

Supporting Information for

A Forty-four Year Perspective on the Influence of Cash on Ju/'hoansi Bushman Networks of Sharing and Gifting

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SI 1. LONG TERM STUDIES IN NYAE NYAE 1996-2018

This research is part of a much larger ongoing initiative since 1996 on demography, subsistence, networks and residential patterns among the Ju/'hoansi of Nyae Nyae (Wiessner 2005). The goals of the research were both academic and practical, the latter to inform a number of initiatives on the part of PW's non-profit, the Tradition and Transition Fund, to improve food and water security. Simultaneous research was carried out on stories and oral traditions of the past and present. Wiessner worked at /Kae/kae from 1973-1977 and then returned to Nyae Nyae for 4-6 weeks a year all years except 1999-2000 and 2007-2010. Despite country borders, the population was one and all of the individuals in the 2017-18 sample had moved back and forth visiting the Botswana communities in the past as some still do. Twenty-eight individuals in the 2017-2018 sample were direct descendants of the subjects 1974 sample and many were descendants of former *hxaro* partners of those in the 1974 sample.

Brief history of Nyae Nyae area

The Ju/'hoansi of Namibia and Ju/'hoansi of Botswana have a very different recent histories, though they still share social institutions, *hxaro* partnerships, regular visiting, seasonal gatherings and circulation of stories (Wiessner 20-14: Map 2). In 1970s a Bushman homeland was established by South African Government, later called Nyae Nyae. Basic services were offered: agriculture, school, health care, some jobs and a store. Few Ju/'hoansi lived full-time at Tsumkwe owing to drunkenness, conflict and disease, but rather moved back and forth to traditional lands in Nyae Nyae and Botswana to hunt, gather and enjoy respite.

In 1978 during the Namibian war of independence, a Ju/'hoan battalion was established; salaries were high and much social turmoil ensued (Marshall 2007). By the mid-1980s John Marshall and Claire Ritchie, realizing that the population was in decline from conflict, drunkenness and tuberculosis, initiated a program to settle people back on their traditional lands in Nyae Nyae promoting animal husbandry and gardening. The Nyae Nyae Development Foundation was formed. Namibia's independence was established in 1990; subsequently World Wildlife Fund established the Nyae Nyae community-based conservancy (NNC) in part to protect Nyae Nyae from intrusion by other ethnic groups. The Tsumkwe administrative center remained in the middle of the NNC with government offices, clinics, stores, tourist facilities and a substantial population of Namibians from other ethnic groups as well as expatriates. (Biesele and Hitchcock 2010)

Demography

We are fortunate to have access to the John Marshall/Claire Ritchie data base created in the 1980s for all residents of Nyae Nyae which extends back to the 1930s. For core villages, we have updated all births, deaths, marriages, divorces until 2019. The data have largely been used to inform development projects and to have a record for families when they must apply for pensions or child support. The data base is now being prepared for demographic analysis. The

records show: (1) rapid population growth. The population was approximately 1700 in 1997 and in 2019 over 3000 with almost no in-migration or outmigration; (2) high deaths rates from tuberculosis and violence (Wiessner 2016), (3) few cases of HIV/AIDS except for women who marry outside the population and contract HIV/AIDS; (4) improved survival of kids under five (Wiessner 2005); (5) a very low divorce rate after the birth of the first child, even for barren couples; (6) only 2 cases of polygynous marriages. The Ju/'hoansi are fortunate that COVID-19 never spread in Nyae Nyae, else the lives of the many suffering from TB might have been lost.

Subsistence

Some results of research subsistence from 1996-1998 are given in Wiessner (2004) and a 1998 unpublished report to the Nyae Nyae Foundation. Subsistence results presented in Wiessner (2004) still hold today with one exception: the Namibian Government has ceased distributing drought relief and replaced it with N\$250 per month subsidies for all children under 18 allowing people to plan and shop rather than wait for handouts. There are still significant periods of hunger today. In the past with *hxaro* ties, people could always pack up and move to other groups when there was no food or water. Today many Ju/'hoansi must just sit out the hunger.

Residents in most Ju/'hoan villages cannot survive on veldt foods alone but require supplements from government assistance: pensions, relief food, child support and so on. For the 2018 work, we carried out studies at nine rural villages and two communities at Tsumkwe to get a more representative sample, because natural resources and subsistence strategies varied so greatly between villages. That is why *hxaro* exchange worked in the past. At one village in our sample, caloric intake dropped to less than 1000 calories per day for four months when government drought relief food was not distributed with the low being 515 calories per day (Wiessner 2004: Table 1). Calories available from gathering for 12 villages are given in Wiessner (2004) for July-August, neither the best or worst time of year, ranging from 3925 calories per hour for one of the few villages in Nyae Nyae that had access to mongongo nut groves, to 211 for villages without nuts or other calorie-rich resources. The population has doubled since 1997, putting more pressure on resources and hunting has declined young men no longer learn how to hunt. Tea and sugar are considered to be an important food and provided 25% of calories consumed in Wiessner's 1996-7 study at Xamsa village (Wiessner 2004).

Quote: "Meat sharing was a good practice in the past and important for community life, but in our modern lives it is no longer very strong. We still do share from traditional hunting but the main thing is that most of the expert traditional hunters passed away. There is still some traditional hunting but it is very scarce in this modern life in Nyae Nyae. There should be more experts to train youths for hunting so they can do hunting and share meat with their in-laws and relatives." (N!hunkxa #oma 2022)

Among the Ju/'hoansi much of the spice of life entails determining who has and who is in need. 'Demand sharing', so widely found among Australian hunter-gatherers (Peterson 1993; Widlok 2016) and other forager populations is not widely practiced among the Ju/'hoansi except for spontaneous sharing of tobacco or other minor consumables such as berries, drinks or snacks. Ju/'hoansi resent those who hang around and constantly sponge off the food supply of others, sometimes comparing them to dogs.

Hxaro

In 1997 studies on *hxaro* were carried out in three villages where only older people knew about *hxaro*. The average number of partners reported was 6.9 with very few in distant areas (Wiessner 2004) compared to 14-15.5 partners in 1974. Since then *hxaro* is no longer practiced as it was in the past. Many foragers mark mutually supportive relationships with gift exchanges, though *hxaro* may be more a more structured system than most because of the highly variable distribution of resources in the region over time and space.

EXPENDITURE STUDY

Most people gave very detailed information about their expenditures, but of course this information had to be categorized for analysis, but here is some of the detail lost. Participants were equally interested in detailing what was bought as what was gifted.

Tobacco and alcohol

Tobacco has long been an addiction for most Ju/'hoansi. One old woman I know walked 8 hours to buy tobacco. When I told another that smoking was bad for her chest, she responded that I got it all wrong, that tobacco was their medicine, and only when she smoked did she feel young again and dance. Years of health campaigns appear to have had little influence but today some Ju/'hoansi are joining churches and giving up both tobacco and alcohol. In the expenditure study people were not pushed to say how much they spent on tobacco, but for those who reported buying tobacco, the average amount was N\$20-30 per payment. It is reasonable to assume that for others \$10-30 might be included under food purchases or debt.

Alcohol has been a serious problem among the Ju/'hoansi and eats up much of the income of some individuals. In the 1970s, Ju/'hoansi who came across some coins would very occasionally go and drink homebrew made in Herero households, but alcohol was not a significant problem. During the Namibian war for independence in the 1980s, alcohol became available throughout much of Namibia to assuage the population. High salaries in the South African defense force made it possible for alcohol consumption to become endemic. Shortly after independence the Nyae Nyae Ju/'hoansi continued to brew in villages to the point where alcohol-related violence was intolerable. In the 1990s, most villages experienced murders, largely from drunken fights, 'the fault of the beer' (Wiessner 2016: S157). Through informal agreements, brewing stopped in the villages in the 2000s, though many men and women still drink at Tsumkwe in the shebeens owned by Bantu-speaking Namibians. Problems with drunkenness have decreased since 1990s, though some Ju/'hoansi remain notorious alcoholics.

Many of the educated Ju/'hoansi in leadership positions or those with higher paying jobs were originally famous drunks until they woke up and realized that their lives were at risk and their families suffering. They gave up alcohol successfully, often by joining churches that banned alcohol and tobacco for clean living. In the expenditure survey, participants were not asked about money spent on alcohol because we knew that we could not get reliable information. However, most of the people in our sample only drank very occasionally, if at all. We avoided working with the well-known drunks.

Money gifted to spouses

Both spouses could identify what they bought or were given during the possession inventory. Thirteen people in expenditure study mentioned giving between N\$50-2000 to their spouses. Because intra-family gifting was unlikely to be reported consistently, we did not include monetary gifts to spouses in the analysis. Most of the cash given to spouses was for family interests like maintaining a vehicle or covering debts.

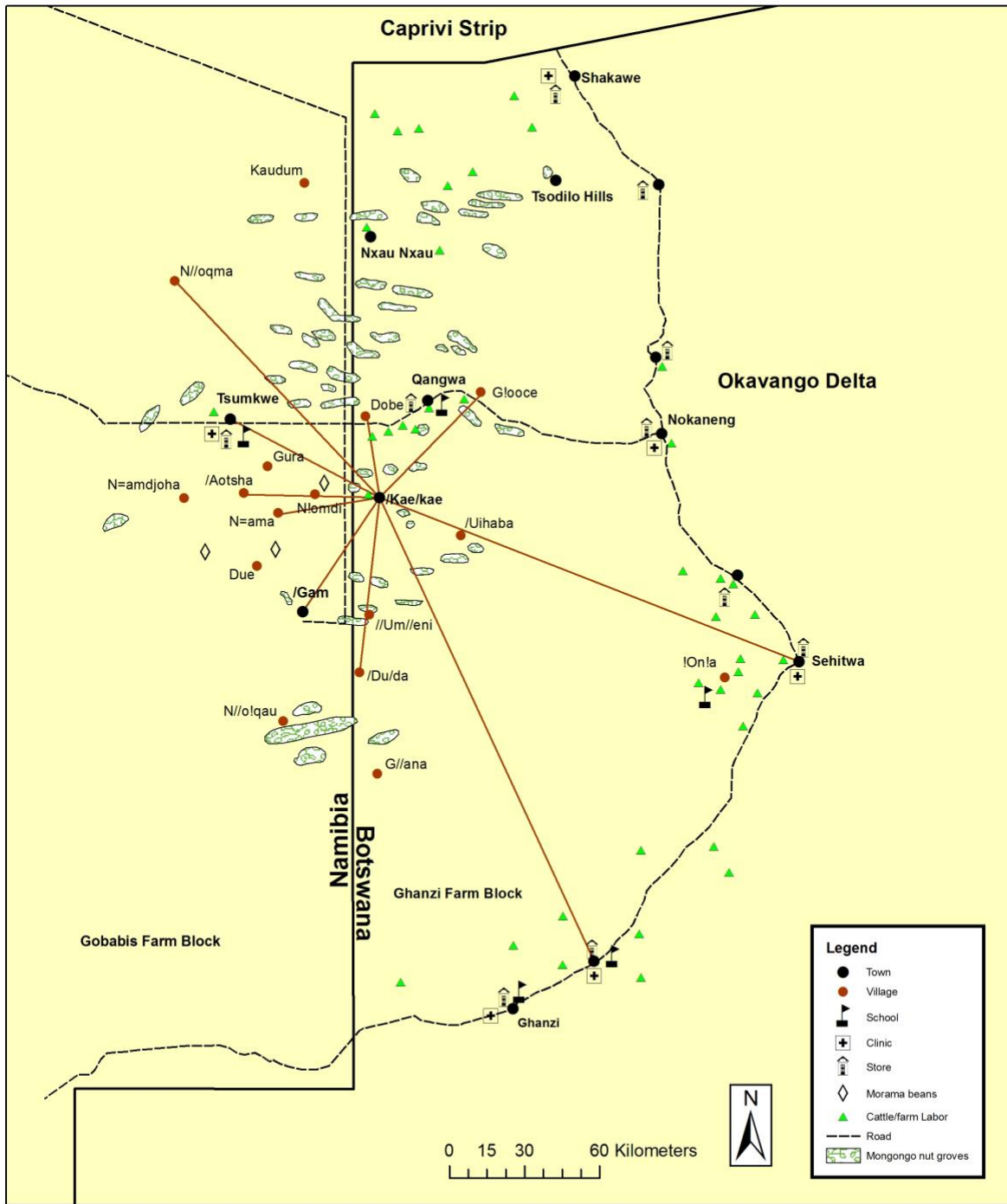
Money given for community events.

In two villages, village residents contributed N\$400 each for a village Christmas celebration. Eleven of such contributions were reported. Those not on salary gave cash from their Nyae Nyae conservancy benefits. These expenditures are not recorded under gifts and are not included in the analysis because they largely apply to residents of one village.

Re-gifting.

Many of the clothes in the possession inventory were ones that were re-gifted when somebody no longer wanted them or got something new. Many clothes distributed by a Romanian mission could not fit a Ju/'hoansi or were inappropriate for Kalahari wear, such as lace nighties or pantyhose. After prayer sessions, the clothes were distributed in bundles. People were told that if they prayed, they might then receive a bundle of appropriate clothing that fit them. Approximately 20% of items of clothing gifted were clothes that were re-gifted from Romanian donations.

**Map of the study area showing major hxaro ties of on /Kae/kae woman in the 1970s.
(See below)**



References

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SI 2. QUOTES ABOUT MONEY SHARING.

Fifteen interviews discussions conducted and translated by Kashe Tshao and Fanie Tsemkxao in 2021 with guidance by PW. PW would not get such straight forward responses, as Ju/'hoansi usually complain to outsiders about how nobody shares anymore, etc., hoping to get some form of assistance. All participants expressed opinions similar to those in these quotes. PW has heard the same opinions in talks around hearths though not in such concise statements. Requests are phrased in terms of, ‘will you help me’, not demands, and are usually from close kin; Ju/'hoansi have a sense of who has the right to ask. However, if people are known to have money when in Tsumkwe, they will be assaulted with the demands of drunks which are largely ignored.

I

I have seen changes in how much people share. Sharing depends on how closely people are related to you, but because people like things that one can buy, it is hard to share with others. People share only when they have much. Things like money are only shared once (not regularly). In today’s life everyone wants to spend money to lead a modern life. It is good for people who work for money to keep most of it. Why? Because they have a lot of responsibility to take care of their families. Those who work in Tsumkwe will need money to buy clothes for the kids, furniture for their houses, and other things. Life is difficult for people who work and need money to buy food. These are the reasons why people who work for money should keep most of it. **Kxoara N#hao , m, age 34, N#ama Pan Post village**

II

“I manage requests by responding that what I have here is only enough for household use and I am sorry but I will not be able to help. Maybe next time. I frequently respond to requests from friends in this way and they understand that I have a lot to do with my money. This is how I manage to keep my friends and yet keep enough from myself. People share depending on how much they have. For example, if a person gets paid N\$1000 it would be difficult for that person to share because it is too little, and the person would not want to share it with others. Things like tobacco meals can be shared but only with those who live in the same village. Everyone who works will want to one day to buy a car, have a nice house or wear expensive clothes and this is why sharing has changed.

I think it is good for people who work for money to keep most of what they earn because they have a lot of things to do with money like renovating their houses, buying roofing material, fixing the yard buying school uniforms for kids groceries toiletries and that is why it is important for people who work to keep most of their money.” (G/ao Kagece, m, age 54, N=ama village)

III

“I do not get many requests but I do have a few friends and I respond to requests depending on how much I get paid and also on what they ask for. Sometimes they ask me to buy something depending on how much I get paid I will manage to buy it for them. Sometimes I will respond to the request if I can afford it but mostly I will respond kindly and apologize that I cannot share, because I must keep the remaining balance for myself. This is how I manage to keep my friends and yet keep enough for myself. I have seen changes in how much people share; most people turn out to like what they have and so it is not easy for them to share. I have seen that sharing is not the same as before. I think it’s good for people who work for money to keep most of it. Why? because people have needs to have food in their houses, they may have kids going to school and these kids will need to be clean and healthy. People who work for money will need to renovate their houses, buy metal roofing.....!Xam #oma, m, Age 39, !Obaha village)

IV

“When I get paid I have many requests and this is how I usually respond to requests. At first by what I need and when I have bought everything I need I will see if I have any money left over. Whether I will share depends on if I have anything left. If I little, I will tell my friends to wait for the next time. This is how I keep my friends and keep enough for myself; it all depends on how much I get paid and how much debt I have.

People share depending on how much money they have and sometimes you will see that people like money even if they have lots of money. They will tell you that they I have little money even though they have plenty. They will tell you that they have a little so if you ask for \$50 they might give you \$10 (less than \$1). Sharing today is not as I remember it. For example, my stepfather /Ui n!a bought a new radio and gave it to his friend Kagece at Makuri, but today sharing is not the same. I think that it is good for people who work for money to keep most of it. “ (goes on to list needs) (!am Kxao, Age 30, N!omdi village (rural))

V

I do have many requests when I get money. Family and friends are the people around me who ask me to help them. What I do is I say that I will see what I need the money for first, because when you have money there is a lot to do with it. What I normally do is buy all I want, pay off my debts, buy food and clothes for myself and my kids and then if there’s something left

over I will respond to requests. I usually keep a small amount of money for future use. This is the way I try to keep my friends even if I feel I do not have enough money because I am afraid to be disliked by my friends. Sharing has declined today because most people turn out to like what they have in this modern world and this changes how people share. I share meals but only with people living in my village. Before I used to see people sharing money but in today's life people will only share money with those who are closely related and living in the same village. And sharing only happens when the people you share with also share with you. I think it's good for people who work to keep most of their pay because there are so many needs for money like feeding the family and buying clothes for kids who will go to school and need to be clean and healthy. (*Am Tsamkxao, f, age 54, N#ama village*)

SI 3. SOME RECENT DEVELOPMENTS IN NYAE NYAE VILLAGES

As the economy becomes mixed and networks narrow, village-specific developments are occurring in villages. Several villages have moved into animal husbandry, mostly cattle, and are successful, although not all members participate equally. In some villages capable gardeners have emerged, encouraging others to do the same in cooperative efforts. In still others, people choose very similar housing styles with widely spaced houses and central sun shades for daytime gatherings.

In the communities of Daupos and Mt. Pos (and perhaps others of which I am not aware) in which many are employed and there is cooperation for animal husbandry and tourism, there are substantial Christmas celebrations to which everybody contributes. This level of cooperation was very uncommon among the Ju/'hoansi in the past. The following is a description suggesting the emergence of more complex organization and co-operation in some villages:

“At the end of the year, we all sit and then talk about what we will do. Then we all agree to share and distribute money. We select three trusted people from the community who can take care of all the money we contribute. We all sit down the next day again and list all the food we need. I am the one who always writes down the list of food. When the holidays come closer, some of the men and women go to Grootfontein, buy all the food and then make transport arrangements with Bothma Traders so they can bring the food with their truck when they come to Tsumkwe. The shoppers then go back to Tsumkwe with the lighter foods. The following week Bothma Trading will bring our food give the list to us with the food. Then everything is fine.

On the days before Christmas day, some of the men go to another village buy a young male bull which we slaughter on the 24th. At 12 o'clock midnight, we all wake up, pray together, and then play very loud music while everyone dances. Then by 3:30 the women start cooking other types of food, like potatoes, and then some men start cooking meat with bones in pots. Early the morning about 6 men braai the meat and the women prepare different types of vegetables and tubers. That day everyone is very happy throughout. Then by 12:00 lunch is served with enough food for everybody. The kids get sweets and chips and someone makes juice for the kids. We the adults drink tinned cool drinks. Then we all dance traditional dances and play traditional games for youths. We all enjoy our Christmas celebrations. We all agree to not buy alcohol and there are very few who drink, because the majority of the village doesn't drink

alcohol. We enjoy end of the year celebrations that are trouble free. That day we all wear very new and nice clothes that we bought and keep to wear on Christmas day only. (Fanie Tsemkgao, Mt. Pos village, May 2022).

SI 4. DATA TABLES FOR FIGURES

Table S1. Table 1 data expanded: Mean number of possessions of each category per individual by location and year with standard deviation.

CATEGORY	/KAE/KAE VILLAGE 1974 (\bar{X} PER INDIVIDUAL)	SD	ALTERNATES 1974 (\bar{X} PER INDIVIDUAL)	SD	NYAE NYAE VILLAGE 2018 (\bar{X} PER INDIVIDUAL)	SD	TSUMKWE TOWN 2018 (\bar{X} PER INDIVIDUAL)	SD	EMPLOYED 2018 (\bar{X} PER INDIVIDUAL)	SD
# PERSONS	17 ♂ 19 ♀		6 ♂ 9 ♀		55 ♂ 48 ♀		17 ♂ 17 ♀		6 ♂ 7 ♀	
BEADS	6.0	5.0	10.6	6.1	1.5	3.0	0.7	1.3	1.5	3.0
BEDDING	1.8	1.5	2.9	1.4	4.6	3.1	5.3	4.2	7.2	4.5
CLOTHING	4.9	3.5	7.8	3.9	17.8	8.9	15.2	6.2	20.9	12.2
FORAGING TOOLS	1.9	1.9	1.9	2.4	0.6	1.1	0.4	0.9	1.1	1.4
MODERN GOODS	0.2	0.6	0.3	0.6	1.8	2.5	2.0	2.9	7.6	5.0
KITCHENWARE	5.4	3.5	6.3	4.7	6.0	5.6	13.2	10.6	16.0	11.0
LIVESTOCK	0.8	1.7	0.1	0.5	1.0	2.8	0.4	1.2	4.2	5.7
TOTAL	21.1	10.3	29.9	10.6	33.4	14.5	37.2	13.8	58.6	23.6

Table S2. Figure 2 data. Mean number of possessions from different sources per individual by location and year with standard deviation.

CATEGORY	/KAE/KAE VILLAGE 1974 (\bar{X} PER INDIVIDUAL)	SD	ALTERNATES 1974 (\bar{X} PER INDIVIDUAL)	SD	NYAE NYAE VILLAGE 2018 (\bar{X} PER INDIVIDUAL)	SD	TSUMKWE TOWN 2018 (\bar{X} PER INDIVIDUAL)	SD	EMPLOYED 2018 (\bar{X} PER INDIVIDUAL)	SD
# PERSONS	17 ♂ 19 ♀		6 ♂ 9 ♀		55 ♂ 48 ♀		17 ♂ 17 ♀		6 ♂ 7 ♀	
GIFT	GIFTG	9.0	22.4	10.4	12.4	9.5	8.2	4.7	7.3	5.7
BOUGHT	2.9	5.0	4.9	4.8	13.6	9.8	24.7	12.7	46.6	18.0
MADE /RAISED	1.0	1.8	1.1	1.0	0.3	0.9	0.0	0.0	0.5	1.7
OUTSIDERS	1.9	1.9	1.3	1.4	7.0	5.7	4.3	7.4	4.2	7.1

Table S3. Figure 3 data. Comparison of types of possessions gifted by year.

ITEM CATEGORY	1974 TOTAL	2018 TOTAL
BEADS	320	127
BEDDING	68	165
CLOTHING	199	656
REGIFTED CLOTHING	0	328
FORAGING	67	19
KITCHENWARE	206	235
LIVESTOCK	11	50
MODERN GOODS	6	75

Table S4. Figure 4 data: Mean number of possessions from different relatives per individual by year with percentages and standard deviation. Immediate kin are parents, children, siblings ($r=.5$); extended kin are grandparents aunts, uncles, cousins, nieces and nephews ($r=.25$); distant kin are blood kin ($r=12.5+$). Close affines are parents- in- law, children-in-law and brothers and sisters-in-law.

	1974 (\bar{X} PER INDIVIDUAL)	SD	VILLAGE 2018 (\bar{X} PER INDIVIDUAL)	SD
# INDIVIDUALS	51		103	
IMMEDIATE	7.6 (38%)	5.9	4.4 (33%)	4.3
EXTENDED	4.3 (23%)	3.7	5.0 (36%)	4.8
DISTANT	4.6 (21%)	4.7	0.1 (1%)	0.6
AFFINE	0.7 (3%)	1.5	2.2 (15%)	2.5
DISTANT AFFINE	0.4 (1%)	1.2	0.8 (6%)	1.5
OTHER ETHNIC GROUPS	2.0 (13%)	1.9	1.0 (8%)	3.7

Table S5. Mean income per individual by source of income with standard deviation.

SOURCE OF INCOME	# INDIVIDUALS	MEAN INCOME PER INDIVIDUAL (NAM \$)	SD
CASUAL INCOME	9	942.2	503.5
DEVILS CLAW	35	2244.8	1070.2
GOVERNMENT SALARY	38	3562.8	1395.7
NNC BENEFITS	41	1300.0	0.0
PENSION	21	2142.9	887.5
WELFARE	44	888.2	509.5

Table S6. Figure 5 data: Mean number of recipients of monetary gifts per person by source of income with standard deviation.

SOURCE OF INCOME	CLOSE KIN	SD	IN-LAWS	SD	OTHER KIN	SD	TOTAL KIN	SD
CASUAL INCOME	1.3	0.8	0.3	0.5	0.2	0.4	1.8	0.8
WELFARE	1.3	0.9	0.4	0.8	0.2	0.5	1.9	1.2
NNC BENEFITS	1.2	0.9	0.0	0.2	0.2	0.4	1.4	0.7
DEVIL'S CLAW	1.6	1.3	0.3	0.5	0.6	0.9	2.5	1.7
PENSION	2.0	1.1	0.2	0.6	0.1	0.3	2.4	1.7
GOVERNMENT SALARY	1.2	0.9	0.5	0.6	0.1	0.4	1.8	0.9

Table S7. Figure 6 data: Mean source of possessions per individual by gender, location, and year with standard deviation.

CATEGORY	# INDIVIDUALS	GIFT	SD	BOUGHT	SD	MADE OR RAISED	SD	OUTSIDERS	SD
/KAE/KAE VILLAGE MEN 1974	17	14.9	8.9	5.2	6.5	1.0	1.5	1.8	1.9
/KAE/KAE VILLAGE WOMEN 1974	19	15.2	9.3	0.8	1.4	0.9	2.1	2.1	2.0
ALTERNATE MEN 1974	6	21.2	6.9	9.5	3.6	1.0	0.9	1.0	0.9
ALTERNATE WOMEN 1974	9	23.2	9.3	1.8	1.4	1.2	1.1	1.4	1.7
NYAE NYAE VILLAGE MEN 2018	55	9.7	6.9	12.3	8.2	0.2	0.7	7.6	6.3
NYAE NYAE VILLAGE WOMEN 2018	48	15.6	11.2	15.0	11.4	0.5	1.1	6.4	5.0
TSUMKWE TOWN MEN 2018	17	6.8	3.7	22.9	13.0	0.0	0.0	3.6	3.7
TSUMKWE TOWN WOMEN 2018	17	9.5	5.4	26.5	12.5	0.0	0.0	5.0	9.9
SALARY MEN 2018	6	4.7	3.4	45.2	23.7	1.0	2.4	5.7	7.6
SALARY WOMEN 2018	7	9.6	6.6	47.9	13.3	0.0	0.0	3.0	7.1

