

Doctoral Dissertation Research:

The market and the moral economy of Fulani pastoralists in northern Cameroon

Mark Moritz
University of California at Los Angeles

PROJECT DESCRIPTION

My project will investigate how the market economy affects pastoral systems in Africa and test the widely held view that pastoralists abandon traditional institutions of mutual aid when they are incorporated into the global market economy. Pastoralism is the only ecologically sustainable and an optimally efficient way to exploit the semi-arid and arid deserts and savannas of Africa. Independence and interdependence are complementary elements of durable African pastoral systems and both are maintained through institutions of mutual aid such as livestock loans. These loans support pastoralists in setting up independent households and herds while at the same time confirming the interdependence of pastoralists within the system. The transformation of pastoralism and the demise of the moral economy affect this system and the sustainability and livelihoods of pastoral people in arid and semi-arid Africa. The devastating effects of recent droughts in Africa in the early seventies and eighties have made this problem all the more pressing.

Pastoral institutions of mutual aid, livestock loans in particular, are considered to be redistributive mechanisms and means for socioeconomic mobility that allow pastoralists to recover from animal losses after droughts (Bradburd 1989; Bradburd 1990:189). However, investment in stock friendships, i.e. social capital, or the ability to call upon those relations in times of need, might be more important than the loan itself (Dyson-Hudson and Dyson-Hudson 1980:47). Despite a growing literature on pastoral societies (Fratkin 1997) and anecdotal references to pastoral institutions of mutual aid, there has been no systematic research on the actual impacts of livestock exchanges among pastoralists or their social networks of mutual aid.

Several scholars also argue that African pastoral economies are now being transformed, undermining traditional institutions of economic solidarity between pastoral households (Barfield 1993; Dyson-Hudson and Dyson-Hudson 1980; Ensminger 1992; Swift 1979). The primary change held responsible for this break down of mutual aid is the commoditization of livestock whereby pastoralists sell surplus animals instead of putting them into redistributive networks of animal loans, gifts, and other transfers (Swift 1977). Others, however, note that pastoralists have been involved in the market economy for a long time (Chang and Koster 1994; Kerven 1992) and that the pastoral moral economy of livestock loans and stock friendships remains an important institution that reduces the risks and uncertainties of livestock husbandry. During earlier research projects in the Far North Province of Cameroon (Moritz 1994a; Moritz 1995; Moritz 1998; Scholte, et al. 1996), I also observed that livestock loan institutions persist among Fulani pastoralists despite their longstanding incorporation in the market economy (Frechou 1966).

There are reasons to believe that pastoralists abandon institutions of mutual aid only when there are more effective ways to deal with risks and uncertainties. New institutional economic theory suggests that the safety-first principle is primary for pastoralists, but when there are other means to reduce uncertainty and risks, such as economic diversification, institutions of mutual aid will disappear (Ensminger 1992). This theory suggests that it is not commoditization

per se but increases in the price of livestock commodities, which raises the real costs of mutual aid and subsequently leads to abandonment of the moral economy (Ensminger 1992). In this project I will use the theoretical framework of new institutional economics, which combines an individual-actor-oriented perspective with attention to institutional constraints and considers the relationship between market forces, indigenous institutions, and economic performance.

The view that pastoralists abandon institutions of mutual aid when incorporated into the market economy is accompanied by great concern about the future viability of pastoralism (Roth 1996). A breakdown of the pastoral institutions of mutual aid and interdependence of households affects the reproduction of pastoral society, as many young herders will have trouble setting up an independent household herd without livestock loans. Combined with droughts, this may radically alter the distribution of livestock and severely compromise the viability of pastoral systems in Africa. Pastoral systems may well be on the verge of being compromised beyond repair, but without further study, no one can be sure. Critical to further study is an investigation of pastoral institutions of mutual aid and interdependence of households, since these have been long been regarded as keys to pastoralists' successful adaptation to drylands that are unsuitable for anything but pastoralism.

REVIEW OF THE LITERATURE & RESEARCH SIGNIFICANCE

In this section I focus on five closely related bodies of anthropological theory which address risk, moral economy and institutions of mutual aid, socioeconomic mobility, commoditization, and new institutional economics.

The risks to pastoral systems derive from pastoralists' reliance on livestock in arid and semi-arid rangelands. Rainfall variability is at the root of the problem in dryland ecosystems as it directly determines pasture productivity (Behnke Jr., et al. 1993), and drought can easily wipe out pastoral households. Pastoralists also can lose their livelihood overnight to the hazards of theft and epizootics. Whether the aim is risk aversion or reliability seeking (Roe, et al. 1998), pastoralists employ various strategies to minimize these threats and their likelihood through mobility, diversification, herd, and exchange (Cashdan 1990:8; Halstead and O'Shea 1989; Legge 1989). Many of the strategies for coping with environmental hazards are social and involve both individual action and cooperative social practices.

Among pastoralists this interdependence is institutionalized in economic transactions that create bonds between those who engage in them (Goldschmidt 1971:138). Bonds and strategies guided by the safety-first principle have been described as the moral economy or economy of affection (Hyden 1980; Scott 1976). By the moral economy I refer not to ideological principles (Scott 1976), but rather an economic calculus of risk management, which may yield different outcomes in changing contexts (Ensminger 1992: 175; Popkin, 1979 #246; Bollig, 1998 #605). Common moral economy institutions in pastoral societies are stock friendships or reciprocal loans of livestock, which offer both food aid in times of need as well as means for herd reconstitution (Almagor 1978; Cooper 1993; Dupire 1962a; Gulliver 1955; Spencer 1973).

The volatility of animal wealth and its consequences for socioeconomic mobility have been major concerns in the literature on pastoralism (Black 1972; Bradburd 1982; Dahl 1979; Sutter 1987). Recently, it has become clearer that pastoral societies are not as egalitarian as once thought, and drought and other factors producing great changes in herd size increase differentiation (Bradburd 1982; Bradburd 1990; Fratkin and Roth 1990; Fratkin and Roth 1996; Roth 1996). Bradburd, using Marxist theory, argues that upward socioeconomic mobility is *only*

possible through redistributive mechanisms which offer access to breeding animals, the pastoral means of production (Bradburd 1989; Bradburd 1990:189). In a slightly different vein, Dyson-Hudson & Dyson-Hudson argue that investing in social relations (e.g. stock friendships) creates greater socioeconomic mobility for pastoralists (Dyson-Hudson and Dyson-Hudson 1980:47). These investments in social relations can be considered a form of social capital, which can be called upon in times of need (Coleman 1990:304). Since the material transactions are only momentary episodes in a continuous social relationship, one could argue that it is the relationship, rather than the occasional loan, that creates social networks of mutual assistance (Hopen 1958; Sahlin 1972; Yan 1996). Both the intrinsic social value of stock friendships and the economic aspect of the livestock loans reaffirm the interdependence of pastoral households. However, it remains unclear whether these institutions and networks of mutual aid are effective, and how they produce their effects, since no writers have offered evidence for their theses.

Several scholars have argued that pastoralists abandon traditional institutions of mutual aid when they are incorporated into the global market economy (Barfield 1993; Dyson-Hudson and Dyson-Hudson 1980; Ensminger 1992; Swift 1979). The primary economic change held responsible for this breakdown is the selling of surplus animals instead of putting them into reciprocal and redistributive networks of animal loans, gifts, and other transfers (Barfield 1993:15; Dyson-Hudson and Dyson-Hudson 1980:47; Swift 1977). Swift and Dyson-Hudson & Dyson-Hudson use two lines of indirect evidence to support their argument: the exclusion of some pastoralists from mutual aid and the increase in livestock sales over time (Dyson-Hudson and Dyson-Hudson 1980; Swift 1979). However, the *sloughing off* of poorer households predates commoditization and thus does not constitute sufficient evidence (Barth 1961; Bovin 1990; Simons 1995). In addition, Bonfiglioli argues that droughts may temporarily suppress systems of mutual aid because there are not enough animals to go around (Bonfiglioli 1985:32). Increases in livestock sales might also be drought-induced and temporary as pastoralists are forced to sell animals to supplement their diet by buying cereals (Watts 1987). Thus the confounding effects of drought on institutions of mutual aid may be confused with commoditization (Amanor 1995:374). There are several other reasons to suspect that market involvement need not lead to a disappearance of mutual aid institutions. First, in most of rural sub-Saharan Africa, keeping livestock remains the most secure and profitable investment for pastoralists as well as non-pastoralists (Bonfiglioli 1990; McCabe 1994). Furthermore, despite increasing commoditization, animal sharing mechanisms among pastoralists seem to persist in the absence of other means of minimizing risk (Scott and Gormley 1980:103). Finally, I expect that pastoralists only abandon institutions of mutual aid when there are more effective ways to deal with the risks and uncertainties of pastoralism.

New institutional economics provides an alternative explanation of the demise of the pastoral moral economy (Ensminger 1992; North 1990). This theoretical framework combines an individual-actor-oriented perspective with attention to institutional constraints and specifically addresses the relationship between market forces (e.g. prices, transaction costs), indigenous institutions (e.g. ideology), and economic performance (e.g. socioeconomic mobility). Ensminger, who writes extensively on market transition, argues that economic diversification of households effectively reduces the risks and uncertainties of the pastoral economy in two ways. First, diversification leads to stability in wealth and lessens needs for insurance. Second, when livestock production makes up a smaller percentage of household income, risks associated with livestock husbandry decreases, which lessens the need for insurance (Ensminger 1992). Furthermore, new institutional economics suggests that increases in the relative prices of

livestock commodities, rather than commoditization itself, raise the costs of mutual aid (Ensminger 1992).

Amanor and Bollig (Amanor 1995; Bollig 1998) have pointed out that, despite a growing literature on pastoral societies (Fratkin 1997), there has been little systematic research of livestock exchanges among pastoralists or their social networks of mutual aid. Bollig is the sole exception, having documented exchanges among 37 pastoral Pokot households in Kenya (Bollig 1998). His study, however, does not address issues of commoditization since the Pokot are relatively 'pure' pastoralists who live in a remote area where markets are not as institutionalized as in other areas of Africa (Bollig 1998:154-155; Kerven, 1992 #187). Neither does his study address whether mutual aid contributes to herd reconstitution and socioeconomic mobility or when individual pastoralists are excluded from networks of mutual aid. Theories regarding pastoral moral economies thus remain to be tested.

Among pastoral Fulani in West and Central Africa the mutual aid institution called *nanga na`i* or *habbanae*, is one in which the loaned cow must be returned to the lender after it has calved three times (Bonfiglioli 1985; Bovin 1990; Dupire 1962a; Scott and Gormley 1980; Stenning 1959). The receiver of the loan keeps the calves and milk and must reciprocate at a later date with a loan called *hokkorde* (Dupire 1962a). These loans furnish important support to young herders who are starting out and to impoverished herders who are rebuilding after major losses. Livestock loans may range from 2 to 11 animals for young households (Dupire 1962a) and constitute up to one third of their herds (Bonfiglioli 1988:179). Livestock loans reinforce kinship ties and create friendship ties, although most loans are made within the lineage (Bonfiglioli 1988:181). Thus they produce wide networks of mutual aid that cross national and ethnic boundaries. The *nanga na`i* exchanges are usually explained by the Fulani as moral acts, expressions of basic values held by herders, serving as the social cement of Fulani society (Scott & Gormley 1980:101; Bonfiglioli, 1988 #38). Fulani pastoralists have been incorporated in the market economy for more than seventy years (Dupire 1962b; Frechou 1966; Kerven 1992), increasingly so in the last decades (Roitman 1996). Nevertheless institutions of mutual aid seem to persist (Scott and Gormley 1980), but it is unclear to what extent. While, the mores of *nanga na`i* and *habbanae* have been well described (Bonfiglioli 1985; Bovin 1990; Dupire 1962a; Scott and Gormley 1980; Stenning 1959), there is no systematic data on these livestock loans and networks of mutual aid. Furthermore, it is unclear how economic changes have affected the moral values of institutions as *nanga na`i* and what the social and psychological costs are for Fulani pastoralists (Hutchinson 1996).

CONTRIBUTIONS

The proposed study will contribute to several areas of research including pastoral studies, new institutional economics, social relations, and Fulani ethnography. More broadly, my study will contribute to understanding how the market economy affects social relations. Furthermore, I expect to be able to offer significant new information about the effect of livestock loans and social networks on socioeconomic mobility. Greater understanding of the effectiveness of pastoral systems of mutual aid and the impact of commoditization is vital for pastoral development programs. Restocking impoverished pastoralists, the latest approach in pastoral development, is based on the assumption that traditional institutions of mutual aid are effective for herd reconstitution. However, it is not yet clear whether, how, and for *whom* these institutions are effective.

OBJECTIVES

My project will test the impact of pastoral institutions of mutual aid and commoditization on the domestic economy and consider whether mutual aid institutions are in decline. I also will investigate why certain pastoralists are excluded from networks of mutual aid and how Fulani pastoralists experience the economic changes that are taking place. A set of specific objectives will be pursued to accomplish these goals.

- The first objective is to test whether the redistribution of breeding animals, (e.g. the pastoral means of reproduction), enhances socioeconomic mobility. I expect that the more livestock loans pastoral households have received, the greater has been their upward socioeconomic mobility.
- The second objective is to test whether investment in social relations (i.e. social capital) creates greater socioeconomic mobility. I expect that the greater and stronger pastoralists' ego-centered social networks are, the greater is their upward socioeconomic mobility.
- The third objective is to test the common view that commoditization causes pastoralists to abandon traditional institutions of mutual aid, and sell rather than loan livestock.
- The fourth objective is to test whether increases in commodity prices affect the pastoral moral economy and lead to a decrease in the number of livestock loans that young pastoralists receive when they set up their independent household herd.
- The fifth objective is to test whether economic diversification decreases a household's need for insurance and subsequently leads to a decrease in the number of its livestock loans and stock friendships.
- The sixth objective is to investigate whether pastoralists whose ability to reciprocate livestock loans is low due to poverty, poor herding skills, or other factors, are excluded from networks of mutual aid.
- The seventh objective is to investigate how pastoralists think about the socioeconomic changes that are taking place and whether someone's involvement in the market economy affects how they feel and think about these changes.

VARIABLES

Livestock loans refers to the animals that are currently loaned (or borrowed), while *stock friendship* refers to the social relations between borrowers and lenders of animals. A pastoralist may thus have more stock friendships than livestock loans. *Size and strength of an ego-centered network* refers to the number, types, and strength of social ties a pastoralist has, including kinship ties. Upward *socioeconomic mobility* will be measured by the increase in herd size from the starting herd to current herd size, and as upward movement in a local Fulani classification of wealth strata. *Starting herd* refers to the herd at the time when young families set up their independent household and herd. *Commodity prices* refer to the relative prices of livestock to millet on local markets. I will use data from the agricultural and veterinary services to calculate the relative livestock prices over the last 30 years. And I will employ an operational definition of *economic diversification* that comprises monetary and in-kind income from sales of livestock and livestock products, and other economic activities including wage labor, trade, and agricultural activities.

PRELIMINARY STUDIES

In 1993 and 1994, I conducted ecological studies with about 250 nomadic and sedentary pastoralists in the Far North Province for the CEDC and the Waza Logone Project in Maroua

(Moritz 1994a; Moritz 1994b). In addition, I collected data on the political marginalization of nomadic pastoralists for my MA thesis (Moritz 1995). In 1996, I investigated the sociopolitical relations between nomadic pastoralists and sedentary traditional authorities, again for the Waza Logone Project (Moritz 1998). Through these research projects and training at the Department of African Linguistics at Leiden University, I have developed basic skills in Fulfulde, which I plan to consolidate during the first months of my research. I have also many contacts with young educated Fulani from among whom I plan to hire research assistants.

RESEARCH PLAN

In a cross-sectional study of nomadic and sedentary Fulani pastoralists in the Far North Province of Cameroon, I will investigate the impact of livestock loans and social networks on pastoralists' socioeconomic mobility and the impact of commoditization on pastoral institutions of mutual aid. During an 18-month period I will collect quantitative and qualitative data on pastoralists' involvement in the market, economic diversification, livestock wealth and inheritance, social networks, stock friendships and livestock loans.

RESEARCH SITE

There are several reasons why the Far North Province of Cameroon is well suited for this study of the effects of commoditization on institutions of mutual aid. First, it is situated in the semi-arid Sudan-Sahelian zone of West Africa and has a large and diverse Fulani population consisting of both nomadic and sedentary pastoralists who vary in their involvement in the market. Second, northern Cameroon is a major center for the production and trade of livestock (Frechou 1966; Njoya, et al. 1997; Roitman 1996). Third, despite their longstanding incorporation in the market economy, I have observed that Fulani continue to engage in networks of mutual aid (i.e. livestock loans). Fourth, these institutions of mutual aid in northern Cameroon have been less affected by the confounding effects of drought, which have affected other African countries (Beauvilain 1995; Bonfiglioli 1985:32; Dahl and Hjort 1976:70). The fifth reason is practical: through earlier research projects (1993, 1994, and 1996), I have many contacts with the pastoral Fulani, authorities, and scholars in the Far North Province which will facilitate my research (Moritz 1994a; Moritz 1995; Moritz 1998; Scholte, et al. 1996).

POPULATION AND SAMPLE

My population consists of nomadic and sedentary Fulani pastoralists in the Far North Province of Cameroon. The Far North Province is about 37500 km² and divided into several veterinary districts; I have selected the veterinary district of Mindif because it has the largest pastoral population. There are about 5000 pastoralists in Mindif of whom one-third are nomadic and two-thirds are more or less sedentary (Moritz 1994a). The survey population includes Fulani households who have vaccinated their cattle and are listed in the annual records of the veterinary services. The veterinary records, which are quite reliable, contain information on herd size and are arranged by village or nomadic camp, and name of the herd manager (Moritz 1994a). I will arrange the sampling list according to distance to the closest livestock market (Levine 1999). Within each village and nomadic camp, I will stratify the list according to herd size. I will use systematic sampling methods with a random start to select 100 pastoral Fulani households (Babbie 1990). The sample will be scrutinized for periodicity and compared to the population parameters. From this sample I will randomly sample twenty households for extensive budget studies. In addition, I will draw a second sample of 100 pastoralists from which I will take

alternates in case of non-response (Bernard 1994). In order to control for the confounding variable of ethnicity I will remove pastoralists from other ethnic groups from the sampling frame.

INSTRUMENTATION AND DATA COLLECTION

Ethnographic methods. I will use participant observation and in-depth interviews to study Fulani pastoralists' perceptions of risk, institutions of mutual aid, and the economic and cultural changes in their society. Furthermore, I will collect data on processes by which pastoralists are excluded from mutual aid, how commoditization affects pastoral households, families, and social relations in order to explore the causal relations between the variables: social network, livestock loans, commoditization, and socioeconomic mobility. In addition, participant observation and in-depth interviews will be used to develop structured interviews, checks on validity and reliability of composite measurements, and interpretation of quantitative analyses (Johnson 1998).

Hypotheticals. I will use hypotheticals to gauge how Fulani pastoralists think about socioeconomic changes. Informants will be asked to finish open-ended stories and more constrained stories that present them with moral and other dilemmas. In addition, they will be asked questions, such as: What would you do in such a situation? What would be the right thing to do in such a situation? What would other people think of this person? I will also use this method to assess whether someone's involvement in the market economy affects how they feel and think about the changes that are taking place.

SOCIAL RELATIONS

Free-recall listings. I will use free-recall listings to generate Fulani categories of social relations from an independent sample of 10 informants. Questions will be asked in a variety of formats to elicit an exhaustive list and informants will be probed to capture aspects as well as dimensions of strength of each type of social relation, including kinship relations (Weller 1998). An important dimension is the perceived ability to call upon ties for support in times of need (Coleman 1990).

Rank ordering. I will use methods of rank ordering for items generated by free-recall listings to determine which social relations are considered to be weak versus strong i.e. more important mutual aid relations (Weller and Romney 1988). The 10 informants will be asked to explain their ranking.

Collecting social network data. All informants will be asked to list the names of people with whom they have social relations of the types that were generated by free-recall listing. After the unlimited listing, informants will be asked to rank the names of the ten most important people. This ranking will allow for comparisons of social relations and their characteristics across informants. The combination of stratified sampling and ego-centered networks should be generalizable to the population at large (Marsden 1990; Wasserman and Faust 1994). In additional interviews, I will collect data concerning characteristics of the households of each alter.

HOUSEHOLDS

Structured interviews. I will survey all 100 households on household demography, including age, sex, kinship ties, and education of its members, household sources of income (monetary and in-kind), and herd size and ownership.

Semi-structured interviews. I will use semi-structured as well as unstructured interviews to collect data on family background, inheritance, herd and household history, droughts, migration patterns, livestock loans, stock friendships, and kinship relations of all 100 households.

Pile sorts and wealth ranking. I will use Grandin's wealth ranking method, which is a slightly modified pile sort method, to get the ranking of all 100 households in the local classification of wealth strata (Grandin 1988). A comparison of the informant's and his parents' relative rank will be used as an additional measure for socioeconomic mobility.

Household budgets. I will collect longitudinal data from 20 households on income and expenditures, including consumption of household production of livestock and agricultural products (Aritho 1995). In addition, I will collect data on exchanges with other households, since budget studies of Fulani households in Niger showed a large circulation of cash between households in the form of loans and reciprocal gifts (White 1984).

HERDS

Constructing herd genealogies. Since pastoralists are generally hesitant to discuss questions regarding ownership of livestock, I will use a variety of methods to collect herd data. One method that has generated detailed and accurate data on pastoralists' herds is the reconstruction of herd genealogies, in which the life history of each animal in a herd is collected (Bonfiglioli 1988; Dupire 1962a:121-123; Goldschmidt 1969). This method will generate information on the size of the starting herd, fertility, mortality, herd growth, the origins of animals, ownership rights, and the number of loan animals within a herd. I will also collect data on demographic characteristics of cattle herds in order to construct a model of herd growth that reflects the ecological conditions of the Far North Province (Dahl and Hjort 1976).

Market price survey. I will collect market prices of livestock and agricultural products on the weekly markets in the region. Furthermore, I will collect data on the prices and number of sales on these same markets over the last twenty to thirty years. This information can be found in the archival records of the veterinary and agricultural services in the district (Moritz 1994a). I will use Global Position Systems (GPS) to determine the distance of nomadic campsites and villages to the local livestock market.

DATA ANALYSIS

There are four main topics that I will use my data to investigate: socioeconomic mobility, disappearance of mutual aid institutions, exclusion of individual pastoralists, and how Fulani experience the socioeconomic changes. I will start with an exploratory qualitative data analysis, followed by simple statistical tests of my hypotheses and other variables that appear to correlate. Subsequently, I will employ more complex statistics to build and analyze explanatory models.

First, I will examine the data to find out whether the number of livestock loans that households have received or the size and strength of social networks are correlated with upward mobility in wealth strata or increase in herd size over the years (objectives 1 and 2). I will control for the confounding variable of herd- and household size and life cycle (Bonfiglioli 1988; Stenning 1971) and for time elapsed since inheritance (Bradburd 1980), when I analyze upward socioeconomic mobility as the increase in herd size from the starting herd to current herd size. In addition, I will use Dahl & Hjort's (1976) mathematical model of herd growth to calculate the expected increase in herd size for each household and compare that with the actual increase in herd size. Dahl & Hjort's algorithm allows me to model herd growth over time for each individual starting herd using three parameters: calving rates, death rates, and calving periods

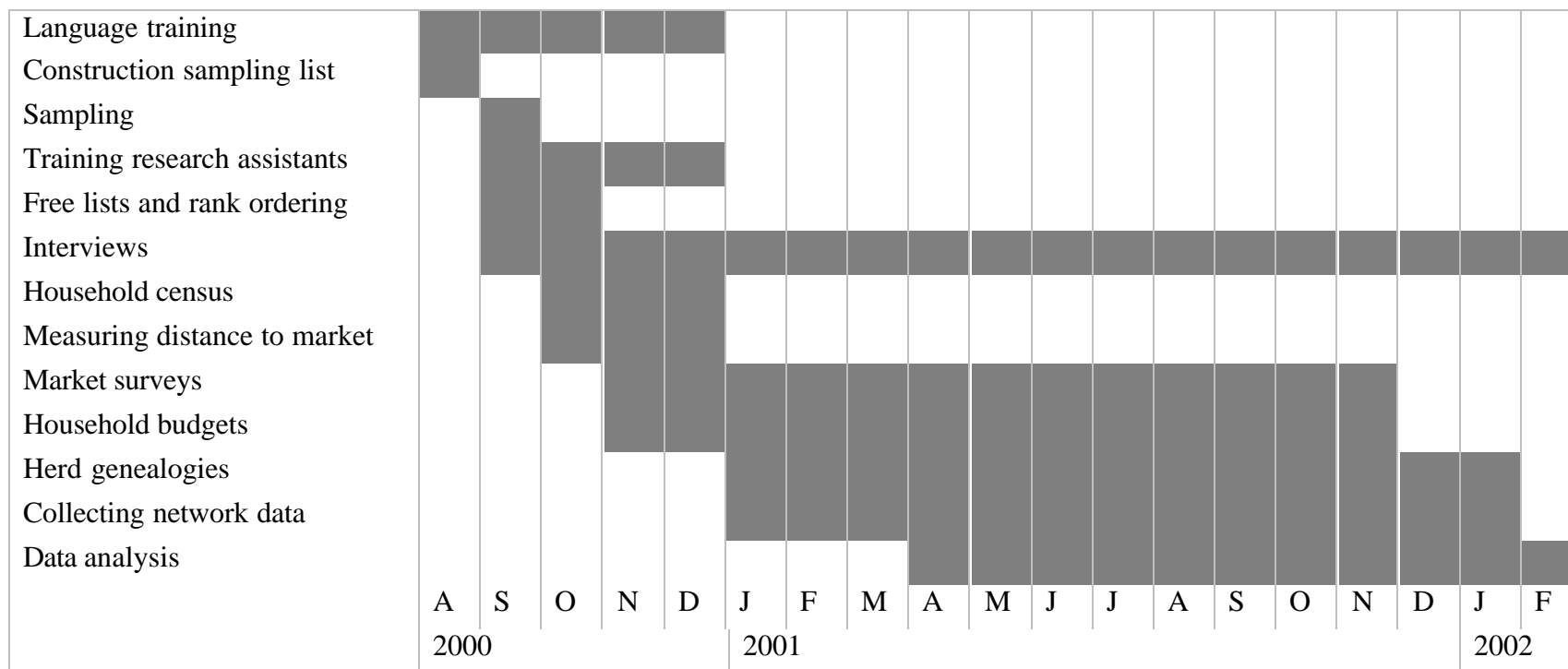
(Dahl and Hjort 1976:49). The comparison of predicted and actual herd size allows me to assess the relative advantage of livestock loans. A score for the variable size and strength of the limited ego-centered network will be calculated by multiplying the number of names each informant gave with a number assigned to each type of social relation. The types of social relations that were ranked as strong ties will be weighed more than weak ties. In addition, I will analyze the data for how other variables, such as herd and household size or socioeconomic status affect socioeconomic mobility.

Secondly, I will test whether the number of livestock sales, commodity prices, and/or economic diversification are correlated with the number of livestock loans that pastoralists have received (objectives 3, 4, and 5). With regard to the composite variable *economic diversification*, I will test the effect of each individual component on the dependent variables using step-wise regression analysis to determine whether, for example, the component *agriculture activities* is a better predictor separately (or in any other combination of variables). I will also analyze the data to see how distance to the market, herd and household size, and other variables that may appear relevant (such as political power) affect the number of loans that pastoralists receive. In addition, I will use ANOVA (Kruskal-Wallis) to compare nomadic and sedentary pastoralists, for example, to test whether nomadic pastoralists receive more livestock loans than sedentary pastoralists.

Thirdly, I will examine the data for factors that affect the exclusion of individual pastoralists from networks of mutual aid, in particular variables such as herd and household size, socioeconomic position, and reputation as a herder and moral person (objective 6). Finally I will analyze how Fulani experience and think about the changes in the economy and how their socioeconomic position affects their stance (objective 7) using the method of grounded theory (Bernard and Ryan 1998; Strauss and Corbin 1990) that I will operationalize using ATLAS.ti qualitative data analysis software.

I will use Genplotter genealogy software to enter and analyze livestock genealogies, SYSTAT statistical software to test the statistical hypotheses, and ANTHROPAC (Borgatti 1996) to conduct exploratory multivariate analysis of the cross-sectional data to evaluate the effect of other variables. Furthermore, all hypotheses will be analyzed for both absolute and relative data on livestock loans. Data from participant observation and in-depth interviews will be used for interpretation of quantitative analyses and understanding of the causal processes at hand (de Munck 1998; Johnson 1998).

RESEARCH SCHEDULE



Research funds are requested for the period from August 2000 till February 2002.

REFERENCES

- Almagor, Uri
1978 Pastoral partners: affinity and bond partnership among the Dassanetch of south-west Ethiopia. Manchester (UK): Manchester University Press.
- Amanor, Kojo Sebastian
1995 Dynamics of herd structures and herding strategies in West Africa: a study of market integration and ecological adaptation. *Africa* 65(3):351-394.
- Aritho, Lewis M.
1995 The effect of household income and seasonal price changes on household food expenditure patterns. Leiden (Netherlands): African Studies Centre.
- Babbie, Earl
1990 Survey research methods. Belmont (CA): Wadsworth.
- Barfield, Thomas J.
1993 The nomadic alternative. Englewood Cliffs (NJ): Prentice Hall.
- Barth, Fredrik
1961 Nomads of South Persia: the Basseri tribe of the Khamseh confederacy. Boston: Little, Brown and Company.
- Beauvilain, Alain
1995 Tableau de la pluviométrie dans les bassins du Tchad et de la Bénoué de la création des stations à décembre 1994. Volume 3. Tchad: Centre national d'appui à la recherche.
- Behnke Jr., Roy H., Ian Scoones, and Carol Kerven, eds.
1993 Range ecology at disequilibrium: new models of natural variability and pastoral adaptation in African Savannas. London: Overseas Development Institute.
- Bernard, H. Russel
1994 Research methods in anthropology: qualitative and quantitative approaches. Walnut Creek (CA): Altamira Press.
- Bernard, H. Russell, and Gery Ryan
1998 Text analysis: qualitative and quantitative methods. *In Handbook of methods in cultural anthropology*. H.R. Bernard, ed. Pp. 595-645. Walnut Creek (CA): Altamira Press.
- Black, Jacob
1972 Tyranny as a strategy for survival in an 'egalitarian' society: Luri facts versus an anthropological mystique. *Man* 7(4):614-634.
- Bollig, Michael
1998 Moral economy and self-interest: kinship, friendship, and exchange among the Pokot (N.W. Kenya). *In Kinship, networks, and exchange*. T. Schweizer and D.R. White, eds. Pp. 137-157. *Structural Analysis in the Social Sciences*. Cambridge (UK): Cambridge University Press.
- Bonfiglioli, Angelo Maliki
1988 Dudal: histoire de famille et histoire de troupeau chez un groupe de Wodaabe du Niger. Cambridge: Cambridge University Press & Éditions de la Maison des Sciences de l'Homme.
- Bonfiglioli, Angelo Maliki
1990 Pastoralisme, agro-pastoralisme et retour: itinéraires sahéliens. *Cahiers des Sciences Humaines* 26(1-2):255-266.
- Bonfiglioli, Maliki Angelo

- 1985 Evolution de la propriété animale chez les WoDaaBe du Niger. *Journal des Africanistes* 55(1-2):29-38.
- Borgatti, Stephen P.
1996 ANTHROPAC. Natick (MA): Analytic Technologies.
- Bovin, Mette
1990 Nomads of the drought: Fulbe and Wodaabe nomads between power and marginalization in the Sahel of Burkina Faso and Niger Republic. *In Adaptive strategies in African arid lands*. L. Manger and M. Bovin, eds. Pp. 29-57. Uppsala (Sweden): Scandinavian Institute of African Studies.
- Bradburd, Daniel A.
1980 Never give a shepherd an even break: class and labor among the Komachi. *American Ethnologist* 7(4):603-620.
- Bradburd, Daniel A.
1982 Volatility of animal wealth among southwest Asian pastoralists. *Human Ecology* 10(1):85-106.
- Bradburd, Daniel A.
1989 Producing their fates: why poor Basseri settled but poor Komachi and Yomut did not. *American Ethnologist* 16(3):502-517.
- Bradburd, Daniel A.
1990 Ambiguous relations: kin, class, and conflict among Komachi pastoralists. Washington (D.C.): Smithsonian Institution Press.
- Cashdan, Elizabeth, ed.
1990 Risk and uncertainty in tribal and peasant economies. Boulder (CO): Westview Press.
- Chang, Claudia, and Harold A. Koster, eds.
1994 Pastoralists at the periphery: herders in a capitalist world. Tucson (AZ): The University of Arizona Press.
- Coleman, James S.
1990 Foundations of social theory. Cambridge (MA): Belknap Press of Harvard University Press.
- Cooper, Louise
1993 Patterns of mutual assistance in the Mongolian pastoral economy. *Nomadic Peoples* (33):153-162.
- Dahl, Gudrun
1979 Ecology and equality: the Boran case. *In Pastoral production and society*. Pp. 261-282. Cambridge: Cambridge University Press & Editions de la Maison des Sciences de l'Homme.
- Dahl, Gudrun, and Anders Hjort
1976 Having herds: pastoral herd growth and household economy. Stockholm (Sweden): Department of Social Anthropology, University of Stockholm.
- de Munck, Victor C.
1998 Participant observation: a thick explanation of conflict in a Sri Lankan village. *In Using methods in the field: a practical introduction and casebook*. V.C. de Munck and E.J. Sobo, eds. Pp. 39-54. Walnut Creek (CA): Altamira Press.
- Dupire, Marguerite

- 1962a Peuls nomades: Étude descriptive des Wodaabe du Sahel nigérien. Paris: Institut d'Ethnologie.
- Dupire, Marguerite
- 1962b Trade and markets in the economy of the nomadic Fulani of Niger (Bororo). *In* Markets in Africa. P. Bohannan and G. Dalton, eds. Pp. 335-364. Chicago: Northwestern University Press.
- Dyson-Hudson, N., and R. Dyson-Hudson
- 1980 Nomadic pastoralism. *Annual Review of Anthropology* (9):15-61.
- Ensminger, Jean
- 1992 Making a market: the institutional transformation of an African society. Cambridge: Cambridge University Press.
- Fratkin, Elliot
- 1997 Pastoralism: governance and development issues. *Annual Review of Anthropology* 26:235-261.
- Fratkin, Elliot, and Eric Abella Roth
- 1990 Drought and economic differentiation among Ariaal pastoralists of Kenya. *Human Ecology* 18(4):385-402.
- Fratkin, Elliot, and Eric Abella Roth
- 1996 Who survives drought? Measuring winners and losers among the Ariaal Rendille pastoralists of Kenya. *In* Case studies in human ecology. D.G. Bates and S.H. Lees, eds. Pp. 159-173. New York: Plenum Press.
- Frechou, H
- 1966 L'élevage et le commerce du bétail dans le nord du Cameroun. Paris: ORSTROM.
- Goldschmidt, Walter
- 1969 Kambuya's cattle: the legacy of an African herdsman. Berkeley and Los Angeles: University of California Press.
- Goldschmidt, Walter
- 1971 Independence as an element in pastoral social systems. *Anthropological Quarterly* 44(3):132-142.
- Grandin, Barbara E.
- 1988 Wealth ranking in smallholder communities: a field manual. Rugby (UK): Intermediate Technology Publications.
- Gulliver, P.H.
- 1955 The family herds: a study of two pastoral tribes in East Africa the Jie and Turkana. London: Routledge & Kegan Paul Ltd.
- Halstead, Paul , and John O'Shea, eds.
- 1989 Bad year economics: cultural responses to risk and uncertainty. Cambridge (UK): Cambridge University Press.
- Hopen, C. Edward
- 1958 The pastoral Fulbe family in Gwandu. London: Oxford University Press.
- Hutchinson, Sharon E.
- 1996 Nuer dilemmas: coping with money, war, and the state. Berkeley: University of California Press.
- Hyden, G.
- 1980 Beyond Ujamaa in Tanzania: underdevelopment and an uncaptured peasantry. London: Heinemann.

- Johnson, Jeffrey C.
 1998 Research design and research strategies. *In Handbook of methods in cultural anthropology*. R.H. Bernard, ed. Pp. 131-171. Walnut Creek (CA): Altamira Press.
- Kerven, Carol
 1992 Customary Commerce: a historical reassessment of pastoral livestock marketing in Africa. Volume 15. London: Overseas Development Institute.
- Legge, Karen
 1989 Changing responses to drought among the Wodaabe of Niger. *In Bad year economics: cultural responses to risk and uncertainty*. P. Halstead and J. O'Shea, eds. Pp. 81-86. Cambridge (UK): Cambridge University Press.
- Levine, Nancy
 1999 Cattle and the Cash Economy: Responses to Change Among Tibetan Nomadic Pastoralists in Sichuan, China. *Human organization* 58:161-172.
- Marsden, Peter V.
 1990 Network data and measurement. *Annual Review of Sociology* 16:435-463.
- McCabe, J. Terrence
 1994 The failure to encapsulate: resistance to the penetration of capitalism by the Turkana of Kenya. *In Pastoralists at the periphery: herders in a capitalist world*. C. Chang and H.A. Koster, eds. Pp. 197-211. Tuscon (AZ): The University of Arizona Press.
- Moritz, Mark
 1994a A harde is a pasture where no grass grows or water infiltrates: pastoralists' perceptions of pastures in north Cameroon: Centre for Environmental Studies Leiden.
- Moritz, Mark
 1994b Yaake, yaayre wi`e to no yaayre: pastoralists' perceptions of and adaptation to rangeland degradation of the Logone floodplain, Far-North Cameroon: Waza Logone Project (UICN).
- Moritz, Mark
 1995 Minin jogi geeraa`de: A study of the marginalization of Mbororo'en in northern Cameroon. MA, University of Leiden.
- Moritz, Mark
 1998 The demise of the nomadic contract: Arrangements and rangelands under pressure in northern Cameroon. *Citizenship and issues of autochthony in postcolonial Africa: changing modalities of exclusion and inclusion*: Leiden (Netherlands).
- Njoya, A., et al.
 1997 Systèmes d'élevage et productivité des bovins en milieu paysan. *In Agricultures des savanes du Nord-Cameroun: vers un développement solidaire des savanes d'Afrique centrale*. L. Seiny Boukar, J.-F. Poulain, and G. Faure, eds. Pp. 109-121. Montpellier (France): CIRAD.
- North, Douglass C.
 1990 Institutions, institutional change and economic performance. Cambridge (UK): Cambridge University Press.
- Roe, Emery, Lynn Huntsinger, and Keith Labnow
 1998 High Reliability Pastoralism. *In Discussion Paper No. 3*. Berkeley (CA): Center for Sustainable Resource Development, University of California, Berkeley.
- Roitman, Janet L.

- 1996 Objects of the economy and the language of politics in northern Cameroon. Dissertation, University of Pennsylvania.
- Roth, Eric Abella
- 1996 Traditional pastoral strategies in a modern world: an example from northern Kenya. *Human Organization* 55(2):219-224.
- Sahlins, Marshall
- 1972 Stone age economics. London: Routledge.
- Scholte, Paul, Saidou Kari, and Mark Moritz
- 1996 The involvement of nomadic and transhumance pastoralists in the rehabilitation and management of the Logone flood plain, North Cameroon. IIED Drylands Programme Issues Paper (66):1-21.
- Scott, James S.
- 1976 The moral economy of the peasant: rebellion and subsistence in Southeast Asia. New Haven: Yale University Press.
- Scott, Michael F., and Brendan Gormley
- 1980 The animal of friendship (habbanaae): an indigenous model of Sahelian pastoral development in Niger. *In* Indigenous knowledge systems and development. D. Brokensha, D.M. Warren, and O. Werner, eds. Pp. 92-110. Lanham (MD): University Press of America.
- Simons, Anna
- 1995 Networks of dissolution: Somalia undone. Boulder (CO): Westview Press.
- Spencer, Paul
- 1973 Nomads in alliance: symbiosis and growth among the Rendille and Samburu of Kenya. London: Oxford University Press.
- Stenning, D J
- 1959 Savannah nomads: a study of the Wodaabe pastoral Fulani of Western Bornu Province Northern region, Nigeria. London: Oxford University Press.
- Stenning, D.J.
- 1971 Household viability among the pastoral Fulani. *In* The development cycle in domestic group. J. Goody, ed. Pp. 92-119. Cambridge: Cambridge University Press.
- Strauss, Anselm, and J. Corbin
- 1990 Basics of qualitative research: grounded theory procedures and techniques. Thousand Oaks (CA): Sage publications.
- Sutter, John W.
- 1987 Cattle and inequality: herd size differences and pastoral production among the Fulani of northeastern Senegal. *Africa* 57(2):196-218.
- Swift, Jeremy
- 1977 Sahelian pastoralists: underdevelopment, desertification, and famine. *Annual Review of Anthropology* 6:457-478.
- Swift, Jeremy
- 1979 The development of livestock trading in nomad pastoral economy. *In* Pastoral production and society. ed. Pp. 447-466. Cambridge: Cambridge University Press.
- Wasserman, Stanley, and Katherine Faust
- 1994 Social network analysis: methods and applications. Cambridge (UK): Cambridge University Press.
- Watts, Michael

- 1987 Drought, environment and food security: some reflections on peasants, pastoralists and commodization in dryland West Africa. *In Drought and hunger in Africa: denying famine a future*. M.H. Glantz, ed. Pp. 171-211. Cambridge: Cambridge University Press.
- Weller, Susan C.
- 1998 Structured interviewing and questionnaire construction. *In Handbook of methods in cultural anthropology*. H.R. Bernard, ed. Pp. 363-407. Walnut Creek (CA): Altamira Press.
- Weller, Susan C., and A. Kimball Romney
- 1988 Systematic data collection. Newbury Park (CA): Sage.
- White, Cynthia
- 1984 Herd constitution: the role of credit among Wodaabe herders in central Niger. ODI pastoral development network paper 18d:1-14.
- Yan, Yunxiang
- 1996 The flow of gifts: reciprocity and social networks in a Chinese village. Stanford (CA): Stanford University Press.