Supplementary material

Table S1. Summary of sources used to obtain sharing and economic data.

Interview	Sample Period	# interviews	# Villages	Data
Socioeconomic Inventory [a]	9/2003 - 3/2004	486	10	Income, wealth
Production and Sharing Weekly[b]	1/2005 – 11/2009	11,232	11	Food sharing
Horticultural Field[c]	3/2005 – 12/2009	1,950	27	Labor sharing
Household inventory[d]	11/2006 – 6/2007	380	12	Wealth
Production and Sharing Yearly[e]	3/2005-5/2013	2,753	53	Income

[a]These interviews were conducted annually and included questions about all earnings and their sources over the previous month, and past year. Household asset inventory, as in [d], was also conducted as part of this instrument.

[b]These interviews were conducted on a weekly basis on all households in a core set of villages by a resident team of anthropologists (Hooper et al. 2015)

[c]Field interviews queried about the size, crops, and labor contributions for each familial field.

[d]These were annual surveys of household heads concerning the possession of both traditional and non-traditional assets

[e]These interviews are conducted on a roughly annual basis targeting subjects 45+ years of age during physician check-ups in the THLHP health clinic or through a mobile team of doctors, nurses and anthropologists

Table S2: Descriptive statistics on material and relational wealth variables for the sample of 119 households and 9 communities for which data on all variables were available. Gini coefficients are age-adjusted and all monetary values are standardized to 2010 Bolivian currency (Bolivianos, Bs).

Variable	**Mean ± SD**	**Gini Coefficient**
Income from produce sales [Bs/month]	91.9 ± 103.2	0.39
Income from wage labor [Bs/month]	140.8 ± 440.8	0.58
Total income [Bs/month]	232.6 ± 465.2	0.42
Total household wealth [Bs]	4828.2 ±5091.0	0.24
Food sharing partners	2.3±1.5 .8	0.35
Labor sharing partners	2.2±2.3	0.53

Table S3. Linear regression models predicting variance in daily food production [CV kcals] by household as a function of material wealth and controls (age, age*age, average date of income interviews, average month of production interviews, number of risk days for production; details for controls not shown). Reported are the best-fit models based on stepwise AIC selection

All Production

	Estimate	SE	t value	p-value	β
(Intercept)	0.54	0.47	1.14	0.26	
Log wage income	0.04	0.02	2.39	0.02	0.21
Log wealth	0.11	0.06	2.04	0.04	0.18

Meat and Fish Production

	Estimate	SE	t value	p-value	β
(Intercept)	2.54	1.27	2.00	0.05	
Log wage income	0.08	0.04	2.06	0.04	0.16
Log wealth	0.19	0.14	1.40	0.17	0.12

TABLE S4. Sharing depth and giving intensity as absolute calories rather than proportions. Poisson GLMs and linear regression models showing association between material wealth and giving, receiving, and net giving (giving-receiving) of food controlling for age, age2, and date of wealth interview (details for controls not shown). Best-fit models based on stepwise AIC selection are reported

A. All food

Predicting total calories given to other households (poisson GLM)

	Estimate	SE	z value	p-value	β
(Intercept)	3.22	0.06	51.81	<0.001	
Log produce income	0.07	0.002	43.73	<0.001	0.09
Log wage income	0.03	0.001	39.66	<0.001	0.07
Log wealth	-0.06	0.004	-14.87	<0.001	-0.03

Predicting total calories received from other households (poisson GLM)

	Estimate	SE	z value	p-value	β
(Intercept)	6.99	0.06	117.51	<0.001	
Log produce income	-0.16	0.001	-119.13	<0.001	-0.28
Log wage income	0.04	0.001	41.3	<0.001	0.10
Log wealth	0.11	0.005	22.75	<0.001	0.06

Predicting net calories transferred to other households (linear regression)

	Estimate	SE	t value	p-value	β
(Intercept)	-12343.00	6007.59	-2.06	0.04	
Log produce income	638.62	275.53	2.32	0.02	0.28

B. Meat and Fish

Predicting total meat calories given to other households (poisson GLM)

	Estimate	SE	z value	p-value	β
(Intercept)	1.71	0.17	10.21	<0.001	
Log produce income	0.09	0.004	21.45	<0.001	0.10
Log wage income	0.18	0.002	80.84	<0.001	0.28
Log wealth	0.10	0.01	7.90	<0.001	0.03

Predicting total meat calories received from other households (poisson GLM)

	Estimate	SE	z value	p-value	β
(Intercept)	2.05	0.16	13.15	<0.001	
Log produce income	0.04	0.004	10.90	<0.001	0.07
Log wage income	0.10	0.002	48.23	<0.001	0.25
Log wealth	-0.25	0.01	-21.63	<0.001	-0.13

Predicting net meat calories transferred to other households (linear regression)

	Estimate	SE	t value	p-value	β
(Intercept)	-51.65	1876.68	-0.03	0.98	
Log wage income	43.55	31.25	1.39	0.17	0.17
Log wealth	233.32	148.72	1.57	0.12	0.19

Households with greater income gave significantly more calories to others, and those with higher produce income received significantly less (whereas those with higher wage income received significantly more) such that households with higher produce income gave significantly more net calories (i.e. total given minus total received from others) but there was no effect of wage income on

net giving. Households with greater wealth gave significantly less and received significantly more yet there was no effect of wealth on net giving (Table S4). Focusing only on meat and fish, the effects of produce income change such that households with greater income (either wage or produce) give more and receive more resulting in no effect on net giving while households with greater wealth give more and receive less but wealth does not significantly predict net giving, although it is retained in the best-fit model.

TABLE S5: Correlations between village-level predictors, and variance inflation factors

	Income Gini	**Wealth Gini**	**Mean income**	**Mean wealth**	**Community size**	**Distance to SB**	**VIF full**	**VIF reduced**
Income Gini	1	0.014	-0.124	0.212	0.617[t]	0.891**	109.7	
Wealth Gini	0.014	1	0.046	-0.197	0.386	-0.078	9.7	
Mean income	-0.124	0.046	1	-0.063	-0.286	-0.201	6.3	1.66
Mean wealth	0.212	-0.197	-0.063	1	0.51	0.033	12.0	
Community size	0.617[t]	0.386	-0.286	0.51	1	0.4	6.6	1.66
Distance to SB	0.891**	-0.078	-0.201	0.033	0.4	1	48.9	

[t] P<0.1, ** P<0.01

TABLE S6: Multilevel Poisson model estimating contingency in food transfers, i.e. the association between giving and receiving at the household and village level. The variances of the contingency measures (in italics) are 10 times higher at the village level (0.01) compared to the household level (0.001)

Predictors of calories given from A to B	**Parameter estimate (lower 95% CI, upper 95% CI)**
(Intercept)	-5.56 (-7.28, -3.78)***
Calories received from B to A	0.02 (-0.05, 0.08)
Age difference	0.001 (-0.02, 0.02)
Need difference	-0.00004 (-0.0001, 0.0001)
Average relatedness	16.8 (12.74, 21.7)***
Log distance [km]	-1.40 (-1.71, -1.11)***
Random effects	**Variance in random effects**
Intercept A	2.39
Slope calories received from B to A[a]	*0.001*
Intercept B	1.33
Village intercept	5.64
Village Slope calories received from B to A[b]	*0.01*

[a] This is the measure of household-specific contingency

[b] This is the measure of village-level contingency used in Table 5, Figure 4

Figure S1. Mean daily food production as a function of household produce income. Solid line is predicted fit and dashed lines are 95% CI controlling for wealth and average date of production interview. For detailed results see Table 1.

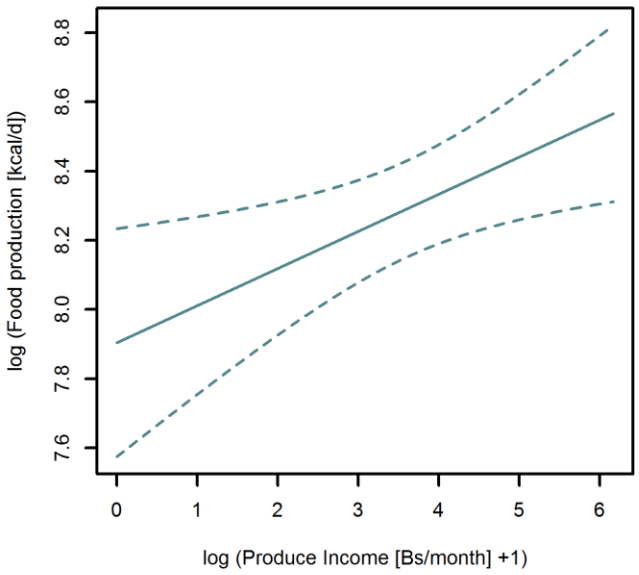


Figure S2: Variance (coefficient of variation, CV) in daily food production as a function of wage income, holding the other factor at population average. Solid lines are predicted curves from the best-fit regression model, which included wage labor and wealth, and dashed lines are 95% CI on these estimates. For detailed results see Table S3.

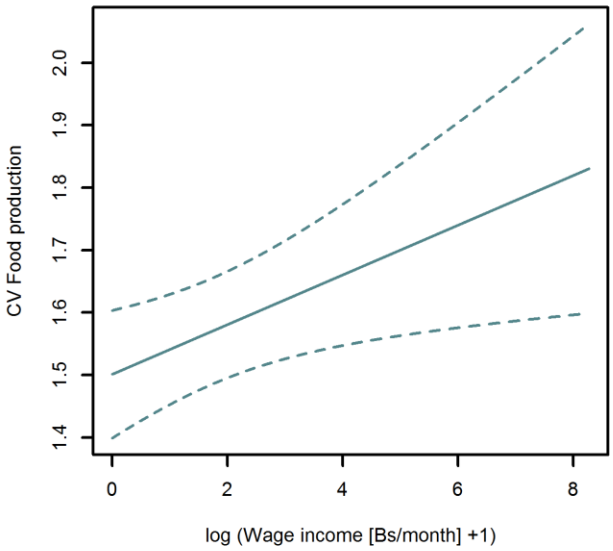
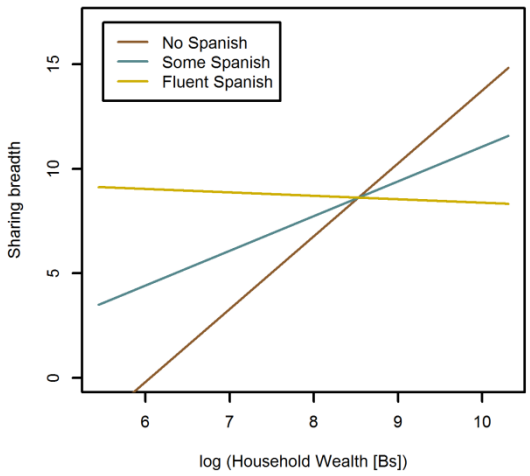


Figure S3. Sharing breadth increases with wealth a) only for those with minimal or no Spanish speaking ability, b) for those with the highest education. For detailed results see Table 4b.

a)



b)