

RICH Economic Games for Networked Relationships and Communities: Development and Preliminary Validation in Yasawa, Fiji

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Matthew M. Gervais^{1,2}

Abstract

Experimental economic games reveal significant population variation in human social behavior. However, most protocols involve anonymous recipients, limiting their validity to fleeting interactions. Understanding human relationship dynamics will require methods with the virtues of economic games that also tap recipient identity-conditioned heuristics (RICHs). This article describes three RICH economic games—an allocation game, a taking game, and a costly reduction game—that involve monetary decisions across photos of one’s social network, integrating recipient identities while maintaining decision confidentiality. I demonstrate the ecological validity of these games in a study of male social relationships in a rural Fijian village. Deciders

¹ Department of Anthropology, Center for Human Evolutionary Studies, Rutgers University, New Brunswick, NJ, USA

² School of Human Evolution and Social Change, Arizona State University, Tempe, AZ, USA

Corresponding Author:

Matthew M. Gervais, Department of Anthropology, Center for Human Evolutionary Studies, Rutgers University, New Brunswick, NJ 08901, USA.

Email: matthew.m.gervais@gmail.com

readily map these games onto daily life, and target earnings vary widely; consistent with ethnography, relative need is the primary rationale for decisions across the games, while both punitive and leveling motives drive reduction behavior. Consequently, altruism and spite are both elevated relative to anonymous target games in neighboring villages.

Methodological pluralism is a hallmark of anthropology, alongside holism, multivocality, and reflexivity. Among the newest methods in the anthropologist's repertoire are experimental economic games. These methods complement interviews and observations by generating incentivized behavioral data for the comparative study of social norms and motives.

Economic game studies in anthropology have typically employed two forms of anonymity: *decider anonymity*, in which decisions remain confidential (though see Hill and Gurven 2004); and *target anonymity*, in which participants make decisions toward unidentified targets (though see Rucas et al. 2010). Decider anonymity mitigates exogenous incentives, isolating social motives for altruism, fairness, or advantage (Camerer and Fehr 2004). Target anonymity “forc[es] players to default to local norms for dealing with people outside durable relationships” (Henrich et al. 2010:1482). With these design features, economic games have made groundbreaking contributions to the study of one-shot altruism. Using protocols standardized across diverse populations, evolutionary anthropologists have shown that humans ubiquitously engage in altruism and costly punishment in anonymous one-shot encounters, while population variation in such behaviors is predicted by market integration, religion, demography, and ecology (Ensminger and Henrich 2014; Henrich et al. 2004; Henrich et al. 2010; Lamba and Mace 2011; Marlowe et al. 2008).

Considering human sociality more broadly, there are compelling reasons to extend economic game methods beyond anonymous interactions while preserving their utility for comparative anthropological research. Most significantly, the *external validity* of anonymous games—the generalizability of their results to other situations or samples—may be limited, because their *ecological validity*—their mapping onto naturalistic situations—may vary systematically across populations. Within the stark confines of economic games, participants must apply whatever interpretations and heuristics their own experiences provide (Hagen and Hammerstein 2006). While large societies furnish generalized norms and institutions to facilitate interactions among strangers, most human communities are patterned by diverse relational sentiments and norms conditioned on roles, statuses, and states,

including cultural kinship (Chibnik 2005; Fiske and Fiske 2007). Accordingly, the most consistent population-level predictor of behavior in anonymous target games is precisely the presence of institutions that facilitate interactions among strangers (Henrich et al. 2010).

Results from such games may well generalize to naturalistic behavior in impersonal interactions (Franzen and Pointner 2013; Nettle et al. 2011), but they often fail to generalize to richer social contexts (Gurven and Winking 2008; Wiessner 2009), especially personal relationships (Sønderskov 2011). Even in large societies, schematic identifying information about targets, such as their relative status, age, or social distance, greatly influences economic game decisions (Engel 2011). Games devoid of relational context may tap the generalized norms present in some societies, but they are ill-equipped to capture the diversity of social norms and relational motives across societies.

The present study adapts economic game methods to investigate cooperation and punishment within enduring networked relationships, advancing the anthropological project of mapping and explaining behavioral variation across societies. I describe three recipient identity-conditioned heuristic (RICH) economic games designed to tap RICHs—social decision-making processes that integrate interpersonal identities, including endogenous sentiments toward particular people, and norms pertaining to others' states, roles, and statuses. The games—an allocation game (AcG) similar to an N -recipient dictator game (DG), a taking game (TkG) similar to the “Social Strategies Game” (Rucas et al. 2010), and a costly reduction game (CRG) similar to an N -recipient punishment game—measure behavioral altruism, selfishness, and spite, respectively.

These games preserve decision confidentiality, utilize monetary incentives, and are replicable across studies and sites. However, they depart from standard anonymous target games in two significant ways. First, they fully integrate recipient identities by presenting decision makers with photos of known recipients. Second, they entail parallel decisions toward an array of targets in a social network, mirroring the social trade-offs in resource allocations that characterize communities. Together, recipient identification and forced trade-offs among potential recipients capture critical moderators of decision-making within social networks, improving ecological validity and affording the study of diverse RICH norms and motives. In the metaphor of Camerer and Fehr (2004), RICH games add color and depth to the line drawings of standard games to more fully characterize human social behavior.

The data I report here are a descriptive subset of a larger study. I focus on (1) general patterns of decision-making within the three games; (2) general

patterns of target outcomes within the three games; (3) experiences of which the games remind deciders; and (4) the reasons deciders give for their game decisions. These data demonstrate the improved ecological validity of RICH games; Fijians readily map them onto their everyday experiences, and they use ethnographically salient decision heuristics to help or harm particular others. Resulting levels of both altruism and spite are higher than in anonymous target games in neighboring villages, and target earnings vary widely—underscoring the limitations of standard economic games for characterizing the RICH norms and sentiments that regulate human communities.

Methods

Sample

Fifty-four indigenous Fijian males (mean age 48, range 18–88) from one village on Yasawa Island, Fiji, participated in this study as pictured targets. Fifty of these 54 were also deciders in all three games, generating reciprocal dyadic data. These 54 men included members of all clans and households present during the study period. These were the first economic games played in this village, yet other villages in the same population, on the same island, have been well characterized using anonymous target games (Henrich and Henrich 2014), allowing some measure of comparison among their results. See the Supplemental Online Materials (SOMs) for additional ethnographic background and details about sample selection and representativeness.

Protocol

All procedures were approved by the UCLA Office for the Protection of Research Subjects. I ran the three games in order over seven weeks, each taking about two weeks to complete—first the AcG, then the TkG, then the CRG. Participants played each game in isolation, usually in their own homes, with only me and a research assistant present. I paid participants FJ\$2.00 at the time of participation in each game (FJ\$1.00 = US\$0.55), making clear that this money was separate from the game stakes and could be kept even if they elected not to participate. Each game had about one day's wage at stake (~FJ\$20.00), either as potential earnings by the decider or as potential reduction of one target's earnings.

After participants made game decisions, we asked them a series of questions about their decision-making and their perception of that game.

Participants left each interview with only the participation payment in hand; no coins were distributed at the completion of any interview session. A participant's earnings across the three games—both as decider and as target—were paid out in private in one lump at the end of the study to obscure the decisions of others. Earning distributions were never made public, and we assured participants that their decisions and earnings were confidential. We also implored participants not to discuss the games or their decisions with others, describing this as a rule of each game. Following each game, we asked participants if they had heard about that game before playing, and none reported having heard anything. In the SOM, I discuss safeguards against “the Three Cs” in more detail.

In all three games, a 54-cell array composed of three 18-cell boxes displayed standardized target photos (Figure 1). The order of the photos in the array was randomized on each day, and the three boxes were shuffled for each interview. To avoid biasing decisions, we demonstrated example distributions of coins on a model grid drawn to the same scale as the box cells; these demonstrations covered the full range of possible decisions and equity outcomes without making reference to any specific target. See the SOM for additional details about the equipment and protocol.

AcG. The allocation game began with the decider's own photo randomly positioned among those of 53 other men (targets), which we pointed out. Twenty FJ\$1.00 coins sat in a separate cup. We instructed deciders that in this *tavi* (task), they could *wasea* (divide, distribute) the coins among themselves and the other pictured villagers in any way they wanted, with the money they placed on a photo really going to that person afterward. They were shown a range of possible distributions using the model grid (SOM). We then described the rules, including (1) only the men pictured could be allocated money and (2) they could not break the \$1.00 coins into smaller units.

TkG. The taking game began with eight FJ\$0.05 coins on each photo (\$0.40 per photo, \$21.20 total) and the decider's own photo in a separate cup. We instructed deciders that in this task they could *taura* (take) any number of coins from any of the photos, *biuta* (put, leave) those coins in their own cup, and *maroroya* (keep) that money for themselves. Any money they did not take from another's photo was the amount that person would really receive afterward. Using the model grid and their cup, we demonstrated a number of possible decisions (SOM). We then explained a rule: Coins could not be redistributed across the photos, only taken or left.

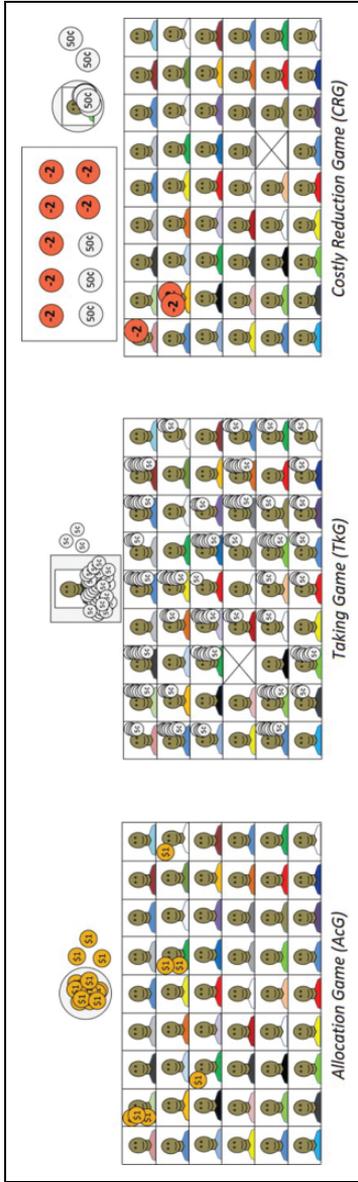


Figure 1. Schematic representations of the three RICH games. The allocation game involved distributing 20 FJ\$1.00 coins across a 54-photo array including the decider's own photo. The taking game allowed taking up to eight FJ\$0.05 coins from any of the 53 targets and placing them into the decider's own cup. The costly reduction game provided 10 FJ\$0.50 coins that could either be kept by decider or be used to buy red coins with which to reduce the total earnings of any target by FJ\$-2.00.

CRG. The costly reduction game began with 10 FJ\$0.50 coins in a plastic cup containing the decider's own photo. A second box lid displayed 10 red tokens otherwise identical to the \$0.50 coins and marked with “-2.” We instructed deciders that in this task, they could keep up to FJ\$5.00, or use any of that money to *vakalailaitaka* (shrink) or *musu* (break, reduce) other men's total earnings from the three tasks. Specifically, they could *volia* (buy) up to 10 red coins and put them on other's photos; each red coin would *sau* (cost) \$0.50 that they would not get to keep, and each red coin they put on a target would reduce that target's earnings by \$2.00. We recounted the ways money could be earned in the three tasks. We then described an extensive set of examples (SOM) and reiterated a game rule: To reduce a man's earnings with a red coin, they had to spend a \$0.50 coin that we had provided and they could no longer keep this money.

Results

Experiential Analogues of the Games for Participants

Asked if the AcG reminded (*vakananuma*) participants of their experiences, the Fijian way of life, or village events, 38 (74.5%) said yes, while 12 (23.5%) said no, and one equivocated. Asked the same questions about the TkG, 38 participants (76%) said yes, while 12 (24%) said no. For the CRG, 35 participants (70%) said yes, while 15 (30%) said no. The SOM gives accounting of specific examples of analogized experiences.

Decisions

AcG. In the AcG ($N = 51$ deciders), the mean amount kept was 12.5% of the FJ\$20.00 stake ($\$2.49 \pm \4.18 SD). For the modal keep, 43% of the men kept nothing for themselves; 76% kept 10% (\$2.00) or less (Figure S1, SOM). Only one individual kept all \$20.00 for himself. On average, deciders allocated money to 19% of possible targets (10.1 ± 5.4), with a mean allocation to targets of $\$1.73 \pm \1.09 . The max allocation to one target was \$10.00.

TkG. In the TkG ($N = 50$ deciders), the mean amount taken by deciders was 33% of the FJ\$21.20 available ($\$7.03 \pm \7.20). For the modal take, 20% of deciders took nothing for themselves; 12% took all available coins (Figure S1). On average, deciders took from 59% of the 53 targets (31.42 ± 20.93). Among those targets taken from, the mean amount taken was 52.6% (4.21 ± 2.61 coins out of eight, or FJ\$0.21).

CRG. In the CRG ($N = 50$ deciders), the mean amount spent to reduce targets was 45% of the FJ\$5.00 stakes ($\$2.26 \pm \2.17). There were two modes: 34% of the deciders (17/50) reduced no targets, while 32% (16/50) spent all \$5.00 on reductions. The remaining 34% spent some fraction of the stakes to reduce others. In other words, 66% of the deciders spent some or all of the stakes to reduce others (Figure S1). On average, deciders reduced 7.5% of the 53 targets (3.96 ± 3.99). Among those targets reduced, the mean number of \$0.50 coins used on each was 1.13 ± 0.72 . Of the 198 observed reductions, 184 (93%) used one coin, 9 (4.5%) used two coins, and 4 (2%) used three coins. One decider used all 10 coins on one target.

Order Effects

There was no evidence of *contagion* of decider behaviors over the course of the study. Using separate Pearson's correlations for each game, there was no relationship between the order of participation and the total kept in the AcG ($r = -.07, p > .6$), the total taken in the TkG ($r = .09, p > .5$), or the total spent in the CRG ($r = .16, p > .2$).

Target Outcomes

AcG. In the AcG ($N = 54$ targets), 96% of the targets were allocated money by at least one decider (Figure S2). The mean amount targets received from all deciders was FJ\$16.54 \pm \$22.71. The minimum received was \$0.00, and the maximum was \$104.00. Receipt was highly positively skewed, with a median of only \$7.00. On average, targets received allocations from 19% of the deciders (9.54 ± 10.38); the maximum number of deciders from whom one target received allocations was 41 (80%).

TkG. In the TkG ($N = 54$ targets), the mean amount targets had taken by all deciders was 33% (FJ\$6.51 \pm \$1.06). The minimum amount taken was 19% (\$3.85), while the maximum taken was 49% (\$9.60; Figure S2). On average, targets were taken from by 59% of deciders (29.09 ± 4.80). The maximum number of takers was 36 (73%), while the minimum was 16 (32%).

CRG. In the CRG ($N = 54$ targets), 87% of targets were reduced by at least one decider. The mean amount targets were reduced by all deciders was FJ\$8.30 \pm \$12.05. The minimum reduction was \$0.00, while the maximum was \$76.00 (Figure S2). The modal reduction was one token (\$2.00). On

average, targets were reduced by 8% of deciders (4.00 ± 4.21). The maximum number of deciders that reduced one target was 22 (44.9%).

Total Earnings

The SOM describes intergame correlations for decider earnings and target outcomes. Aggregate participant outcomes from all game sources—keeping and receiving in the AcG, taking and being left in the TkG, and keeping and being reduced in the CRG—varied widely. The mean aggregate earned was $FJ\$33.13 \pm \30.84 . The maximum earned was \$118.15, while the minimum earned was negative \$50.55. Four participants finished the games with negative aggregate earnings as a result of being reduced in the CRG more than they kept, took, received, and were left in other games. To help maintain confidentiality and good will, we paid each of these men a positive dollar amount that was less than the smallest total earned by any other participant. Each man who had paid to reduce one of these four was reimbursed in proportion to their contribution to the total of the target's reduction that was not applied. All preceding descriptives are for pre reimbursement totals.

Decision Rationales

AcG. Target need was the overwhelming reason given for allocating coins to targets, with 92.2% of the deciders mentioning a target's weakness (*malumalumu*), old age, lack of income, financial troubles, many dependents, widower status, general problems, or just wanting to help them. A lack of need was likewise the overwhelming reason given for not allocating to targets, with 72.5% of the deciders mentioning a target's strength (*kau-kauwa*), sources of income, or support from a large family. As other reasons for allocating, deciders mentioned a target's goodness of character (25.5%), the quality of their relationship (11.8%), positive feelings toward them (11.8%), or their relatedness (7.8%). Two deciders (3.9%) mentioned an abstract value: doing the right (*dodonu*) thing. As other reasons for not allocating, five deciders (9.8%) mentioned their bad relationship with a target, and one decider (2%) mentioned their own need. Five out of the six other reasons were deciders saying they could not allocate to everyone for lack of coins.

TkG. Target need was also the predominant reason given for not taking. Forty-four percent of deciders mentioned targets' needs (e.g., weakness, old age, lack of income) as reasons for not taking from them, while 38% mentioned targets' ample resources (e.g., strength, youth, high income) as reasons for

taking from them. Eight deciders (16%) mentioned an abstract value or rule as a reason for not taking, with seven of these referring to preserving the equal distribution of the money at the start of the game. As other reasons for not taking, four deciders (8%) mentioned good feelings toward a target, including respect (*dokai*), and three (6%) mentioned their good relationship with a target, such as having been helped by them in the past. A decider's own lack of need (2%), the good character of a target (2%), and their relatedness to a target (2%) were each mentioned by one decider as reasons for not taking.

As other reasons for taking, six deciders (12%) mentioned an abstract reason, with most of these referring to taking some set amount from all so as to preserve equality across them. Other reasons for taking included a decider's own need (8%), a target's bad character (6%), their bad relationship with a target (6%), or their lack of relatedness to a target (6%). No deciders mentioned bad feelings as a reason for taking. Seven deciders (14%) gave no reasons for their decisions and simply stated it was their decision (*vakatulewa*).

CRG. The most common reason given for reducing a target was the target's ample resources (38%). However, unlike in the TkG, only 6% of deciders mentioned a target's need as a reason for not reducing him. Other reasons for reducing in the CRG included a target's bad character (16%) and a bad relationship with a target (10%). One decider mentioned reducing cross-cousins (a joking relationship), while three (6%) mentioned abstract reasons, including wanting to equalize (*vakatautauvatataki*) earnings across participants. As reasons for not reducing targets, one decider mentioned their relatedness to a target, while 20 (40%) mentioned an abstract reason. Two of these made reference to not wanting targets to earn different amounts as a result of reduction, but most were referring to why all of their reductions were of the same size—they did not want selected targets to be reduced by different amounts. Four deciders (8%) gave no reason for their decisions other than “my decision.” A number of the other reasons justified not reducing by saying it would reduce the earnings of others (restating the game contingency), while one decider mentioned reducing others so that the money would “go back to where it came from” (i.e., to the author).

Discussion

AcG

In the AcG, essentially an *N*-recipient DG, deciders behaved quite altruistically; many allocated themselves nothing, and most kept only a fraction of

the stakes. A previous DG study in neighboring villages on Yasawa Island (Henrich and Henrich 2014) used comparable stakes and found much less altruism—the mean keep was 65%, compared to 12.5% in the AcG. What explains this difference?

Like the standard DG, the AcG maintains confidential decisions. However, the AcG departs from the DG in two important ways: There is more than one recipient, and target identities are known. Previous studies suggest that having multiple recipients does increase the amount allocated to each (Engel 2011). It could be that deciders view the AcG as a multi-recipient DG in which fairness is determined by the amount Ego keeps relative to each of the other recipients. In the Yasawan dyadic DG, the modal offer was half the stakes. An analogous pattern in the AcG would involve Ego keeping the same amount as allocated to N recipients. However, only 22% of deciders in the AcG kept the same as they gave to all other recipients; 51% kept less than some or all recipients, and 43% kept nothing. In contrast, only around 5% of deciders in the Yasawan DG gave more than half of the stakes.

Instead, target identities apparently drove decision-making in the AcG. Deciders were able to utilize all information associated with pictured targets, such as histories of interaction, reputation, and relational norms. Almost three-fourths (74.5%) of Yasawan deciders mapped the AcG onto their previous experiences, whereas only 45% (9/20) did so for the DG (Henrich and Henrich 2014). Specifically, many Yasawan deciders allocated money according to asymmetric need; over 90% invoked target need as a reason for allocating, and over 70% refrained from allocating to those not in need. Many deciders simultaneously mentioned old age, weakness, low income, and low access to wage labor in their explanations. This fits with previous DG studies showing that recipient need boosts generosity (Engel 2011).

Need-based helping also fits with two ethnographically salient aspects of Yasawan life. One is the Christian ideology that pervades daily life in a Fijian village and that emphasizes compassion, helping, forgiveness, and community (Brison 2007). The second is the traditional system of need-based requests (*kerekere*) that operates among individuals, households, and clans in a Fijian village (Sahlins 1962). Generosity is integral to Fijian village life, and failure to participate in the *kerekere* system results in reputation damage and likely less support from others. A number of deciders mapped the AcG onto this aspect of village life, including caring for elders and sharing a fish catch.

TkG

The results of the TkG were essentially the mirror image of the AcG. Among deciders, those who kept more in the AcG took more from others in the TkG (SOM). Target outcomes in the two games were highly negatively correlated: Having more taken in the TkG was associated with receiving less in the AcG. Target need was the predominant explanation for refraining from taking from targets, while a target's ample resources were used to explain why they were taken from. The consistency of these results provides a measure of the convergent validity of these methods.

Of interest, deciders in the TkG were restrained relative to comparable studies. For example, a similar design run among the Tsimane of lowland Bolivia (Rucas et al. 2010) found that Tsimane women took on average 75% of valued beads from other women. Men in Yasawa took only 33% of coins from other men. This difference is stark, hinting at large population-level differences in RICH game behavior. However, there are a number of explanations that the present study cannot disentangle, including culture, sex, and currency, which should be explored in future studies. Of note, 76% of Yasawan participants in this study mapped the TkG onto their everyday lives.

CRG

Yasawan men were surprisingly willing to spitefully reduce the earnings of other villagers in the CRG. In an ultimatum game (UG), only 29% of Yasawan participants reject an offer of FJ\$0.00, while in a third-party punishment game (TPG), only 33% of third parties spend to punish an offer of \$0.00 (Henrich and Henrich 2014). In contrast, in the CRG, 66% of deciders reduced at least one target. One decider spent the entire pot to reduce a single target, while 10 men (20%) reduced the maximum of 10 targets. This was despite the absence of any target norm violation within the game protocol.

Low rates of punishment in the anonymous target UG and TPG (Henrich and Henrich 2014) may be an artifact of uncertainty regarding whether the instigating acts—a low UG offer or a low TPG offer—do constitute norm violations. Across societies, norm violations are defined relative to the relationships of the involved parties (Edgerton 1985). In Fiji, legitimate status differences are pervasive, and unequal distributions of mundane and sacred resources are routinely conditioned on age, sex, and clan. Yet in anonymous target games, it is unclear how the proposer and receiver are

related, or whether one might be in greater need. Yasawan second- and third parties in such games may well infer a relationship and its proprietary expectations *from* game behavior, rather than imposing generalized norms on observed behavior. In other words, given a low offer, antecedent entitlement or need may be inferred, rather than equality assumed (see also Cronk 2007; Gerkey 2013).

In general, a higher percentage of Yasawan deciders map the CRG (70%) onto their lived experiences than either the UG (25%) or the TPG (36%; Henrich and Henrich 2014). Unlike these anonymous target games, the CRG potentially captures an observed dynamic of naturalistic punishment in a Fijian village: The secrecy of the CRG allows diverse punitive motives to be enacted without costs. Analogously, physical punishment in a Fijian village is not uncommon when excusable, for example, when a norm violator's loss of standing undermines their protections from other villagers (Henrich and Henrich 2014), or as long as second-party retribution does not disrupt wider village affairs (Sahlins 1962). Not surprisingly, in the CRG, deciders reduced targets for many punitive reasons, including the target's character, unpaid debts, and their "bad" relationship state. One decider even spoke of teaching his selected targets a lesson (*me vaka nai vakamacala*).

Even more frequently—38% of the time—deciders spoke of reducing targets that had high income. Sometimes this involved character judgments such as the pejorative "money head" (*ulu sede*), but more often deciders simply referenced the target's business or wealth. Several deciders provided specific leveling motives. For example, one man said, "I want to equalize (*vakatautauvatataki*) what we earn by putting red coins on those who earn much." These data fit with recent experimental laboratory evidence of costly punishment in the service of egalitarian motives (e.g., Dawes et al. 2007) and may be the first quasi-experimental field data of this phenomenon. They also highlight the perceived illegitimacy of nascent income inequality in a population characterized by legitimate inequalities in traditional currencies of wealth and status such as clan membership and ritual privilege.

Limitations and Future Directions

Among the limitations of this study is an all-male sample. I did this to include the entire available social network of one sex, specifically the one to which I had greater access for interviews, time allocation sampling, and participant observation. In such a highly gendered, unilocal society, men

and women might well behave differently toward members of their same and opposite sex, even while a previous study in Yasawa found no consistent sex effects on gameplay when recipients were not identified (Henrich and Henrich 2014). Focusing on female social networks (as in Rucas et al. 2010) and expanding the study to intersexual relationships are necessary and worthwhile directions for future research.

Additionally, this study employed real Fijian coins as the objects of distribution. Money may have foregrounded particular norms and behaviors, limiting the external validity of the present method beyond economic transactions. However, several lines of evidence suggest otherwise. While currency effects have not been systematically studied, resources other than money have not clearly affected results in other experiments (e.g., Lamba and Mace 2011). Participants themselves also freely mapped the games onto more general norms of generosity and the division of nonmonetary resources such as fish. Of course, the payoffs in these games were monetary, independent of the objects distributed. While participants used many noneconomic rationales for their decisions, the economic leveling evident in the CRG may have hinged on the use of monetary payoffs. Future work can explore leveling behaviors using subsistence foods, purchased goods, or more symbolic capital that is unequally distributed in an ascribed hierarchy.

Like most economic games, these RICH games involve stakes that arise as windfalls, without labor investment by participants. This may undercut their external validity (Gurven and Winking 2008). However, participants readily mapped these games onto everyday sharing practices involving both monetary and nonmonetary resources. It may be that windfall acquisition accurately describes the perception of resource acquisition in these villages due to stochastic weather events, frequent injuries, opaque illnesses, and unreliable employment. Future work should explore this possibility.

Compared to economic games with anonymous targets, RICH games entail an additional layer of ethical considerations, commensurate with their value added in illuminating community dynamics and intrinsic social motives. By forcing participants to make trade-offs among known recipients, and by allowing them to exploit or reduce the earnings of other villagers, these games could conceivably introduce real-world conflict into a tight-knit community. I took several steps to mitigate this risk, most notably preserving decision confidentiality and obscuring the sources of earnings by making one final aggregate payout to each participant in private. Delaying payments was feasible because of rapport and trust developed over years working in this and neighboring communities; a similar protocol in the absence of such rapport might encounter skepticism and protest.

Confidential decision-making does compromise ecological validity in one sense: Unlike the very public social decisions of day-to-day village life, there were no reputational or punitive consequences for actions in these games. However, I considered this a feature not a bug, both for ethical reasons and for investigating intrinsic relational motives, a primary goal of the larger study. While introducing public decisions into these games could have a large impact on the results and be of great theoretical interest, the risks would likely outweigh any benefits gained.

Conclusion

These RICH economic games tap the norms and motives that regulate enduring social relationships in a Fijian community. The results fit with existing ethnographic accounts of Fiji, while revealing strong motives for economic leveling. In generating novel quantitative data, this study sets the stage for a larger comparative enterprise designed to describe and explain, ultimately and proximately, the patterning of social relationships as they structure and support human adaptation.

Author's Note

The opinions expressed in this publication are those of the author and do not necessarily reflect the views of the John Templeton Foundation.

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Supplemental Material

The online [appendices/data supplements/etc.] are available at <http://fmx.sagepub.com/supplemental>.

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