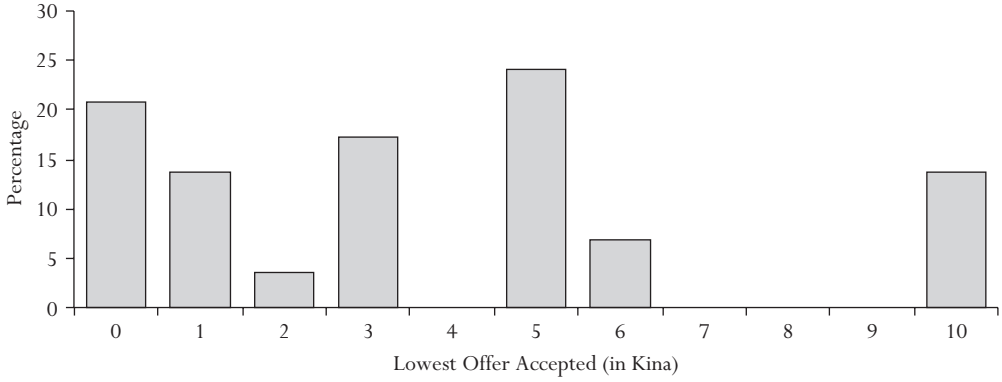
The third-party punishment game results are shown in figures 11.12 and 11.13. Figure 11.12 shows the offers made by player 1s; figure 11.13 shows the offers that provoked "punishment," if any, meted out by player 3s.

FIGURE 11.10 *Sursurunga Sample: Ultimatum Game Player 2 Rejected Offers*



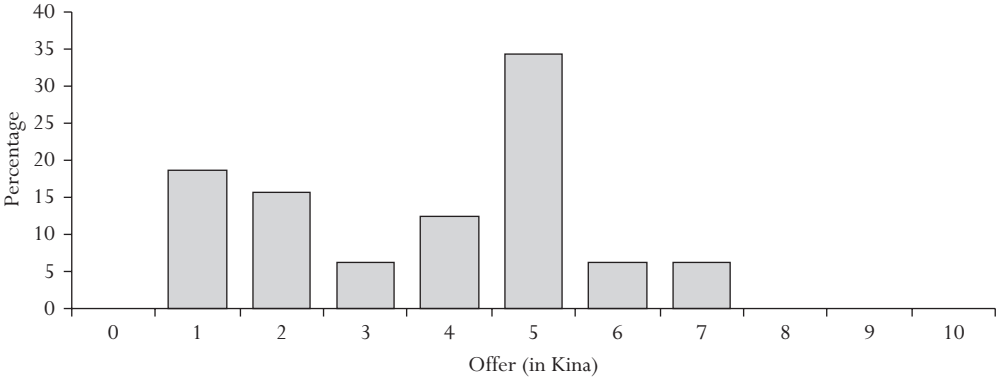
Source: Author's compilation based on author data.

FIGURE 11.11 *Sursurunga Sample: Ultimatum Game Player 2 Minimum Acceptable Offers*



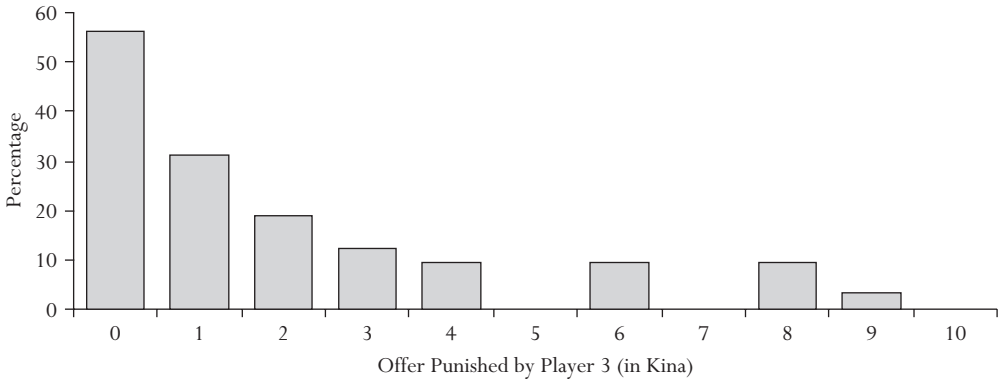
Source: Author's compilation based on author data.

FIGURE 11.12 *Sursurunga Sample: Third-Party Punishment Game Player 1 Offers*



Source: Author's compilation based on author data.

FIGURE 11.13 *Sursurunga Sample: Third-Party Punishment Game Player 1 Offers Punished by Player 3*



Source: Author's compilation based on author data.

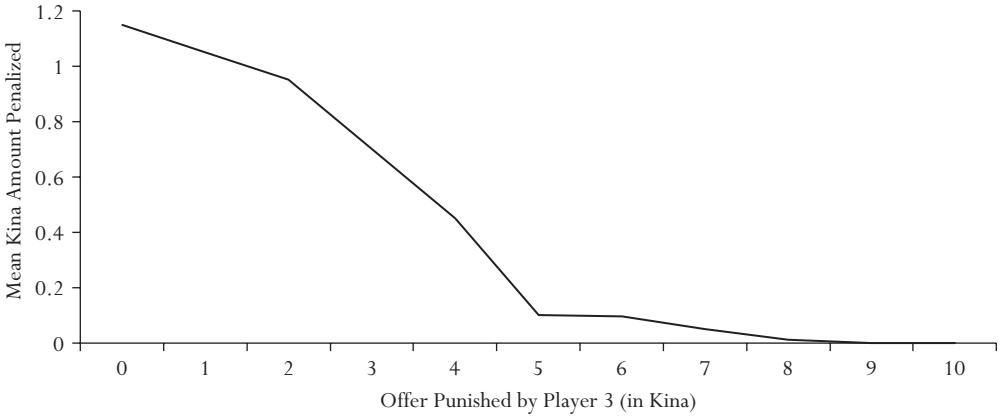
The mean offer for player 1s in the TPG was 3.72 kina, or 37.2 percent of the stake. This figure is lower than player 1 offers in the UG, which is expected, but also lower than player 1 offers in the DG, which is *not* expected. In fact, however, the difference between the DG and TPG player 1 offers is not statistically significant ($p = 0.4676$), and given the fact that there are no demographic variables that suggest a reason for this outcome, it seems safe to assume that this is an instance of sampling error. In effect, then, player 1 offers in both the DG and TPG are the same, which means that the existence of a punishing third party was negligible in decisionmaking. And as in player 1 DG offers, a regression of the six key variables (age, sex, education, income, household wealth, and household size) shows no significant role (see table 11.10).

The mean offer amount that was punished was 3.03 kina, or 30.3 percent of player 1's stake. Clearly, player 1s' extraordinarily low offers were punished with more consistency. Table 11.11 shows regressions of player 3 decisions and the six variables. And as far as the similarities between player 1 offers in the DG and TPG go, it is worth noting that no player 1 in the TPG offered 0 percent of the stake to a player 2. It is also worth noting that the pattern of TPG punishing is quite consistent with that reported by Helen Bernhard, Ernst Fehr, and Urs Fischbacher (2006) from Highland New Guinea. In that project, players 1, 2, and 3 were not always from the same ethnic group, depending on condition. Another difference was that a player 3 who chose to punish player 1 was able to do so by taking either 5 or 10 kina from player 1. While player 3 engaged in stronger punitive action when players 2 and 3 were from the same group, the decay of interest in punishing was consistent across all conditions and resembles very closely the Sursurunga TPG results (see figure 11.14, adapted from Bernhard, Fehr, and Fischbacher 2006).

Figure 11.15 compares the offers of all player 1s across all games.

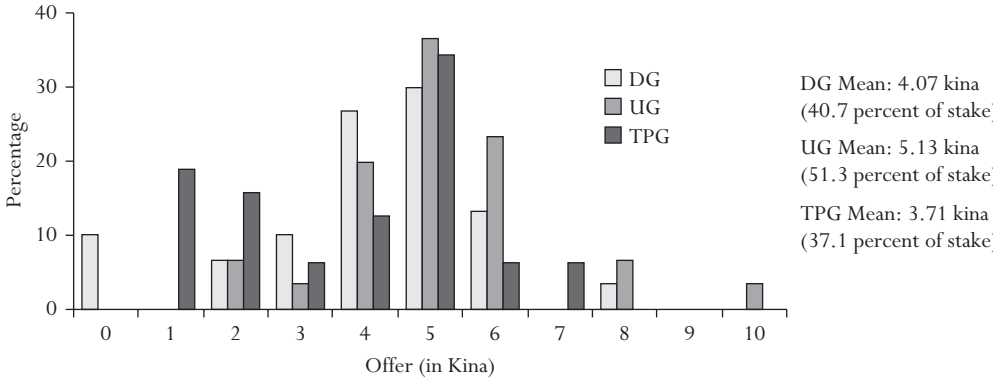
In each game, the most frequent offer was the fifty-fifty offer. This is consistent with the results from many of the other field sites and strongly reinforces the suggestion that there is an EM template at work among the Sursurunga, resulting in a default predisposition to split resources evenhandedly, as well as the affective states associated with that preference.

FIGURE 11.14 *Third-Party Punishment Game Results from Highland New Guinea*



Source: Author's adaptation of Bernhard, Fehr, and Fischbacher (2006), 219.

FIGURE 11.15 *Sursurunga Sample: Player 1 Offers Across All Three Games*



Source: Author's compilation based on author data.

DISCUSSION

Chapter 4 describes the main empirical findings of the comparative study; I will not reiterate them here. Instead, I discuss the anomalies that appear within the Sursurunga sample that are unexpected vis-à-vis the overall patterns that have been reported.

High Sursurunga Dictator Game Offers and Low Market Integration

Chapter 4 reports the strong correlation between DG offers and market integration (table 4.2) across societies. In other words, in the overall sample of groups, the lower the MI, the lower the

offers in the DG—and quite strongly so ($r = 0.681$). The Sursurunga sample, however, is inconsistent with this association. (Indeed, taking the Sursurunga out of the overall sample of groups makes the correlation jump to $r = 0.740$.) In short, the Sursurunga act quite differently in this regard, relative to other groups, in that a low MI score (24, the sixth-lowest among the fifteen groups studied) occurs with a high mean DG offer of 41 percent of the stake—the fifth-*highest* DG offer, tied with the other Melanesian society, the Au (chapter 7, this volume, available at: http://www.russellsage.org/Ensminger).

This anomaly is overdetermined and springs from two sources. First is the fact that the Sursurunga have a world religion score of 1.0, and as described in chapter 4, WR is a driver of higher offers across societies. Second, and almost certainly more profound, is the Sursurunga emphasis on EM. When the postgame comments are examined, it is easy to see that EM considerations motivated much of people's behavior in the games—keeping in mind, of course, that, as mentioned earlier, people may have mentally reconstructed their own behavior and provided post hoc rationales for what they did. The comments of player 1s who offered 50 percent or more of the stake reveal the salience of the EM relational template for the Sursurunga. Noteworthy aspects of these comments have been italicized.

"I wanted to help the other person." (80 percent)

"*I wanted to give five* but made a mistake." (60 percent)

"I wanted to be generous." (60 percent)

"You can't give someone too little." (60 percent)

"*Giving the same amount* that you keep *is what everyone else does;* you have to give more than others." (60 percent)

"It is *important to share equally.*" (50 percent)

"I wanted *both sides to be the same*." (50 percent)

"I wanted to be *fair and equal*." (50 percent)

"I didn't want to feel *ashamed of not giving fifty-fifty.*" (50 percent)

"I wanted to be *fair;* I wanted to provide *equal amounts.*" (50 percent)

"I wanted *both* of us to *have the same*." (50 percent)

"I wanted *everyone* to have an *equal share*." (50 percent)

"*Equal shares are important*." (50 percent)

[no comment] (50 percent)

Even some of those who offered 40 percent of the stake articulated a starting point guided by the EM norm and explained their deviation from that norm. Note that these comments rely on an implicit fifty-fifty default. Again, salient aspects of these comments have been italicized.

"I *want to be a person who shares* [*equally*], but I also want the most for myself."

"I *wanted to share* [*equally*], but I wanted to have more than the other person too."

"I wanted a little more than *fifty-fifty.*"

"Since the money began with me, it is all right for me to have a little more [than *half*]."

"Because the money was given to me, I am the *more important,* so I get to keep the *most*."

TABLE 11.14 *Sursurunga Player 2 Rejections of Fifty-Fifty Offers in the Ultimatum Game*

Subject Number	Accept 0 Percent	Accept 10 Percent	Accept 20 Percent	Accept 30 Percent	Accept 40 Percent	Accept 50 Percent	Accept 60 Percent	Accept 70 Percent	Accept 80 Percent	Accept 90 Percent	Accept 100 Percent
1				Yes	Yes						
2	Yes										
3							Yes	Yes	Yes	Yes	Yes
4							Yes	Yes	Yes	Yes	Yes
5											Yes
6											Yes
7											Yes
8											Yes

Source: Author's compilation based on author data.

In sum, there was a strong sense that a fifty-fifty split is the ideal—as is the case for the EM social relations template—and it was articulated even by some people who did not conform to the norm and failed to make the fifty-fifty offer. It is then no surprise that, even with a relatively low MI score of 24, the Sursurunga DG offers would be so high (41 percent) that they approached 50 percent.

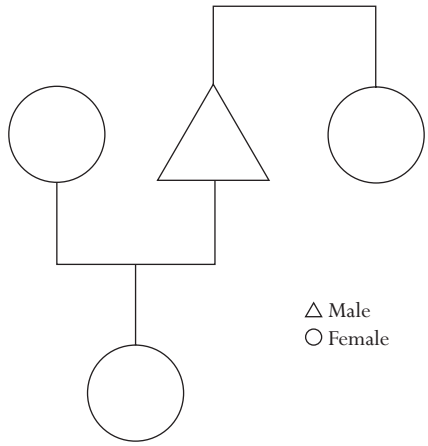
Player 2 Rejections of Fifty-Fifty Offers

Perhaps one of the most surprising results is the 28 percent (eight out of twenty-nine) rate of rejection of offers of 50 percent of the stake by player 2s. One possible explanation is that these player 2s simply did not understand the game. This seems not to be the case, however, at least not for all of them. For one thing, between those players who accepted offers of 50 percent and those who rejected offers of 50 percent, there is no statistically significant difference ($r = 0.077$) in the number of examples required before the game could proceed, indicating that understanding was unlikely to be the predominant basis for these results. Those individuals who rejected fifty-fifty offers also fail to show any age, sex, education, or economic similarities. Indeed, when level of education is considered, a not significant but clear trend is that those with *more* education were likely to reject offers of 50 percent.

Although this result offers compelling reasons to abandon any effort to find a trend in player 2s rejecting 50 percent offers, it remains possible that some players misunderstood the game. Two player 2s who rejected 50 percent offers did exhibit a pattern, reinforced by their postgame comments, that suggested a lack of understanding in that the only offer they accepted was 100 percent (subjects 7 and 8 in table 11.14). Both players revealed in their postgame interviews that they imagined that they were maximizing their income with a response of only 100 percent. Their correct answers in the pregame trials, then, could only have been "lucky guesses," unless something later interfered with their working memory.

Postgame interviews also provided some insight into other subjects' reasoning. Showing some confusion, subject 1 (a thirty-two-year-old female) indicated that she wanted more than 50 percent, but actually accepted less. When she made the decision to reject, she may have thought she had accepted—that is, that she misunderstood. But if this is so, then her pattern would have been to accept 0 percent, 10 percent, and 20 percent, which she did not. It is almost as if her understanding was intermittent.

FIGURE 11.16 *The Relationships of the Four Sursurunga Subjects Who Rejected All Offers Except 100 Percent in the Dictator Game*



Source: Author's figure.

On the other hand, subject 2 (a twenty-eight-year-old male) did say that he had misunderstood, having realized as much almost immediately after the experiment had been conducted. This would have made his response equal to those of subjects 5 through 8.

Subject 3 (an eighteen-year-old male) said that he believed that player 1 was entitled to just a bit more than 50 percent. With the same pattern of acceptances and rejections, but with different reasoning, subject 4 (male, age forty-one) simply said, "I wanted the greater share." (Again, note the EM default.)

Of the eight people who rejected offers of 50 percent, four (subjects 5 through 8) rejected *all* offers except the 100 percent offer of 10 kina. These four closely related individuals (see figure 11.16) offered postgame explanations of their decisions that were almost identical: "I wanted all or nothing."

It is easy to dismiss these four individuals as exceptions, especially since, other than their relatedness, there is no demographic or economic reason for their choices. Contamination can be discounted as an explanation because the games were played so closely together—back to back in the case of the father and daughter and then again later the two sisters-in-law—that there was simply no time for it, even if the opportunity to interact had been available. In the end, I cannot fully explain this phenomenon. I can only say that these individuals were somewhat socially peripheral, and this apparent "demand behavior" (see chapter 3 for similar responses in Missouri) is consistent with how I had known them over the past two decades. The male was a renowned hothead who consistently violated local norms related to peaceful conflict resolution. That it would be these four people, then, demanding all or nothing in the context of this game is not particularly surprising to me, nor would it be to many people in the villages where these individuals were known.

The Rejection of Hyper-fair Offers by Player 2s

The rejection of hyper-fair offers is not unique to the Sursurunga in our cross-cultural sample. However, since the Sursurunga were included in the project in order to determine whether the

phase 1 results from mainland New Guinea (Tracer 2004) would be replicated (see chapter 1), it is worth addressing the phenomenon of hyper-fair offer rejection. As with other aspects of Sursurunga behavior in these games, the rejection of ultra-high or hyper-fair offers by player 2s in the UG is also consistent with an EM norm, such that a deviation from fifty-fifty introduces the possibility of experiencing an unsettled disquiet or dissatisfied affective state. Here are some UG player 2 responses to the question: "How would you have felt if the other person had offered you [the maximum] 10 kina?"

"I would feel sorry that the other person wouldn't have any."

"Not too good. [*Interviewer: In what way?*] I would have felt ashamed."

"I would worry about the other person."

"Ashamed, and pity for the other person."

"I'd be happy, but it would be mixed with shame because the other person has nothing."

"It doesn't feel right that I should get it all."

"Not good, because then player 1 would have nothing."

"A bit ashamed, because the other person has nothing."

"Happy, but pity for the other."

"Happy, but a little embarrassed and sorry for the other person."

The sense that something would be relationally amiss in accepting an ultra-high offer is a corollary of the fifty-fifty norm and is also reflected in both the rejections of ultra-high offers and the comments about such offers.

As noted in chapter 4, the player 2 acceptance rates in the UG as played by Sursurunga subjects conform to a pattern found elsewhere. The Sursurunga results indicate that David Tracer's (2004) Au and Gnau outcomes were not anomalous: in all three of these societies, there exists a strong wish to avoid receiving too much. In a part of the world that has long featured competitive forms of feasting (Young 1971) and extravagant exchanges (Strathern 1971), there is really little surprise in these data. Indeed, giving-with-a-purpose has become institutionalized in at least one aspect of Sursurunga life, and it is the strength of the EM relational pattern that makes an unbalanced hyper-fair offer—and especially an intentionally unbalanced offer—understood as a premeditated effort to utilize the EM norm for one's own purposes. The Sursurunga institution known as gomgom is a context in which unbalanced munificence is understood and experienced as an attempt at the public humiliation of a rival, enemy, or detractor. A case from 1998 exemplifies how gomgom constitutes aggressive giving-with-a-purpose among the Sursurunga.

Sokip (a pseudonym, as are other names in this account), in his late twenties and a father of two children, is at home one afternoon and decides that he will contribute shellfish from the reef to the evening meal. Because the exposed reef is very sharp, he borrows his wife Tinkus's flip-flops to search for shellfish on the reef. Not too long after Sokip leaves home for the reef, Tinkus returns from the garden, searches for her flip-flops, and becomes very frustrated at not being able to find them. Sokip returns home with the flip-flops, and Tinkus's frustration turns to rage directed at Sokip. Tinkus screams at Sokip, indicting him for having no respect for other people's property and being, in general, a ne'er-do-well. The screaming is loud enough that Sokip's mother and brother, Tinamel and Tobim, respectively, who live a few meters away,

come over and try to settle things down. This only enrages Tinkus further, and after blasting her brother-in-law with a few choice words, she even takes a halfhearted swipe with a bush knife at Tinamel, all the while using very abusive language.

Things eventually simmer down, but bad, awkward feelings remain in the days and weeks that follow. Tinkus and her next-door-neighbor mother-in-law (a traditional work unit) observe a chilly truce, but no one is comfortable with the situation, least of all Sokip, whose wife and mother live next to each other and are not getting along. In order to try to resolve the situation, Tinamel decides to sponsor a small (three pigs) gomgom feast.

For the gomgom, everyone in the village (about 110 people) is publicly invited. A date is set, and plans are put into motion. Others can provide supplementary food, but the enatic unit of Tinamel, Tobim, and Sokip are primarily responsible for the feast. The villagers will spend the day eating (and eating well) and visiting in a festive atmosphere. The exception to this will be Tinkus. The decision of her husband's lineage to sponsor a gomgom places her on the horns of a dilemma. If she participates and (publicly) enjoys the largesse of her mother-in-law and her mother-in-law's kin, she cannot continue her feud with her mother-in-law, fueled with glares and steely silence. To be given something and to reciprocate with ill will is simply not done—the damage to her reputation would be profound and nearly irreparable. On the other hand, if she chooses not to participate in the gomgom, she will be making a public declaration that she is untroubled by the notion that the hard feelings could continue indefinitely, even though her antagonist is ready to bury the hatchet.

Tinkus is in a lose-lose conundrum: if she fails to attend the gomgom feast and participate, she thereby publicly rebuffs her affines' attempt to make things better. If she does attend and participate, she is thereby required—upon pain of serious damage to her reputation—to reestablish a normal relationship with her mother-in-law. They have her. In the gomgom context, (over-) giving is an unfriendly, even somewhat hostile, act because it is an attempt to exert control over the behavior of another.[17] In short, through a magnanimous, over-the-top (and utterly unilateral) gesture, giving too much actually benefits the giver rather than the receiver. This, then, is why some (but not all) of the Sursurunga player 2s in the UG would not accept offers that were too high: the affective consequences would have been unpleasant. It is also probably part of the reason why player 1s seldom gave hyper-fair offers (that is, they had little wish to "aggress" against an anonymous other), but that cannot be demonstrated.

CONCLUSIONS

The references to embarrassment and shame in some of the statements gathered after the games bring us to a concluding discussion that centers on Sursurunga emotion terms.

When I asked people to elaborate on "feeling shame," they offered the indigenous term "rumrum," an intransitive verb that can also be glossed as "shyness" or "embarrassment." Rumrum is unpleasant anxiety about what others might think or say and is cognate (not lexically, but in terms of experience) with "vavirvir," from the nearby and historically related Tolai (Epstein 1992, 221–29). For the Tolai, vavirvir is the unpleasant "awareness of the gaze of others" in the context of risking "one's breach of custom or propriety" (Epstein 1992, 221). Rumrum, in short, is a hypercognized concern for one's reputation.[18]

"Rumrum" is the term most often used in the context of a botched feast—at least by men. "We would feel shame [rumrum] if we didn't have a proper feast," said one man. In other contexts, anxiety over avoiding rumrum (for example, by being thought of as a cheapskate) is a powerful motivation to not withhold resources—or, perhaps more to the point, to avoid

being seen as a withholder of resources. And this is precisely what can be seen in many of the responses provided: the unpleasant affect of rumrum is experienced when an economic imbalance is decidedly in one's favor. This affective feature of an elementary social relation—in this case, EM—has a significant proximate causal influence on behavior (Fiske 2002).

Contrasting with rumrum is "laes," or "feeling pride." In gomgom, there can be a strong sense of satisfaction in performing acts that cause one to suffer economically but flourish reputationally; for the Sursurunga, it really *is* better to give than to receive. Sponsoring a successful mortuary feast also generates the pleasant affect of laes, in that one's reputation is likely to be enhanced but also, more pointedly, in the absence of fodder for infamy in the eyes of others. Unlike the self-aggrandizing behavior found in other parts of Melanesia, established leaders on New Ireland—"big-men," if one prefers—are far more interested in avoiding rumrum than in laes-grasping (Clay 1992).

Laes, as one of the more "noble" emotions, is seen to have its source in the center of the breast, while rumrum and the more generic cover term "bál i sák" (the same term, "one's belly is bad," used earlier to describe the feeling one has when receiving a hyper-fair offer of pork) are grounded, like most other less noble emotions such as anger and lust, in the belly. The related wishes to avoid rumrum and to experience laes together form an important part of the motivational basis for EM behaviors, including fifty-fifty offers in the DG, UG, and TPG. (It is less clear what emotion drives player 3s in the TPG, although the working hypothesis is that it is the same.)

When it comes to postgame comments about the sentiments motivating people toward balance (rather than avoiding imbalance), the most common response was the expression "marimari," which has entered New Ireland from Kuanua, a related language on neighboring New Britain via the Methodist (now United) Church. The word is probably best translated into English as "mercy," but it also has connotations of "sympathy" and "pity." The word is used in Neo-Melanesian speech (as in "marimari bilong God," or "God's grace") rather than in Sursurunga and rightly belongs in that lexicon. What is striking, however, is that people did not use the Sursurunga term "mámnai," which is a transitive verb (and has an intransitive form, "armámna," that functions as a noun) used to express reasons for helping people in many different everyday contexts: house-building, providing tobacco or betel nut, carrying a load, and so on.

Although the postgame interviews were conducted in Tok Pisin, when people used words that I knew had wider semantic domains, I asked for vernacular terms, and when I asked people who said they "had pity" and wanted "to help" others for clarification, they responded, "Marimari," almost every time. The easiest—and, I think, best—explanation for the preference for marimari over mámnai or armámna is that marimari is associated with church. (Until around 2008, the hymnal used in United Church services each Sunday and in numerous midweek services was in Kuanua, the language of the Tolai on the Gazelle Peninsula of neighboring New Britain.) In short, there seems to be something of a "church-morality-sharing" suite of understandings that I believe coalesced with the arrival of Christianity into an EM template.

The Sursurunga data show modal offers of fifty-fifty in each of the experimental games. Furthermore, this norm is not profoundly affected by demographic or economic variables, and a strong EM priority results not only in modal offers of 50 percent but also in higher-than-expected (that is, higher when the MI of 24 is considered, cross-culturally) rates of rejection and punishment of offers that stray too far from that norm. A strong preference for equal matching is very clearly a key driver in fifty-fifty offers. The same can also be said of a world religion (Henrich et al. 2010), in the presence of which the salience of marimari also predisposes people to produce higher offers and, as player 3s, to punish at higher levels than would be expected in a small-scale society that is relatively underintegrated into the world of cash-based markets.

NOTES

1. I became familiar with the Sursurunga during a field trip from November 1989 to March 1992, and that familiarity grew with subsequent field trips in 1998, 2002, 2003, 2005, 2009, two trips in 2010, and one more in 2013. See Bolyanatz (2011) for a recap of my changing role as an ethnographer there.
2. I also carried out the DG and UG with betel nut (*Areca catechu*), an everyday item of exchange throughout much of the region. This chapter describes only the results of the games, including the TPG, played with cash. Elsewhere I address the betel nut games and provide a comparison of the results using cash and betel nut as exchange media (Bolyanatz 2010).
3. For more detailed discussions of the Sursurunga area as well as the ethnography of the people who live there, see Hutchisson (1984, 1986), Jackson (1995), and Bolyanatz (2000).
4. This count of 157 people includes those who typically live elsewhere much of the year, including students and those whose employment takes them to other parts of the country for significant periods.
5. Later in the chapter, I give one example of a rare instance of pork being consumed under nonmortuary circumstances. It is almost always boars that are hunted. Local methods of pig husbandry rely on wild boars to inseminate village sows. Pigs of both sexes are allowed to forage for food in the bush throughout the day. Sows deliver their litters in or around the village, and the piglets learn quickly to stay near food sources—either their mother or the humans who tend her. Male pigs are later castrated so that they do not "go wild" and will return to the village with the females each evening. Every now and then, however, a male is not castrated soon enough (the norm is around eight months) and does "go wild."
6. Sometimes Namatanai is an indirect source of goods, as when local store owners buy products at Namatanai for later resale in distant villages.
7. In fact, a more accurate and more literal rendering is "the belly bads." Sursurunga generally does not have adjectives as an English speaker might think of them. Rather, intransitive verbs are used to convey characteristics of objects and people.
8. The number 125 represents only those individuals who were engaged in decisionmaking: player 1 in the DG (N = 30), player 1 in the UG (N = 30, most of whom also served as player 1 in the DG), player 2 in the UG (N = 29), player 1 in the TPG (N = 32), and player 3 in the TPG (N = 32).
9. Since my original research stint among the Sursurunga was under the auspices of the Summer Institute of Linguistics, a mission and research organization, it is not impossible that unbelievers did not feel free to express their absence of belief to me. I am inclined, however, to reject this explanation for my finding that 100 percent of the Sursurunga claim to be Christians, since other groups—including the other two Oceanic population samples, the Au and the Yasawa—report the same thing.
10. Tok Pisin's originated with the Yankee whaling vessels of the 1840s (Keesing 1988). Young men from various Pacific Islands were hired to work on these ships, and the patois that emerged was the beginnings of the creoles known as "pidgins" in different locations, including Hawaii, the Solomon Islands, and Vanuatu. The Papua New Guinea version—Tok Pisin, or Neo-Melanesian—has its historical roots in the New Britain and New Ireland region, giving this part of Papua New Guinea a long history of familiarity with Tok Pisin. My estimate is that anyone born since the end of World War II and native to New Ireland speaks Tok Pisin.
11. In other words, even a person listed as having undergone only one example had had the benefit of the group teaching, three examples in which I told the outcomes, and four examples in which that person told me the correct outcome.
12. Regressions were made with rescaled data in which all results were divided by the standard deviation of a particular variable.
13. The phrase "customary life" is a translation of "laip bilong ples" (village life) in Tok Pisin and captures the connotations of both "everyday life" and "traditional life."
14. Usable responses are those that were not versions of "I don't know" or "I can't decide."
15. Since the same reservations with regard to the postgame interviews could be registered for each of the experimental games, there is no need to repeat them later.
16. "Land holdings" refers to descent group–owned land that is consistently used without challenge.
17. In the end, Tinkus did appear at the gomgom and participated fully. I left New Ireland several days after this event and so have no idea of the final denouement, if any.
18. For the coining and articulation of the twin concepts "hypercognition" and "hypocognition," see Levy (1973).

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