

DRAFT Kipsigis analysis (Monique Borgerhoff Mulder)

A. Data

Wealth (general considerations)

Since the 1930s land has been the primary source of wealth for Kipsigis as the primary source of subsistence and market produce (Manners 1967, Mwanza 1977). Livestock wealth is also economically and culturally significant and will be analyzed in the late January (see Future Work).

Transmission of wealth

Land is inherited by sons following a rule of equal division; daughters disperse at marriage. The equal division rule results from institutions for the intergenerational transmission of livestock. When Kipsigis began to claim permanent agricultural plots in the first three decades of last century, they applied cattle inheritance rules to land. Inheritance is in reality a fluid process, since young men do not inherit land (or livestock) at any single instance (marriage, death of father, etc). Rather in their late teens they start cultivating a small patch of land on their father's plot and gain use rights to certain livestock. By the time they marry (in late 20s for this sample) an allocation of farming and grazing land is made – land that is still seen as “owned” by the father but effectively used by the son. In making these allocations fathers anticipate claims from sons who are still young, but who are expected to settle on the family plot when they get older – i.e., they don't give out all their land without considering claims in the future. Occasionally land and livestock will be reclaimed from older sons to distribute among younger sons (of the same wife), an event which causes considerable friction but is justified in terms of equal inheritance.

Sample

Sample I:

Sample I provides the best data for determining both father and son's wealth at the same approximate age. These are 25 settlers (pioneers) who established farms of different sizes in Abosi (a zone where Kipsigis expanded, using force, into Maasailand between 1930 and 1949) and for whom the size of the originally settled plot could easily be determined because of a recent government survey (Borgerhoff Mulder 1990)). Problems with this sample are that it is small, and that it reflects a period of expansionary and unsustainable growth of the Kipsigis population – see Interpretation, below). The 25 pioneers varied considerably in age at settlement (20-46 yrs, mean 29.2 yrs, median 30 yrs), but had stable land holdings after settlement.

Wealth measures are available for the sons (n=161) of the 25 pioneers who had reached 30 by 1991 (note that 25 pioneers have produced such a high number of sons because of polygyny). There were actually 181 sons who would be over 30 but 20 had disappeared from the study site and settled elsewhere, and were not traced. The sons varied in age in 1991 (30-67 yrs, mean 43 yrs, median 41 yrs); 30 years is used as cutoff because by that age most men have married and started reproducing; it also corresponds to mean age of

father's at settlement, thereby providing a loose control for age.

Details of the wealth measures

Land: land is measured in acres, as determined by the Government Land Office and field interviews, for both fathers' and sons' landholdings. For three fathers the plot sizes of their sons were not available from the GLO and an estimate was made assuming an equal split among sons. In all other cases where land had been surveyed, the shares were very egalitarian, rarely differing by more than 5% of the expected (egalitarian) share, rendering the above estimate legitimate. In a few cases sons bought new plots (in communities adjacent to Abosi), although in all cases they also continued to use the allocation from their fathers; in these cases the measure son acres includes "inherited" and "purchased" land.

Livestock: cattle numbers, the principle source of livestock wealth, were recorded for all men in the sample in 1982-3 and in 1991 (1991 data are used). Father's wealth at settlement was determined through retrospective "livestock history" interviews that were conducted with fathers as part of informal unstructured discussions about the man's marital and settlement history, and the origins of his family. There is no way to systematically check these measures, with the exception of informal cross checking with other similarly aged individuals who arrived in Abosi at the same time. Although the exact amounts of livestock reported were not always consistent, the ranking among men was almost identical. Because I was not writing during these retrospective interviews (often they were carried out while walking or driving) I am confident measures are quite reliable.

Analysis.

These measures were placed in a spreadsheet. The means, standard deviations, and range of father's acres (FAC) and son's acres (SONAC) are shown in Table 1, and their relationship is shown graphically in Figure 1.

Table 1 (columns coming for livestock and years of education)

MEASURES	FAC	LFAC	SONAC	LSONAC	FCOW	SONCOW	FED	SONED
N	161	161	161	161	161	161	161	161
Mean	86.44	4.098	7.92	1.868				
Std. Deviation	76.002	.868	5.012	.650				
Variance	5776.29	.754	25.125	.422				
Coefficient of variation (1)	.879	0.211	.633	.348				
Range	292	3.624	28	2.708				
Maximum	8	2.079	2	.693				
Minimum	300	5.703	30	3.401				

(1) std. deviation divided by the mean

Figure 1

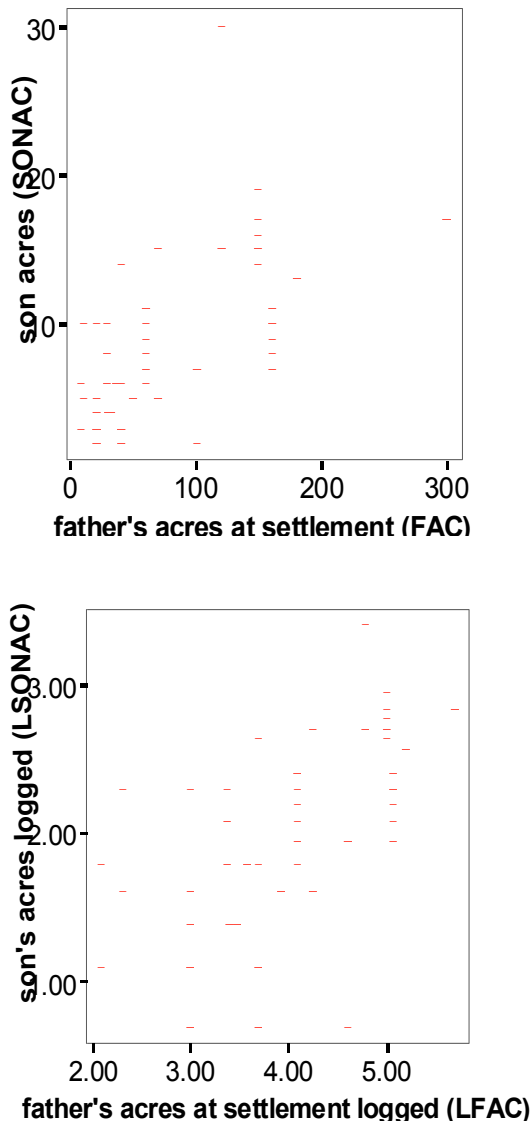


Figure 1a. Scatterplot of son's acres on father's acres (pearson's correlation coefficient 0.758, $p < 0.001$, $n = 161$). 1b Scatterplot for logged values of same variables

B. Parameter Estimates

The log values of both father's acres at settlement (LFAC) and son's acres (LSONAC) were used for these analyses, and LSONAC regressed on LFAC. The estimated unstandardized regression coefficient β is .565 (se 0.039, $t = 14.485$, $p < 0.001$). Younger sons are slightly wealthier than older sons. Entering son's age into the right side of the model (β (sons birthdate) = 0.013, se 0.004, $p < 0.001$), but this does not substantially alter the β parameter for wealth of .601 (se 0.039).

C. Interpretation

The β coefficient for this sample is exceptionally high, reflecting the fact that Kipsigis who settled in Abosi faced a largely unsaturated habitat. Men with many wives, or with the livestock to acquire many wives, tended to carve out large plots, and these were inherited by their sons. Although wealthy men attracted more wives than did poorer men women did not settle with men following an entirely ideal free distribution with respect to acres (Borgerhoff Mulder 1990), and hence wealthy men in this sample tend to have sons who are wealthy. The β for land is likely to be higher than the one (to be calculated) for livestock because acreage (in this system without a developed land market) does not vary over time in the same way as do livestock numbers (subject to risks of disease, theft and sale).

Why does sons' age not affect the β parameter in this population? This in part reflects the fact that land wealth is very stable over a man's life, since there is little market for land (see above). It also reflects the way wealth for sons was coded in this study. A just married man has a different amount of control over his share of his father's land than does a 35 year old man, who also differs in this respect from a 50 year old. In this study all men were coded as "owning" their land even though they might not yet have had full control of their full share. In other systems, and for Kipsigis livestock, age may well have a more marked effect on β .

D. Future Work

To the land analyses will be added livestock analyses.

Similar analyses will be repeated for Sample II. This sample constitutes men who settled on two "settlement schemes" (Kagelegele and Chesinendet) just prior to or at Independence, when European "settlers" went home. In Gelegele each settler got approximately 30 acres, and in Chesinendet a more variable allocation. In both of these more cosmopolitan areas land is much more frequently exchanged on the market. This sample is larger, and reflects a period (1960s to 1990s) of much more restrained growth.

E. Summary

Pop & sample		Parameter	Acres	Livestock (1)	Education(2)
Kipsigis I					
	<input type="checkbox"/>	Unstandardized coefficient for logged data (3)	.565 (0.039) .601 (0.039)		
	r	Pearson's correlation on raw data	.758		
	<input type="checkbox"/>	Sibling correlation			
Kipsigis II (1)					
	<input type="checkbox"/>				
	R				
	<input type="checkbox"/>				

(1) Upcoming

(2) Will be included for Sample II; almost all fathers in sample I are uneducated

(3) Second estimate is age controlled

Borgerhoff Mulder, M. 1990. Kipsigis women's preferences for wealthy men: Evidence for female choice in mammals. *Behavioral Ecology and Sociobiology* 27:255-264.

Manners, R. A. 1967. "The Kipsigis of Kenya: culture change in a "model" East African tribe," in *Contemporary change in traditional societies, vol 1*. Edited by J. Steward, pp. 207-359. Urbana: University of Illinois Press.

Mwanza, H. A. 1977. *A History of the Kipsigis*. Nairobi: East African Literature Bureau.