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**PARC Pilot Study on Intra-Familial  
Transfers and Health Status,  
Malawi 1998: Field Report**

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Social  
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project



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## Introduction

The aim of the pilot study was to pretest two types of questionnaires. The larger questionnaire examined intra-familial transfers, including both help and gifts. The primary research question it addressed was: to what extent are the direction and amount of such transfers a function of the relative health status of the donors, recipients and other potential recipients in the family. The smaller questionnaire -- initially tested in two very different formats -- pretested a dementia severity rating scale. The long-term aims of this project are (initially) to develop a survey instrument that allows for a reliable diagnosis of "dementia" and ultimately to estimate the prevalence of dementia among the elderly in rural sub-Saharan Africa.

In both cases, the pilot study set out to examine the face validity of different types of questions. It also tried to identify local opposition to the questions and the general local response to this *type* of research. In general I think these aims were achieved. Based on this summer's work I feel comfortable developing a final questionnaire for the transfers project and making recommendations for the further development of the dementia questionnaire.

I discuss each of the projects separately. With respect to the transfers project the report basically summarizes my fieldnotes and a preliminary survey of the entered data. It then makes recommendations for next year's fieldwork (assuming a proposal is written and the full survey is funded).

The dementia project is a little more complicated. Because its aim is to develop an instrument that can be used to diagnose "likely dementia," there are a set of validity issues which are completely outside my realm of expertise. Ultimately, clinicians will need to be brought to the field to assess the validity of the instrument. Before then, however, there are some modifications to the existing instrument that can be made based on this summer's work.

## Research Context

The projects were conducted concurrently in Njale Village, just outside Liwonde town in Balaka District, Southern Region.<sup>1</sup> Because they were both pilot projects, I did not use a systematic sampling framework. We began from an initial point on the main road and followed a track, dropping an interviewer at each additional house away from the main road. When there was no-one available at a house, the interviewer would follow the main group and go to the next unvisited house. A few times, more than one person was interviewed from the same household.

The principal ethnic group in this area is the Yao, most of whom are Muslim. They are almost all matrilineal, matrilocal and tend to live in relatively nuclear households (in polygamous marriages, the husband often seems to divide his time between the different wives' houses). In addition, in this area they are primarily subsistence agriculturalists, though some cash crops -- especially cotton -- are also grown.

On the whole, Southern Region is thought to be slightly more (structurally) developed than other areas of

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<sup>1</sup>Additional questionnaires for the transfers project were administered in a second site (Mchinji) after my departure and I will add a brief report about those results if they raise new concerns. Based on informal conversations with people from the same ethnic group that predominates in that 2nd site -- the *Chewa* -- I expect these additional questionnaires to tell us more about ethnic/regional differences in the pattern of transfers than point to more problematic issues like the unacceptability of certain types of questions.

Malawi, though the Yao are also thought to be among the least educated of Malawi's ethnic groups.

There are three apparent reasons for the relatively high levels of development:

- C Most of the white farmers in the colonial era were based here -- though not in Balaka district which is too low altitude for the whites' favored tea and coffee plantations. One post-colonial consequence of this (a suspicion only) is that more NGOs/NGO projects have been established in this area than in the North. As with Central Province in Kenya, it is simply closer to NGO headquarters in Blantyre or Zomba.
- C Informants (from this and other areas) reported a stronger mercantilist culture in this area. For example, two of the reasons that informants gave for relatively lower educational levels in this area are: (a) a greater concentration of white settlement in the South in the colonial era meant that more people have had disposable income in this area than in other areas of Malawi (ie. more whites means more wage labor jobs). In addition, this means that (b) education is not associated with salaried occupations to the same extent as in other areas of the country, especially the North. Therefore children are pushed to work rather than to stay in school at an earlier age.
- C The current government, the first in the "multiparty era," has its base of support in this region -- President Muluzi is Yao -- and there are increasing reports that a disproportionate amount of the government's development expenditure is concentrated in this region.

Balaka District is a new district, originally the eastern half of Machinga District. Liwonde town, where I stayed, is one of the larger towns in the area *en route* between Blantyre and Lake Malawi. Njale village is a few kilometers outside the town. It is a relatively large village -- about 4 kilometers in diameter and with approximately 700 households. I chose it for several reasons:

- C I wanted to pretest the transfers questionnaire in the same area that Susan's survey was being administered because we plan to re-interview men and women in her sample. Njale village is about 10km from the nearest of Susan's sites.
- C It was within walking distance of where I was staying and one of my local informants -- who I subsequently employed as an interviewer -- lived there.
- C I wanted a single large village in order to minimize the amount of time spent visiting/paying respects to/ getting permission from the chief. Although interesting (and "exotic") I was simply too busy to spend too much time on courtesy calls in multiple villages.

## **A. Transfers Project**

### ***Basic Field Methods***

I hired and trained 5 local interviewers, all of them high-school graduates. I decided against college graduates because I wanted to use the same sort of interviewers (re. intelligence, reading/ writing/ comprehension ability) as we'll use in the full survey. I dismissed one of them early because of consistent incompetence. Her completed questionnaires were discarded.

The interviewers were trained not only in the mechanics of the questionnaire and in general interviewing techniques but also to note:

C respondents' comments about, difficulties with, or more general body-language responses to specific questions, and

C respondents' more general comments before and after the formal interview.

In the next section I will discuss how changes in the general research environment in Malawi – allegedly these changes are relatively recent – made this extra training, especially about noting the respondents more general comments, extremely useful.

I did not have the questionnaires translated into any of the local languages because I wanted to be able to change the questionnaires – to try out different question formats – in response to the previous days' fieldwork. So the questionnaires were printed in English and administered in 2 local languages, Yao and Chichewa. This meant that the most crucial and time-consuming part of interviewer training -- training lasted 3 days -- was spent on a "conceptual" translation of the questions. That is, I led a discussion about what the questions were trying to do. In only a few cases – for some crucial health questions – did we develop a standardized translation of specific questions. In those cases it was done collectively. I sat the interviewers in a circle and told them to develop a translation of questions *a....n*. When they'd finished I had other people -- staff on Susan's survey -- check it.

In general, I feel very comfortable with this translation process – translation "by committee." It is also, I think, a very good way for those involved in the project to get to know the aims of the project and the questionnaire. Next year I suggest that the project supervisors should translate the questionnaires in this way after training in the aims of the project etc.. (that training will be in English). Implicit in this recommendation is, of course, the notion that next year's questionnaire should be fully translated. Because this summer's project was "only a pilot" I feel comfortable with the limited level of standardization. More normative survey rules should apply next summer.

Finally, before going out to the field, each morning of the survey we met and spent between 15 minutes and 1.5 hours going over issues raised by the previous day's questionnaires. We called this the "debriefing." It was both an opportunity for me to ask about and correct errors in the questionnaires, to ask more qualitative types of questions derived from a substantive reading of the questionnaires, and to allow the interviewers to tell me stories about the previous day. Several additional questions in the final version of the questionnaire stem from these discussions.

### ***General Research Climate***

Since Malawi adopted a multi-party political system in 92/93 it appears to have become one of the fashionable destinations for international aid. There are an increasing number of donor-funded programs in the country. The transfers project was unwittingly caught in some of the fall-out of that expansion.

The project was introduced to the local chief and then by the interviewers to each of their respondents as a way of letting us -- a team from the University of Malawi and an American university -- understand "how family members help each other survive." This is, I think, an accurate description of the project. It is also the type of language that local respondents understand. However, because the difference between academic and NGO research is little understood in these areas, some locals interpreted this interest in how people survive as a preparatory step to distributing aid to the most impoverished. Thus, throughout the fieldwork my interviewers reported many requests for help and I suspect -- based on my own interactions with respondents and daily debriefings of the interviewers when we/they returned from the field -- that there are a few ways in which this may have affected the data. For example, certain people may have understated the number of surviving relatives in order to make themselves look more alone ie. poorer than they actually were. One respondent's last words to an interviewer (as the latter was leaving) was: "Tell them (ie. tell your boss) that we're really poverty-stricken, that we have nobody. It may be a blessing from G-d that you've come and asked me these questions." Some also thought that we might help those relatives that they named. One told us: "I've been giving names so much but I still haven't been given anything (ie. by the research team or by his relatives)."

The upshot: care will have to be taken to avoid this potentially serious bias next year, at least for the Transfers project. I recommend the following.

1. Hire interviewers to work in their own village -- Local people are more likely to know which of a respondent's family members are alive and giving them/receiving assistance. An exception to this may be in those villages with multiple clans and some tension between those clans. In such villages the normal lines of communication between different families in the village will be relatively dysfunctional so we should either hire one qualified representative from each part of the village or, if there are no qualified candidates from a particular clan, team an outside interviewer with a local informant from each clan.
2. Gifting the respondents -- Assuming next summer's project is funded, it becomes a longitudinal project. In Kenya we found that by the second visit to a respondent, the demands for some sort of "token of appreciation" or payment increased substantially. Similarly the number of respondents claiming to be "too busy" etc.. also increased (see Weinreb, Madhavan and Stern, 1998). This appears to be a much more common problem in longitudinal than in cross-sectional research. Anyway, we should give a small standardized gift to each respondent next summer. If we give it at the same time as stressing that there will be no other benefit associated with the project we should undermine at least part of the incentive that some people have to overstate their poverty.
3. Questionnaire design -- Design questions that minimize respondents' ability to exaggerate their poverty. For example, in relation to each of the surviving relatives the pilot questionnaire asked about "the most valuable thing" that the respondent has given and received from that person in the last year. A respondent who wishes to appear poorer may be more likely to underestimate this value. As discussed below I suggest replacing this question with a "what things has s/he given you in the last year?" and "... you given him/her...?" then code the value ourselves based on the local market price.

### ***The Validity of the Research Question: Qualitative work***

Informal interviews support the basic hypothesis -- ie. relative health status affects the direction and type of transfers within families -- but informants tended to distinguish what we call “giving” from more general “help.” Moreover, they also identified other important factors. Note that they generally could not rank these other factors -- “..they are all important..” -- so the following list is not ordered in any way:

- C the wealth of the relative
- C other financial demands on the relative such as school age children, sick spouse or close relative of the spouse
- C normative considerations -- eg. in Yao areas people can make more demands on their matrilineal than patrilineal kin

In theory, then, the “ideal type” of giver in a family is young, unmarried, healthy and wealthy (ie. probably working in urban areas or in another country) and related on the mother’s side. The further a relative from this ideal, the less likely it is that s/her can/will give freely.

The characteristics of the ideal helper, by contrast, are much harder to identify. Much of the day to day help that people get comes from married people with children who live locally. Aside from their health, the most important characteristic of helpers appears to be their social distance from the person they help. For example, they can equally be duty bound to help close kin -- especially parents and children -- or close (unrelated) friends.

In addition, informants asserted that help appears to go in both directions to a greater extent than other types of transfers. For example, wealthy relatives are expected to provide assistance, but there tends to be more of an exchange with relatives of the same socioeconomic class.

Finally, informants reported that the types of help given in the exchange typically follow systems of gender and age stratification. For example, a younger woman might help her mother or mother-in-law to pound maize or draw water. In return, the mother/mother-in-law will help with childcare and cooking, less physically demanding tasks. Similarly, a younger man might help his parents with farming, re-thatching a roof, or fixing/building a house or pit latrine. In return his mother will give him food, or cook for him (though his father will do little other than give “good counsel” and “solve problems,” types of assistance that we do not capture with our measures).

### ***The Questionnaire***

In the 1<sup>st</sup> site the full questionnaire was administered to 35 respondents. A shorter front section -- to speedily pretest some revised health questions -- were administered to an additional 12 respondents. In the 2<sup>nd</sup> site, the full questionnaire was supposed to have been administered to an additional 20 respondents. I expect to receive those questionnaires by August.

To answer the general research question -- to see if and to what extent the direction and amount of intra-familial transfers are a function of the relative health status of the donors, recipients and other potential recipients in the family -- means that we need to ask questions about every person in the respondent’s *potential* support network. *We a priori* defined that potential support network as the respondents’ parents, parents-in-law, father’s brother’s and sisters, mother’s brothers and sisters, own brothers and sisters, and own adult children. Informal discussions with local informants indicate that this is an accurate definition of a potential support network, especially with respect to more long-term assistance and



transfers. For example, although close friends appear to offer relatively important day-to-day help, demands for long-term assistance can normatively only be made on family

The questionnaire needed to: (a) find out how many people in this potential support network are still alive and then (b) ask questions about each of those people (from each of them we need to know their health status and the type of help or gifts which they have given or received from the respondent, if any).

Before going to the field we decided to do all of (a) before (b) because we thought that asking the same set of repetitive questions about the first members of the support network would lead to underreporting of survival among the last members of the network. This appears to have worked fine. In other words, in simple mechanical terms, the questionnaire appears to be okay.

#### *Identifying surviving family members*

We pretested two ways of getting information about (a). The first method was very simple. It asked for the names of the surviving paternal uncles, paternal aunts, maternal uncles, aunts etc... The second method was a little more complicated. We call it the "number born" method. It began with the respondent's father's siblings. It asked what number born the respondent's father was. Then it asked if he had any surviving brothers. If yes, the respondent was asked what number born they were. If no, the respondent was then asked the same questions about the father's sisters. Then the questionnaire asked the same set of questions about the respondent's mother's siblings, the respondent's own siblings and the respondent's children. For both of these methods, questions about each of the surviving relatives followed the listing of those surviving relatives.

We pretested both methods because we suspected that a fear of witchcraft might make people unwilling to give names of their relatives (a concern where Alex worked in Kenya and where Lisa worked in Zambia). In this area of Malawi, however, our suspicions were apparently groundless (informants from the second area told me that it should not be a concern in Mchinji either). People were willing to give names. Moreover, the names method was considerably faster than the number born method (so preferred by the interviewers). It may also have created a better atmosphere between the respondent and interviewer because respondents were more likely to know the names of their relatives than their place in the birth order, thus minimizing possible frustration with the whole interview, not a good thing for the quality of data. Indeed, this lack of familiarity with family members' *absolute* place in the birth order seemed especially true in relation to paternal relatives of the father's generation (though in Central and Northern regions' more patrilineal groups the reverse -- less familiarity with maternal than paternal relatives -- may be more common). On the other hand, they always knew if their parents' sibling was older or younger than the parent.

In fact, the only potential concerns with the names method is that certain respondents associated the giving of names with the direction of expected benefits. I've already mentioned one respondent's complaint that: "I've been giving names so much but I still haven't been given anything (ie. by the research team or by his relatives)." If we use the names method -- I think that we should -- it should be reiterated at the beginning of this section that no benefits will be derived by those people that the respondent names.

#### *Questions about surviving family members*

There were two main types of questions that we asked about each member of the potential support network. We asked about their health and about transfers between them and the respondent.

### i. Health questions

We tried a few ways of getting the health status of the respondent and the potential recipients/donors. The most efficient appears to be a diagrammatic scale that we called the "Umoyo Scale" -- Umoyo means "health" in *Chichewa* -- which is shown and explained to each respondent (I attach a copy). They assign themselves a score derived from the scale -- between 1 and 10 -- and a score from the same scale to all surviving relatives. The advantages of the scale are:

- C it is only one question so takes up little time in the interview;
- C it has much more variation than 3 or 4 precoded categories; for example, among the 17 interviews (or partial interviews) done with an Umoyo scale, current health status and health status last year was scored between 5 and 10, as shown in the tabulations below.

b10	Freq.	Percent	Cum.	B10 = current health status
5	1	5.88	5.88	
6	1	5.88	11.76	
7	4	23.53	35.29	
8	2	11.76	47.06	
9	3	17.65	64.71	
10	6	35.29	100.00	
Total	17	100.00		

  

b11b	Freq.	Percent	Cum.	B11b = health status at this time last year
5	1	5.88	5.88	
6	1	5.88	11.76	
7	3	17.65	29.41	
8	7	41.18	70.59	
9	3	17.65	88.24	
10	2	11.76	100.00	
Total	17	100.00		

- C it allows for an internally standardized evaluation of the relative health status of a respondent and his/her family members, including an explicit comparison of the health score of each of the family members;
- C it allows for a more accurate description of bad health than verbal description because there is apparently no way in *chichewa* to say "very bad health." The closest is a word "*pang'ono*" which simply means "not healthy." The scale allows people to distinguish bad from very bad from dire from at death's door etc..

There are, however, two potential problems with the scale as currently used. First, it is a measure of current health status, whereas our dependent variables -- the intrafamilial transfers -- will measure past behavior. Although past and present health status are highly correlated (though the correlation coefficient

was only .16 in our tiny sample of 17), we will probably miss some things if eg. last year's transfers were in response to Uncle Felix's terrible illness but now he's the picture of health. So we may want to ask about relatives' health status at this point last year *and* now. That will allow for a more accurate description of past and present behavior, and also allow us to see the extent to which a change in health status appears to have affected the transfers.

Second, I'm not fully convinced that the Umoyo scale is interpreted uniformly by the respondents. For example, people may give themselves a high score on the scale if they feel completely healthy now or if they just feel much healthier now than they did last month or if they just saw a sick relative and realize that they have nothing to complain about. So while I think that we should stick with it, it may be worthwhile having a backup set of questions comparing the respondent's health to the health of each of the potential donors and recipients of assistance in the network. For example, perhaps we could use some matrices at the end of each double section – ie. paternal uncles/aunts, maternal uncles/aunts, brothers/sisters, children – in which we ask the respondent to rank the people mentioned in that section and then ask "where in the ranking would you place yourself?"

In addition to the scale, we also asked the respondent about more specific symptoms /illnesses experienced in the last year. Some of these were precoded and others reported in open-ended questions by the respondent. The more common symptoms from the open-ended questions will be added to the precoded questions in the final version of the questionnaire.<sup>2</sup> There is some good variation on all these measures except for B17b (fever). 38 out of 46 respondents had fever during the previous year. It is an expected part of the annual cycle.

TABLE T2: PROPORTION WHO HAVE HAD PARTICULAR SYMPTOMS IN THE LAST YEAR, BY SYMPTOM

<i>Night sweats</i>	<i>Fever</i>	<i>Lack of appetite</i>	<i>Vomiting &gt;3 days</i>	<i>Diarrhoea &gt; 3 days</i>
.44	.83	.44	.20	.28

With the exception of B17b and, to a lesser extent, B17a, most of these variables also appear to be relatively correlated. In the other research areas, this may be less so, however, so it is probably not worth dropping either measure it.

(obs=46)

|      b17a      b17b      b17c      b17d      b17e  
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<sup>2</sup> For example, many people complained about extremely debilitating headaches called *majini*. These are said to affect men and women, young and old, but only amongst the Yao. They are also said to run in families, so are generally not considered to be caused by witchcraft. *Majini* can stop someone from working or accomplishing anything, can make a person become thin etc... It is treated with traditional medicine. My interviewers told me that modern medicine can't do anything to cure it. (Is this just bad migraine or something else? Anyone know any doctors who want to solve a medical mystery?)

b17a	1.0000					
b17b	0.0553	1.0000				
b17c	0.4692	0.0553	1.0000			
b17d	0.0096	0.2263	0.2307	1.0000		
b17e	0.2287	0.0332	0.2287	0.2990	1.0000	

Some of the field responses to these more specific “health” questions should also be noted. Interviewers reported that in several interviews respondents smiled after begin asked these questions and said (to paraphrase): “You people are trying to find out if we have AIDS, aren’t you?” I’m not sure how, if at all, this local interpretation of our intent changed the general pattern of response. On one hand, I imagine that if there is a bias it will be towards an exaggeration of health problems for the same reason as the exaggeration of poverty noted above. On the other, I can see how people would not want to sound like they are ill because they want to avoid the stigma of AIDS.

For our purposes, given the high prevalence of HIV/AIDS in Malawi and the huge publicity campaigns, I see no way to avoid these AIDS-derived interpretations when asking any questions about adult health. We can simply try to minimize any potential bias from the beginning by pointing out that we will not be giving more to those who are less healthy than to those who are more healthy.

#### *Extra health questions*

As mentioned above, local informants suggested that the health of relatives’ immediate family members may also affect the amount and direction of transfers within the family. We should therefore ask about the health status of the spouse of each of these relatives.

## **ii. Transfers**

### *Parents and Parents-in-law*

The most detailed types of questions about transfers were asked about exchanges between the respondent and his/her parents and parents-in-law. Throughout this section of the questionnaire, we distinguished “help” from things which were given (all other relatives were only asked about the most valuable thing given/received in the last year).

Table T3: The number of surviving parents and parents-in-law ( $N=35$ ), the number who helped and were helped, and the number who gave and were given, by type of parent.\*

Type of parent	***	help	R. gave	Received	R. gave	Received
			help	help	“thing”	“thing”
Father	14		6	5	5	5
Mother	17		12	10	8	8
Father-in-law	10		1	1	1	0
Mother-in-law	15		6	6	2	4

\*There are fewer parents-in-law than parents because a few respondents were divorced or never married so weren’t asked these questions. In addition, most of the respondents (2/3) are women so because of spousal age difference have older parent-in-law than parents.

\*\* A list of the types of help and gifts exchanged between respondents and their parents/in-law is appended in Appendix 1.

Table T3 tabulates the number of respondents who gave and received help and other things to and from parents and parents-in-law. As expected in this matrilocal area (and given the fact that 2/3rd of the

respondents are women) a higher proportion of help and other gifts was exchanged with mothers than with any other categories. In addition, given the matrilineal nature of inheritance systems, fathers-in-law are the least involved in these exchanges.

We pretested a method that would allow us to assign a monetary value to the exchanges. This involved differentiating help and gifts. Initially interviewers had problems with this differentiation. The most effective way of explaining it to them was to distinguish money and objects that were purchased -- radio, maize, oil, shirt etc.. -- from services rendered -- eg. collecting firewood, caring for children etc..

The distinction between help and gifts was made so that we could assign a value -- based on local market prices -- to the gifts. This worked well. The problem, of course, is the limitation of valuing only gifts. By doing so, we eliminate all the services that might have to be purchased in the absence of an exchange between the respondent and her/his parent/in-law.

On a more qualitative level this limitation is also problematic. Although remunerations (including gifts) seem to be extremely important symbolically -- a "good" child supports his/her parent -- day-to-day assistance of a non-monetary type is probably a more important contribution to peoples' lives. So we need to find some way to assign some sort of value -- ie. monetary value -- to these types of services. I think that this will also be important when looking at changes in fertility behavior in round 2 of the social networks/ fertility survey in Summer 2000. There is a large literature on the effects of social support networks on fertility behavior but I don't remember seeing -- certainly in relation to sub-Saharan Africa -- an attempt to value that assistance.

The best way that I can think of is to do it in the following two stages

#### A. Estimating time consumption

- C We assign a "time-consumption" ranking to these services and then a monetary value. For example, from most to least time-consuming: building a house or pit latrine; thatching a roof; sowing, weeding, harvesting; going to the market, collecting firewood; caring for children. Appendix 1 lists tabulations of the types of help given and received. We will use this as the starting list and add to it on an iterative basis as different types of help are mentioned in the field.
- C We ask about the frequency of this type of help.
- C Each of the tasks is given a monetary value based on man-hours spent doing the task and the frequency with which the task is done.

#### B. Estimating indirect spending

- C Some of these types of help also involve some spending. For example, firewood is generally free in rural areas. It simply takes time to go and fetch it. But houses and pit latrines tend to be built with locally produced bricks (every village that I walked through appeared to have its own brick-maker from whom local people tend to buy bricks). So each of the types of help that were listed in the open-ended questions in the pilot and that may involve some purchasing can be followed with a set of questions like: "Who provided the bricks? ...seeds? ...firewood?" The pre-coded answers etc... with options for you, father, mother, uncle, aunt, brother, sister, adult child, other (specify) etc... Again, we can assign local market values of each of these products and add those values to the net value of the exchanges.

This 2-stage process is designed to work for all exchanges which do not fit cleanly into either the “gifts” or “help” category. A version of this method should also work for the most common exchange of this type which I came across in the field: “cooking” and/or “food.” This also appears to be the most ubiquitous type of exchange between respondents and their mothers.<sup>3</sup>

It is perhaps a special problem to assess the value of help that cooking/food involves because (a) this can be a daily exchange; and (b) sometimes it refers only to the preparation of foods while other times it also refers to the purchase or provision of foodstuffs.<sup>4</sup> We need to know how often food is provided by the daughter and how often by the mother. This seems to be a basic piece of data about household economics. At the moment, the most efficient way that I can think of is a few questions which ask about what was eaten yesterday, who bought the ingredients, then an additional question like: “who generally purchases or provides the food?”

### *Other Relatives*

Table T1 reports basic data about transfers between the respondent and specific types of relatives.

TABLE T1: THE NUMBER OF SURVIVING RELATIVES TO WHOM WERE GIVEN, OR FROM WHOM WERE RECEIVED, ANY “THINGS” IN THE LAST YEAR ( $N=35$ ).

	Paternal Uncles (n=39)*	Paternal Aunts (n=31)*	Maternal Uncles (n=31)	Maternal Aunts (n=28)	Brothers (N=43)**	Sisters (N=51)**	Adult Children (n=51)
Respondent gave to ...	0	3	10	10	21	21	22
Respondent received from ...	17	1	12	12	17	13	26

A few features stand out on this ecological level. The first is substantive. As everyone kept on telling us, there are large differences in the type of exchange relationship that people have with their paternal and maternal relatives. However, the data are not fully consistent with the oft’ stated norm. There is a relatively strong system of mutual exchanges with maternal aunts and uncles. But there also appear to be strong normative rules against helping paternal uncles – consistent with the matrilineal system of inheritance – although those rules do not extend to downward transfers. That is, uncles appear to help their brothers’ children substantially. This is an interesting twist on breaking/revising a norm (and it

<sup>3</sup> Because the Yao marriage system is matrilineal, daughters and mothers tend to live close to one another and tend to cook for each other frequently. In Chewa areas -- where the matrilineal, matrilineal system has weakened, I expect the frequency of this exchange to be reduced. In patrilineal Tumbuka areas in the North, the most frequent type of cooking exchange will likely be between daughters-in-law and mothers-in-law.

<sup>4</sup>Note that there do not appear to be any fully self-sufficient households in this area. Almost everyone eats some purchased food, even if it is only cooking oil and “relish” (a general flavoring).

appears far too powerful to be caused by sampling error). Lisa Cliggett can do follow-up ethnographic work to provide an explanation next summer.

There are also some methodological pointers in the table. The first is a good thing: the smaller number of surviving brothers fits with higher AIDS mortality among males. This gives us some faith the reliability of these survival data. At least there is no gender bias.

The second point is not as salutary. There is a relatively large difference between the number of surviving paternal uncles and paternal aunts. This may just be a function of the small  $n$ . Alternatively, it may be indicative of something more insidious with respect to the analytic aims of the project ie. people are less likely to mention paternal aunts if they have less contact with them. Given that there are relatively few exchanges between the respondents and their paternal aunts, respondents are more likely to understate the latter's existence. That reduces our denominator of paternal aunts.

Given that Yao society is both matrilineal and patriarchal this particular type of bias is not unexpected. Paternal aunts are probably the least important members of the family. The father and father's brothers play a role in family decision-making; the mother's brothers are institutionally responsible for the mother and her children; the matrilocality of marriage means that the mother's sisters are likely to live in the same area. Only the father's sisters have no institutionalized authoritative or networked connection to the respondent. On a more practical level, the only way that I can think to minimize this potential bias in the field is, as already mentioned, to use local interviewers. They are more likely to have know the family pretty well and so be able to remind the respondent about missing aunt  $x$ . Additionally/alternatively, in the analytic stage perhaps we can bootstrap some missing women to fill in the data. If they aren't mentioned in the support network then they clearly don't support or are supported by the respondent. So we randomly assign them the same range of characteristics as surviving uncles with respect to age, health and other characteristics.

#### *Additional questions*

Two additional questions that we need to add to the uncles, aunts, and siblings sections, are: "Do they have any adult children?" and "Do they have any children still in school?" These derive from two hypotheses which emerged from informal conversations and debriefings with interviewers:

- C those with adult children are less likely to rely on other family members;
- C those with young children less likely to be able to give money etc.. to other members of the family.

**iii. Problem questions** -- None of the questions appeared to be too sensitive so if we can eliminate/minimize the potential bias that arises out of expectations of benefit, we should be able to get highly accurate data on both transfers and health, at least if we use local interviewers as suggested above.

There are certain questions, which respondents couldn't/wouldn't answer. As expected the most common of these were the background characteristics eg. age and educational level of parents-in-law, parents, and parents' siblings. Between a quarter and a third of the 37 questionnaires done on Days 3, 4, and 5 had at least one age of parent or parent-in-law reported as don't know. Similarly between a sixth and a quarter had at least one educational status of a parent or parent-in-law reported as "don't know."

One way to get around the missing age of parent is to ask the respondent for his/her place in the birth order and then extrapolate a parity-dependent generational age difference. The best way I can think to avoid missing data on the educational status of parents and parent-in-law is to ask about literacy in English (the language of school). That won't tell us anything about the length of schooling, but it is a measure of access to education.

Alternatively, if variation in length of schooling is needed/desired we can ask both types of questions: "did he go to school?" If so, "how long?" And also ask: "Is/was he literate?" If the respondent doesn't know if her parent/in-law went to school but knows he is not literate, we can be relatively certain that he didn't go to school, especially with respect to older respondents (the Malawian school system was underdeveloped until independence so it was relatively unusual to go to school).<sup>5</sup> On the other hand, if the respondent doesn't know if her parent/in-law went to school but knows that he *is* literate, we can be relatively certain that he went to school and we can assign him an average number of years in school derived from other people's data. Finally, to assess the reliability of our inferences we can compare it to a cross tab for the respective age-group in the last Malawi census (Eliya Zulu has the census so can probably run a cross-tab pretty easily).

The only other questions that we had some "don't knows" were in relation to uncles and aunts. In a few cases, the respondent knew about surviving uncles and aunts but had no contact with them so didn't know their health status etc... In almost all the cases these relatives were living in another part of Malawi or in another country -- Mozambique and Zimbabwe were the most common. In only one case did the interviewer note that the respondent's lack of contact with his family stemmed from interpersonal conflict between him and the rest of the family.

### ***Modeling***

I haven't really thought that much about the specifics of modeling the main research question. But it seems to me that it presents an interesting opportunity for hierarchical linear modeling. Briefly: the respondent can be thought of as being measured at level-2. All his surviving relatives are level-1. Estimating dependent variable  $Y_{ij}$  is therefore equivalent to measuring the sum of transfers at level-2 as a function of the average health status of familial network partners, and the respondent's health status relative to that average. Its like measuring a community level characteristic.

The main reason this makes sense to me substantively is that we can assume that people have an unobserved propensity to either give or not give. If they are "givers" they may be more likely to give to more people. If they are "not-givers" they will be less likely to give to everyone. In other words, a respondent's exchange relationship with one aunt is correlated with the exchange relationship with another aunt and other families. We need to control for this non-independence in the relationship to network partners.

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<sup>5</sup> One relatively educated local informant (he worked for Malawi Railways for 30 years and now owns a "bottle-shop" (selling beer, soft drinks, condoms etc..) in Liwonde town told us that there weren't even any secondary schools for Africans (grade 8+) until the late 1950s, so he had to go to Zimbabwe after he finished primary school.



***Conclusion***

This project can go on the road. It is both do-able and an interesting way to examine features of broader family structure than normally attempted. The modeling should be interesting. It is part of a broader data-set which will allow us to go deeper into the context of family decision-making than possible in most datasets. And substantively it ties into general family research, research on aging, and on the consequences of AIDS. Last, but not least, the data necessary to answer the questions are not sensitive so not liable to be biased in ways that, I think, affect an increasing number of dependent variables -- eg. attitudinal measures -- in socio-demographic research.

***Future plans***

This year, based on this pilot, Jere Behrman and Susan Watkins will apply for funding -- I think from NIA and from Linda Aiken's AIDS research fund/institute -- to administer a survey to the full Malawi sample, roughly 1,200 ever-married women and their husbands. Because I will have completed the program by then, the extent of my involvement will be negotiated in the coming months.

## **B. Dementia Project**

### ***Basic Field Methods***

The general field methods were the same as those used in the transfers project. That is, I hired and trained 2 local interviewers, both of them high-school graduates. I decided against college graduates for the reasons given in the Transfers project. I also maintained the flexibility of the pilot by using English language questionnaires though again, as we come closer to a final version of the survey instrument, it should be translated.

### ***General Research Climate***

Initially, I anticipated that some of the same local concerns about expected benefits would affect responses to the dementia questions in the same way that they may have affected responses to the transfers questions. There are no signs that this happened, however. This may either be because the competence of the 2 dementia interviewers was more limited than that of the transfers interviewers. So their possible failure to report such biased responses meant that I also missed them. Alternatively, the lack of such signs may reflect a real difference in local people's responses to these two surveys. The perceived benefits of a dementia survey may be much less than those of a survey about general health and "survival."

### ***Two Questionnaires***

The general aim of the dementia project was to pretest an adaptation of a Dementia Severity Rating Scale in a rural area of sub-Saharan Africa. Normally this scale is filled by a/the care-giver as a self-administered questionnaire. I developed two adaptations of the questionnaire which I thought would be suitable for use in an African context. I changed the questionnaire to one that could be administered by an interviewer. And all questions were made to refer to a parent – in this case the father – of the respondent. The assumption – confirmed in the field – was that in the absence of institutionalized care for the elderly adult children take care of parents.

A copy of each of the versions is appended. Both cover the same substantive areas as the original severity rating scale: cleanliness, food, recognition of family members, orientation to time, orientation to place, ability to make decisions, home and general activities, urination and bowels, memory, speech and language, and ability to get from place to place.

The first adaptation discarded about half of the categories of the original rating scale and had the interviewer ask the respondent which of the following descriptions most accurately depicted his/her father. The interviewer then described between 2 and 4 types of people and circled the one the respondent thought was most like their parent. Sometimes the interviewer had to repeat the description but sometimes the respondent chose an option relatively quickly.

The second adaptation had more of a traditional questionnaire format. I discarded very few of the options from the original rating scale, therefore allowing for more variance than in the first. Instead, each of the original options was turned into an individual question. With the help of skips and filter questions I was able to translate the responses into a rating scale in which answering yes to each additional question translated into a higher score on that category.

After a few days in the field there appeared to be more apparent problems with the 1<sup>st</sup> than 2<sup>nd</sup> version of

the questionnaire. In relation to the 2<sup>nd</sup> version, the problems with the 1<sup>st</sup> were:

- a. It didn't allow for as much variance as the original rating scale;
- b. It shifted too much of the focus of the interview onto the interviewer, rather than allowing for more of a dialogue;
- c. There were certain respondents who, I suspect, were not really adept at the abstract thinking that this method required.

So I decided to stick with the 2<sup>nd</sup> version only.

**General problems with the questionnaire**

The most obvious problem is that we can't assess the external validity of the complete scale or of individual questions until neurologists physically examine a sample of the respondents' parents. That means taking a couple of neurologists to the field (which I assume is well beyond PARC funding capabilities – my father-in-law, a neurologist involved with WHO, suggested WHO funding for a general LDC dementia project). Till then we're limited to looking at the data.

If we look at a general correlation matrix between the different categories on the dementia scale – reproduced in Table D1 – we see that there are significant differences in the strength of the bivariate relationships.

TABLE D1: CORRELATION MATRIX: ALL CATEGORIES IN DEMENTIA SEVERITY RATING SCALE (N=56)

	c	f	r	t	p	j	h
c	1.0000						
f	0.9897	1.0000					
r	-0.0601	-0.0639	1.0000				
t	-0.0511	-0.0543	0.6668	1.0000			
p	-0.0511	-0.0543	0.4740	0.7057	1.0000		
j	-0.1015	-0.1078	0.3850	0.5560	0.4475	1.0000	
h	0.2019	0.2623	0.2947	0.5248	0.5008	0.4975	1.0000
i	0.0735	0.1146	-0.0601	-0.0511	0.4442	0.2029	0.3365
m	-0.1147	-0.1219	0.5781	0.4017	0.3445	0.6595	0.4725
l	-0.0727	-0.0772	0.1485	0.2622	0.1845	0.6266	0.1821
w	0.1162	0.1841	0.3872	0.5221	0.7738	0.2952	0.6296

  

	i	m	l	w
i	1.0000			
m	0.0459	1.0000		
l	0.0363	0.5100	1.0000	
w	0.6297	0.2305	0.1057	1.0000

In fact, if we arbitrarily consider a .2 correlation as a threshold for relatively powerful correlation, then we can produce Table D2.

TABLE D2: THE NUMBER OF DEMENTIA CATEGORIES WITH A CORRELATION COEFFICIENT >.2, BY CATEGORY

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Category	c	f	r	t	p	j	h	i	m	l	w
Number	2	2	5	7	7	8	9	4	6	3	7

---

Assuming that the general symptoms of dementia are correlated, then clearly the strongest categories in the scale – at least as represented in these questionnaires – are t, p, w, j, and h; and the weakest are c, f, and l. It is possible that they are measuring different aspects of dementia, but the fact that c and f are only correlated with themselves and with h raises some questions about their reliability as indications of dementia in sub-Saharan Africa. I'll return to this later.

Another type of explanation for these differences in the strength of correlation is related to a problem that emerged in the field. That is, the lack of general health care means that some of the questions pick up on other conditions which are associated with the elderly in these societies. For example, of the 56 people in the pilot, 7 had an overall score greater than 10. Of these, 4 – they had the highest scores – had other problems whose symptoms are associated with other conditions aside from dementia, especially eye problems, as seen below.

<i>Obs #</i>	<i>Score</i>	<i>Comment</i>
53.	14	Sometimes normal, other times crazy: schizophrenia?
54.	15	Blind
55.	16	Disoriented b/ eye problem; bilharzia; urinates blood
56.	24	Blind, but also some signs of dementia

A bunch of questions in several categories appear to assume normal sensory ability. Similarly, the person who scored 16 overall scored relatively high on the urination category because of a general infection. So, if it is possible, I think that a more reliable indication of dementia in the sub-Saharan context – or at least one with fewer false positives – will be oriented less towards general physical conditions than mental abilities like memory, decision making, and orientation.

### ***Specific problems***

There appears to be too little variation on certain questions, and too much on others.

#### *Too little variation*

Only 2 out of 56 respondents' fathers were scored higher than 0 on each of the food, cleanliness, and urination and bowels categories. I suspect that the last of these may stem from the sensitivity of the issue. On the other hand, several educated Malawians assured me that it is okay to ask these questions, so its not clear that the questions are so sensitive. In addition, there appears to be good correlations between the three (1 respondent scores more than 0 on all 3).

The food and cleanliness categories are more problematic. It may be something as simple as the fact that they are the first questions on the questionnaire so respondents are not yet used to the format, still trying to figure out how they want to answer etc. On the other hand, the interviewers were taught to spend several minutes just chatting to the respondents before the interview so its not like these questions were asked of completely 'cold' respondents.

More worrying is the possibility that people do not survive very long once they have problems feeding themselves. This is the one area where I had very little success in informal interviewing / qualitative work. An ethnographer with roots in the area would do much, much better. For example, when I asked about how the elderly who are sick survive, I was given the normal list of general, normative (and non-committal) answers: “their children help them... give them money ... take them to the hospital... to the traditional healer..” etc.. The few times I asked how about when the person is so sick that they can’t look after themselves even if their children give them money, we moved closer to “up to G-d” sort of answers. Anyway, the overall point is clear. Where dementia – or other conditions – make it impossible for someone to feed themselves in the long-term, the absence of institutionalized care means that their life expectancy appears to be considerably shorter than in MDCs. Their care-givers are already struggling to provide food for their children etc... In terms of the rating scale this means that we should move away from these types of questions too.<sup>6</sup>

*Too much variation*

34% scored more than 0 in the “ability to make decisions” category, 39% scored more than 0 in the “home and general activities” category, and 37.5% scored more than 0 in the “memory” category. In most of these cases the relatively high scoring is not too worrying because it tends to be no higher than 1 (23%, 23%, and 25% of the total cases, respectively). Moreover, it appears to be correlated with age as the results of the following logits show (in each case, 0 on the dependent variable means scored 0, and 1 means scored >0).

**Logit regression: ‘Ability to make decisions’ on age -- j**

Log Likelihood = -33.093293

Number of obs = 56  
 chi2(1) = 5.56  
 Prob > chi2 = 0.0184  
 Pseudo R2 = 0.0774

jbin	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
age	.0452259	.0200844	2.252	0.024	.0058612	.0845905
_cons	-3.886752	1.48949	-2.609	0.009	-6.806099	-.967406

**Logit regression: ‘Home and general activities’ on age -- h**

Log Likelihood = -33.121962

Number of obs = 56  
 chi2(1) = 8.80  
 Prob > chi2 = 0.0030  
 Pseudo R2 = 0.1172

hbin	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
age	.0567234	.0205491	2.760	0.006	.016448	.0969989

<sup>6</sup>It should also be noted that this explanation for the small amount of variation on *f* should also explain why we got little variation on *c* and *i*. Presumably, these are relatively highly correlated in MDC populations too (?).

```

_cons | -4.454517  1.507387  -2.955  0.003  -7.40894  -1.500093
-----

```

### Logit regression: 'Memory' on age -- *m*

```

Number of obs =    56
chi2(1)       =    2.27
Prob > chi2   = 0.1320
Pseudo R2    = 0.0306
Log Likelihood = -35.913047

```

```

-----
      mbin |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-----+-----
      age |   .0275346   .0185869    1.481   0.139   -.0088951   .0639643
     _cons |  -2.448601   1.351275   -1.812   0.070   -5.097052   .1998502
-----

```

For all of the explanatory power of age, however, there is clearly a large amount of unexplained variance. It may have something to do with the format of the questionnaire. These are 3 of the largest categories so 2 of them -- *j* and *h* (which were also the most correlated with other measures) -- had extra filter questions at the beginning which may have biased the scores upwards. Someone needs to decide if this is something to worry about.

### Conclusion

I think the long-term aims of the project are definitely achievable. We can play around some more with the questionnaire – maybe to focus more on the more mental signs/consequences of dementia. Because Lisa couldn't make it to Malawi, there is enough money left in this summer's allocation to PARC -- about \$700 -- to fund a smaller follow-up with an amended questionnaire. I have a contact address for the supervisor involved in this project. He knows and understands the general aims of the project, is very competent, and is also responsible enough to do the follow-up interviewing without supervision.

Ultimately, of course, we'll have to bring in some neurologists for a systematic check on the reliability of the scale. Whatever happens, I would like to participate. This is just the sort of project which I like: solving a puzzle using interdisciplinary methods in an interesting part of the world. Moreover, having been involved in these initial stages I am interested in seeing/producing the eventual outcome.

APPENDIX 1: THE TYPE OF HELP AND GIFTS THAT RESPONDENTS GIVE AND RECEIVE FROM PARENTS AND PARENTS IN LAW.

1. What are the most important ways that you have helped your father in the last year?

c1a10b	Freq.	Percent	Cum.
cooking, washing, childcare	1	16.67	16.67
farming, firewood	1	16.67	33.33
food	2	33.33	66.67
water, cooking	1	16.67	83.33
water, washing	1	16.67	100.00

2. What are the most important ways that you have helped your mother in the last year?

c1b10b	Freq.	Percent	Cum.
Constructed latrine, farming	1	8.33	8.33
cooking, fetch water, sweeping	1	8.33	16.67
cooking, firewood	1	8.33	25.00
cooking, water, farming	1	8.33	33.33
draw water, firewood, cooking	1	8.33	41.67
farming, water, washing	1	8.33	50.00
food	3	25.00	75.00
food, farming	1	8.33	83.33
water, firewood	1	8.33	91.67
water, pounding maize	1	8.33	100.00

3. What are the most important ways that you have helped your father-in-law in the last year?

c1c10b	Freq.	Percent	Cum.
farming, roofing, childcare	1	100.00	100.00

4. What are the most important ways that you have helped your mother-in-law in the last year?

c1d10b	Freq.	Percent	Cum.
Farming, roofing a house, built kitchen	1	16.67	16.67
cooking, water, firewood	1	16.67	33.33
farming, constructing a house	1	16.67	50.00
food, money, salt	1	16.67	66.67
soap, food, clothes	1	16.67	83.33
washing, household chores	1	16.67	100.00

## 5. What are the most important things that you gave your father (since this time last year)?

cla13b	Freq.	Percent	Cum.
clothes, money, relish	1	20.00	20.00
clothes, relish	1	20.00	40.00
food	1	20.00	60.00
food, salt	1	20.00	80.00
money, clothes, soap	1	20.00	100.00

## 6. What are the most important things that you gave your mother (since this time last year)?

clb13b	Freq.	Percent	Cum.
Food	1	10.00	10.00
clothing, food, blanket	1	10.00	20.00
food	1	10.00	30.00
food, clothes, blanket	2	20.00	50.00
food, salt	1	10.00	60.00
maize, soap, sugar	1	10.00	70.00
money, clothes, soap	1	10.00	80.00
shoes, clothes	1	10.00	90.00
soap, clothes, money	1	10.00	100.00

## 7. What are the most important things that you gave your father-in-law (since this time last year)?

clc13b	Freq.	Percent	Cum.
soap, sugar, money	1	100.00	100.00

## 8. What are the most important things that you gave your father-in-law (since this time last year)?

cld13b	Freq.	Percent	Cum.
dress, sugar	1	16.67	16.67
food, salt, relish	1	16.67	33.33
food, salt, soap	1	16.67	50.00
money, bag of maize	1	16.67	66.67
relish, salt, bag of maize	1	16.67	83.33
relish, water, cooking	1	16.67	100.00

## 9. What are the most important ways that your father helped you in the last year?

cla15b	Freq.	Percent	Cum.
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cooking		1	20.00	20.00
farming		1	20.00	40.00
fetch water		1	20.00	60.00
food, money		1	20.00	80.00
helping her in hosp., solving conflicts		1	20.00	100.00

## 10. What are the most important ways that your mother helped you in the last year?

c1b15b		Freq.	Percent	Cum.
-----		-----	-----	-----
Cooking, water		1	12.50	12.50
childcare, escort to hosp., getting med		1	12.50	25.00
farming, childcare		1	12.50	37.50
fetch water		1	12.50	50.00
food, water		1	12.50	62.50
looking after children		2	25.00	87.50
taking R to hospital, looking for food		1	12.50	100.00

## 11. What are the most important ways that your mother helped you in the last year?

c1c15b		Freq.	Percent	Cum.
-----		-----	-----	-----
Attending her in hospital, childcare		1	100.00	100.00

## 12. What are the most important ways that your mother-in-law helped you in the last year?

c1d15b		Freq.	Percent	Cum.
-----		-----	-----	-----
cooking, caring for children, firewood		1	50.00	50.00
fetching firewood, child care		1	50.00	100.00

## 13. What are the most important things that your father gave you the last year?

c1a18b		Freq.	Percent	Cum.
-----		-----	-----	-----
dress, food, shoes		1	20.00	20.00
food		1	20.00	40.00
food, money, clothes		1	20.00	60.00
money		1	20.00	80.00
soap, cooking oil, money		1	20.00	100.00

## 14. What are the most important things that your father gave you the last year?

c1b18b		Freq.	Percent	Cum.
--------	--	-------	---------	------

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Food		1	12.50	12.50
food		1	12.50	25.00
food, clothes, money		1	12.50	37.50
food, money, clothes		1	12.50	50.00
food, relish		1	12.50	62.50
money, maize flour, relish		1	12.50	75.00
relish, groundnuts		1	12.50	87.50
relish, soap, children's clothes		1	12.50	100.00

15. What are the most important things that your father gave you the last year?  
NOTHING GIVEN

16. What are the most important things that your father gave you the last year?

c1d18b		Freq.	Percent	Cum.
clothes, radio		1	25.00	25.00
clothes, radio, shoes		1	25.00	50.00
eggs		1	25.00	75.00
food		1	25.00	100.00

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