

Household Responses to Adult Settler Mortality in the 18th Century Cape Colony - An Alternative Institutional Perspective

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Why study settler mortality?

- The now famous Acemoglu, Johnson & Robinson argument



Transmission from mortality to poor growth (Acemoglu *et al.*, 2001)

Why study settler mortality?

- At the Cape: high mortality, but institutional arrangements perhaps allowed for a "coping mechanism"???
- Institutions that mortality at the Cape was associated with:
 - Slavery as labour substitute
 - Inheritance laws and widows
- Remarriage as a coping mechanism
 - Not measured here (however, widows were known to have played an important role in the establishment of an elite at the Cape)

Incidence of Maternal Mortality by District (% of households affected in the past)

Year	Cape Town	Stellenbosch	Drakenstein	Swellendam	Total
1723	0.621%	0.000%	0.181%		0.168%
1731	0.000%	0.917%	0.714%		0.528%
1738	0.952%	0.000%	0.289%		0.438%
1741	0.897%	0.000%	0.256%		0.395%
1752	1.754%	0.613%	1.326%	0.488%	0.998%
1757	0.741%	0.000%	1.471%	1.181%	1.052%
1762	0.000%	0.000%	1.296%		0.726%
1773	0.379%	0.000%	1.043%	0.805%	0.738%

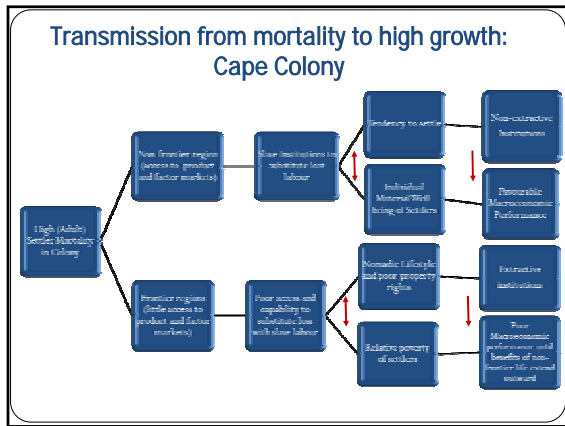
(Source: Matched Opgaafrollen and Inventories of Orphan Chamber Data)

Percentage of households with no recorded female adult settlers (Source: Opgaafrollen)

Year	Cape Town	Stellenbosch	Drakenstein	Swellendam	Total
1663	64.7%				64.7%
1670	43.1%				43.1%
1678	37.7%	70.7%			51.5%
1682	40.2%				40.2%
1685	36.8%	70.7%			58.3%
1688	59.2%				68.6%
1692	53.3%	56.0%	67.7%		58.4%
1695	51.1%	56.1%	59.7%		55.1%
1700	33.7%	52.7%	52.4%		44.6%
1702	48.1%	62.8%	53.8%		53.6%
1705	42.1%	53.4%	55.3%		48.6%
1709	41.3%	59.6%	57.3%		50.9%
1712	42.2%	58.4%	57.0%		50.8%
1716	43.1%				43.1%
1719	39.9%	56.1%	51.7%		46.7%
1723	37.3%	52.1%	45.8%	57.6%	46.6%
1731	36.9%	49.0%	46.2%		42.0%
1738	35.9%	52.0%	47.1%		42.6%
1741	39.5%	60.0%	48.1%		46.2%
1752	39.4%	49.1%	42.2%	57.6%	46.4%
1757	42.2%	43.3%	40.9%	48.0%	42.8%
1762	47.4%	46.9%	42.7%		45.7%
1773	40.9%	55.7%	36.6%	41.0%	41.2%

Life in the Cape Colony

- Settler - Family formation
 - Women married at a young age and had children on a regular basis and in short intervals. Wives of settlers described as hardworking, excellent mothers and housekeepers- key role in economic functioning of hh.
 - Widows played an essential role in the process of class formation.
 - Inheritance law in Cape Colony - marriages in community of property - when one of the spouses died, the surviving member received half of the estate.
 - Settlers were enriched by marrying widows since they gained slaves and farms
- Urban vs. rural (frontier) life
 - People living in and around Cape Town more exposed to contact with seafarers - they had greater opportunities
 - Extreme poverty experienced by farmers in the interior areas, who were often forced into semi-nomadic lifestyles



- ### Data
- Maternal mortality from the inventories of the Orphan Chamber
 - Indicates when mother died, number of child at which death occurred
 - Opgaafrollen – censuses for taxation purposes
 - “Sample frame”
 - Indicates which households were lead by widows
 - Information on assets
 - Allows us to measure socioeconomic status

- ### Hypotheses
- Both data sets not matched concurrently
 - Therefore, for each household
 - Was there **past maternal mortality** in different periods?
 - How did this influence labour decisions?
 - Did this cause asset or crop deprivation?
 - Was there **maternal mortality in the future**?
 - How did “current” socioeconomic factors influence future risks of mortality?
 - Were there different impacts at the frontier compared to other areas?
 - Widows = the impact of past **“paternal mortality”**
 - Inheritance divided in half between widow and sons
 - Per capita riches and independence when estate is large enough vs poverty and dependence when estate was small
 - Frontier

Past mortality to deprivation?

Table 1 Impact of past mortality on overall asset wealth and labour inputs

	Asset Index	Knechts	Male Slaves	Female Slaves	Boy Slaves	Girl Slaves
Stellenbosch	0.718	-0.079	-0.878	-0.58	-0.112	-0.167
	0.000***	0.047*	0.000***	0.000***	0.057	0.002**
	1.131	-0.234	-0.316	-0.535	-0.364	-0.324
Drakenstein	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	1.774	-0.306	-1.109	-1.101	-0.654	-0.595
	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
Swellendam	1.693	0.15	1.729	2.053	0.713	0.991
	0.000***	0.099	0.000***	0.000***	0.000***	0.000***
	0.046	-0.053	0.645	0.013	0.735	0.354
Widow	0.874	0.753	0.077	0.569	0.017*	0.241
	0.071	0.067	1.03	0.352	0.476	0.137
	0.723	0.597	0.000***	0.189	0.037*	0.547
Stellenbosch	0.046	-0.053	0.645	0.013	0.735	0.354
	-0.499	-0.179	-0.815	-1.637	-0.501	-0.712
	0.105	0.052	0.088	0.000***	0.032*	0.004**
Drakenstein	1.547	0.038	1.943	1.499	1.709	1.904
	0.001***	0.898	0.002**	0.011*	0.005**	0.001**
	0.925	0.258	0.901	0.875	0.829	0.844
Swellendam	-0.22	0.279	-0.307	0.340	-1.046	-0.942
	0.695	0.473	0.696	0.484	0.164	0.209
	-1.647	-0.046	0.453	-2.401	-1.877	-2.026
	0.001**	0.878	0.676	0.000***	0.002**	0.001***

- ### Assets and Labour
- Both past paternal and maternal mortality *increases* the asset index????
 - Except for maternal mortality in Swellendam (frontier)
 - Slaves as traditionally important asset indicator and elitist symbol
 - But here: past mortality increases the acquisition of slaves
 - Except in Swellendam!
 - Non-frontier households were able to accommodate the loss of household production with slaves
 - Too much poverty at frontier to follow this response
 - The role of *Knechts* (paid labour) did NOT change significantly in response to mortality

Table 2 Impact of past mortality on animal possession and wine harvests

	Horses	Cattle	Sheep	Pigs	Wine
Stellenbosch	1.651	2.86	2.788	0.164	0.985
Drakenstein	0.000***	0.000***	0.000***	0.001***	0.000***
Swellendam	2.798	3.339	3.687	-0.074	0.617
Widow	0.000***	0.000***	0.000***	0.008**	0.000***
Stellenbosch	3.741	4.428	5.34	-0.210	-0.508
Drakenstein	0.000***	0.000***	0.000***	0.000***	0.000***
Swellendam	0.000***	0.000***	0.000***	0.000***	0.000***
Interactions with widow					
Stellenbosch	-0.529	0.31	0.416	0.099	0.29
Drakenstein	0.003***	0.111	0.052	0.218	0.015*
Swellendam	0.695	2.069	2.692	0.969	1.687
Interactions with maternal mortality					
Stellenbosch	0.088	0.000***	0.000***	0.001***	0.000***
Drakenstein	0.018	2.772	2.252	0.152	2.236
Swellendam	0.953	0.000***	0.000***	0.235	0.000***
Past Maternal mortality	-0.199	-0.158	-0.554	-0.003	-0.282
Stellenbosch	0.742	0.807	0.334	0.989	0.117
Drakenstein	3.698	0.055	2.136	2.847	1.549
Swellendam	0.000***	0.985	0.581	0.206	0.442
Interactions with widow					
Stellenbosch	1.468	3.594	4.691	-0.104	0.931
Drakenstein	0.045*	0.000***	0.000***	0.642	0.127
Swellendam	0.18	2.868	3.089	0.114	0.343
Interactions with maternal mortality					
Stellenbosch	0.783	0.000***	0.026*	0.605	0.062

Animal Ownership

- Horses as a symbol of grandeur
 - Not necessarily a production input
 - Widowhood *reduces* ownership, particularly at frontier
 - Consolidation, with sons likely to have received them
 - Maternal mortality – increases ownership
- Cattle as production input
 - Similar "substitution" as with slaves, though same impact is now noticeable on frontier
 - These were the cattle farmers of the interior
 - Therefore no "labour substitution", but alternative "coping mechanism"

Wine production

- Widowhood clearly benefits wine production
 - Role of alcohol *pachters* in elite formation
 - Small impact on frontier
 - Division of resources
 - Therefore no speak of deprivation!
- Maternal mortality has no impact on wine yields
 - Females not involved in wine production
- IN SUM: wine production highly correlated with slave ownership
 - Labour substitution effectively prevents deprivation
 - And even leads to enrichment of widows

Table 3 Impact of past mortality on grain production and weapon possession

	Wheat reaped	Rye reaped	Barley reaped	Flinlocks	Pistols	Swords
Stellenbosch	0.485	0.304	0.129	0.965	1.128	0.952
Drakenstein	0.000***	0.000***	0.030*	0.000***	0.000***	0.000***
Swellendam	0.631	0.199	-0.262	1.428	2.671	1.428
Widow	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
Stellenbosch	-0.895	-0.006	-0.361	0.918	3.457	0.826
Drakenstein	0.000***	0.753	0.000***	0.000***	0.000***	0.000***
Swellendam	0.287	-0.041	0.283	-4.200	-1.434	-4.203
Interactions with widow						
Stellenbosch	0.103	0.336	0.025*	0.000***	0.000***	0.000***
Drakenstein	1.808	0.76	0.271	-0.94	-1.14	-0.921
Swellendam	0.000***	0.002**	0.329	0.000***	0.000***	0.000***
Interactions with maternal mortality						
Stellenbosch	2.154	0.589	0.013	-1.566	-2.751	-1.562
Drakenstein	0.000***	0.000***	0.939	0.000***	0.000***	0.000***
Swellendam	-0.292	0.042	-0.282	-1.015	-3.511	-0.923
Past Maternal mortality	0.108	0.35	0.027*	0.000***	0.000***	0.000***
Stellenbosch	-0.293	-0.141	0.145	0.905	0.344	0.901
Drakenstein	0.554	0.001**	0.724	0.003**	0.51	0.003**
Swellendam	2.834	4.415	-0.941	-0.185	0.266	-0.152
Interactions with widow						
Stellenbosch	0.345	0.184	0.031*	0.766	0.907	0.807
Drakenstein	1.526	-0.137	0.000	-1.334	0.161	-1.333
Swellendam	0.097	0.032*	1.000	0.000***	0.786	0.000***
Interactions with maternal mortality						
Stellenbosch	0.462	0.18	-0.096	-1.496	-0.649	-1.412
Swellendam	0.353	0.000***	0.815	0.000***	0.234	0.000***

Grains

- Wheat similar to wine
 - Intensive use of slaves avoids deprivation
- Rye
 - Maternal mortality causes deprivation
 - Though widowhood associated with advances
- Barley
 - Some signs of deprivation

Current assets and future mortality

Table 4 Impact of current socio-economic status on future mortality

	Future Mortality
Wheat reaped	-0.005
	0.334
Barley reaped	-0.016
	0.391
Stellenbosch	0.249
	0.089
Drakenstein	0.441
	0.000***
Swellendam	0.649
	0.000***
Asset Wealth	0.061
	0.232
Stellenbosch	-0.773
	0.002**
Drakenstein	-0.209
	0.015*
Swellendam	-1.244
	0.017*
Constant	-2.672
	0.000***
N	11979

*significant at 5% **significant at 1% ***significant at

- Grains as signs of food security
 - No reduction of future risk
- Frontier living significantly increases risk
 - However, insulated by asset wealth in these areas
 - Capability to obtain medical assistance

Concluding remarks

- Paid labour not important
- However, slave labour was increased in response to adult mortality
 - This meant crop yields were unaffected by mortality
 - Except at the frontier, where capability to acquire more slaves not possible
 - And in the case of widows wine even allowed enrichment
 - Explains elitism and remarriage at the Cape
 - Labour market institutions stops deprivation via mortality at the micro level
 - Contrast to AJR?
- Frontier living significantly increases risks of future maternal mortality
 - Though asset wealth insulates against this