

**DISCOVERING NORMALITY IN HEALTH  
AND THE REPRODUCTIVE BODY**

*Proceedings of a Workshop Held at the Program of African Studies  
Northwestern University, March 9-10, 2001*

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## CONTENTS

<i>Preface</i>	v
Introduction	1-5
1 The Second Question Asked Is, “How Much Does the Baby Weigh?” So, What Is “Normal” Birth Weight? <i>Frederick Makumbi and Bernard Guyer</i>	7-17
2 Challenging Normality: Dutch Obstetric Science <i>Raymond DeVries</i>	19-49
3 Is Rickets a Normal Condition? The Construction of Normality in the Reproductive Body in Early and Late Twentieth Century America <i>Caroline Bledsoe</i>	51-62
4 Pregnancy that Does Not Stay: Perception of Fertility and Infertility among Rural Edo Women in Nigeria <i>Friday Okonofua</i>	63-69
5 Postmodern Contraception: The Rise of Traditional Methods of Birth Control among Upper Class Women in India <i>Alaka Basu</i>	71-81
6 What Constitutes a Valid Measure of Reproductive Morbidity?: Clinical Tests vs. Women’s Perceptions <i>El-Daw A. Suliman</i>	83-89
7 Badu Guan: A Celebration of High Fertility among the Akan People of Southern Ghana <i>Samuel Enos</i>	91-94
8 Debating the Impact of Female Excision on Childbirth in Colonial Kenya <i>Lynn Thomas</i>	95-106
9 Prenatal Care as Reproductive Risk in Mozambique <i>Rachel Chapman</i>	107-124
10 Normality and the “Disease of Civilization:” Eclampsia in the Congo and the Southern United States <i>Nancy Rose Hunt</i>	125-135

11	How Can My Younger Sister Be Older than Me?: The Splintering of Old Age in Southeastern Botswana <i>Julie Livingston</i>	137-147
12	Globalizing the Facts of Life <i>Stacey Leigh Pigg</i>	149-161
	<i>Appendices</i>	163-178
	1. Workshop Program	
	2. Session on Age, Aging, and Malnutrition	
	(a) Discussant's Remarks: Medical Normality and Human Biological Variations <i>William R. Leonard</i>	
	(b) Notes on Discussion <i>Recorded by Christopher Hayden</i>	
	3. Language, Culture, Debate over the Regulation of Fertility and Sexuality <i>Recorded by Maureen Farrell</i>	
	4. Language, Culture, and Contestation in Fertility: Discussant's Comments <i>Kearsley A. Stewart</i>	
	5. Puzzles in Views of Fertility, Sexuality, and Reproductive Morbidity <i>Neena Schwartz</i>	
	Contributors' Contact List	179-181

## PREFACE

This collection of papers contains most of the papers that were delivered at the workshop on “Normality in Health and the Reproductive Body” at Northwestern in March 2001. The seminar was used to discuss individual research projects around convergences of thought on the theme at hand. In their present state, therefore, the papers represent works in progress. Most represented new and tentative thinking by authors; others reflected new developments of already-considered works, and most of the participants intend to research and develop their ideas further. Nonetheless, we agreed that the time was ripe to produce the papers, to enable the authors and the organizers to get feedback from a wider audience, and possibly (in some cases) invite collaboration with interested scholars.

We appreciate the enormous support and contribution provided by the staff of the Program of African Studies and its Editorial Committee in producing this working paper. In particular, we wish to thank Jane I. Guyer and Akbar Virmani for their valuable support and counsel throughout this project, David L. Schoenbrun for reading the entire manuscript, Mary Ebeling for her editorial expertise, and Emily Wonson, who orchestrated the logistics for the original conference. Needless to say, any lapses in documentation and the final presentation of this volume are the responsibility of the editor and contributors.

*Caroline Bledsoe*

## INTRODUCTION

The papers and discussions included in this collection are the product of a workshop, “Discovering Normality in Health and the Reproductive Body,” held in March, 2001 at Northwestern University's Program of African Studies. The idea for the workshop stemmed from a history of collaborations among Caroline Bledsoe, Jane Guyer, and Kuate Defo Barthélemy on topics of fertility, health, and research methodology. The workshop itself grew out of a commitment to continue that conversation and to expand it to a wider range of people and disciplines. The disciplines represented were wide-ranging indeed. They included sociocultural anthropology, biological anthropology, history, reproductive biology, history of medicine, public health, and obstetric medicine. The focus of the workshop was Africa, but we also included important comparative cases on South Asia and the Netherlands. In addition we have included those of the discussants' excellent and provocative comments that were available, some of the rapporteurs' notes, and a full list of the participants.

\* \* \*

The realization that what is “normal” (or commonsensical) is embedded in particular times, places, and social arenas has been a perpetual theme in the social sciences. Less considered have been views of normality in health. In particular, the workshop sought to ask how we create, remember, and forget ideas about normality, particularly that of the childbearing female body.

Human biological variation is probably greater than is usually acknowledged. Yet, variation of either genetic or environmental origin seems to matter increasingly less because of the lifetime medical “fixes” at our disposal. An increasingly sophisticated set of medical “fixes”—a lifetime package of preventive and proactive measures such as surgery, vitamins, immunizations, x-ray, and transfusion technologies, not to mention antibiotics, better nutrition, and (of course) lower fertility—all invisibly shape the health status of our population and make it very different from those experiences in other times and places. This battery of innovations made possible by our wealth and knowledge, supports the body on a scale that was unimaginable a hundred years ago. Furthermore, forces of selection as diverse as midwives, physicians, neighbors, the popular media route people and their projected ailments into different pathways of protection and risk. Such forces almost invisibly shape the health of a population, with the result that conditions that have weighed so heavily in other times and places may be invisible to us as we construct our cultural generalizations about a human physical baseline. The effects of these shifts may easily become sedimented into our common sense, and in the case of reproduction, we may come to see a woman's childbearing body as a constant, regardless of parity, pain, injury, or disease.

If ideas about the “baseline” shift as medical and public health measures alter the human constitution, this raises some difficult questions. What cultural/medical assumptions do our ideas about health embody? How do we define abnormal/unhealthy: as any notable deviation from the mean (local? international?) or those conditions that contribute to decline or pathology? Do ideas about the “baseline” shift as new technologies or medical and public health measures alter the human constitution? If so, what does it mean to claim to have detected the effects of some particular factor on the body or its health? How do our typologies, indices, and formulas arise and become

global standards? How are changes in representations of the body and reproduction reflected in medical textbooks and instruments of standardization, such as the United States Agency for International Development-sponsored Demographic and Health Surveys (DHS)<sup>1</sup>, which establish, measure, and contextualize normality?

The DHS is in fact one of the most striking instances of our tendency to inscribe our beliefs and desires about reproduction into a research instrument. It is an enormous project, now having covered thousands of respondents in dozens of countries, largely those in developing regions, and in some countries up to three times. It is made up of two separate sets of questionnaire schedules and training modules for countries with high versus low levels of the contraceptive methods that are widely termed “modern”: e.g., Depo Provera, oral contraceptive pills, condoms, and Norplant (Macro International, Inc. 1997; 2000), versus the use of “traditional” or no contraceptives. This split embodies the Western assumption that the use of what are called modern contraceptives implies desires for low fertility, and the use of traditional or no contraceptives as desires for low fertility. (Bledsoe 1996; Bledsoe, Banja, and Hill 1998 for further discussion of this point.) Many of the basic questions overlap in these two schedules, and some excellent published analyses have drawn data resulting from the two sources for comparative purposes. Yet, it is surely a fact of some significance that the structure of the largest demographic enterprise in history hinges on one particular variable and this one in particular. Furthermore, hanging the enterprise on this distinction leaves little doubt about the agenda that spawned the whole survey project: a unilinear evolution from high to low fertility. See also Desai and Alva (2000) for observations about analyses that over-dichotomize developed and developing countries.

Basic to the question of normality is the possibility that the data that might be used to trace changing beliefs about bodily normality: records of colonial hospitals or wartime food supplements for mothers, demographic surveys (including the DHS), advertisements from popular health magazines, obstetrics texts, military medical records, etc. Is it possible to use sources like these to work backwards in time or across contemporary comparative cases, to peel back layers of common sense about health normality?

## **THE PAPERS**

Ideas about normality are intimately linked to statistical measures, and yet even the most taken-for-granted instruments of standardization are vulnerable to bias, as Kuate Defo Barthélemy noted in his preliminary remarks. This point is furthered by Frederick Makumbi and Bernard Guyer, who examine differences in growth and development among children in different nutritional regimes. The authors show that certain conventional standard distribution curves are often incorporated seamlessly into the toolkits of international health analyses. Different distribution curves appear to describe birth weights in different populations, a finding that implies that the universally accepted convention that establishes 2500 grams or less as a low birth weight may be inappropriate in certain populations. Higher rates of low birth weight in some developing countries may be the result of the entire curve being shifted to the left, rather than of a uniquely high-risk population. If this conclusion is correct, the practical implications of the paper are substantial.<sup>2</sup> They imply that the

<sup>1</sup> In 1997, the Demographic Health Surveys program name was changed to MEASURE DHS+.

<sup>2</sup> William Leonard (personal communication) speculates that the more “spread out” distribution of birth weight seen in industrialized nations, compared to the African distribution, may reflect greater use of medical technologies that allow more children at both ends of the size distribution to survive. Further, the weak link between birth weight and mortality for children below age one may reflect more non-birth-weight related causes of infant mortality in Africa than in the industrialized world. However, he cautions that there may be a “threshold effect”—that is, overall rates of infant mortality that are much higher in Africa, compared to the industrialized world—such that the relative effect of lower birth weights alone is less than in the industrialized world. Therefore if non-birth weight sources of infant mortality (for example, AIDS) are substantially reduced in Africa, children above and below the 2500 gram birth weight cut-off may show significant differences in mortality rates. If the threshold then showed no significant differences in survivorship, the evidence might be more compelling that relatively healthy African newborns follow a different distribution of birth weights than those

screening currently used to identify specific risk groups may serve little purpose; interventions may need to be universal in the population, for example, in the management of malaria in pregnancy or in the general improvement of nutritional status.

Closely related to the traps that are posed by statistical convention are those created by acts of prevention and triage in medicine or in demography: “selection.” For industrialized countries, one of the best examples is the question of where births occur: whether at home or in the hospital. Raymond DeVries' paper closely scrutinizes the Dutch obstetrics program, which, with its high rates of home birth, is often held out in international circles as a model. The paper reveals an intricate series of decision points in the process of identifying and managing potential problems. As DeVries shows, pregnancies can take two major pathways. One, for low risk births, tends to lead to midwife births in the home. The other, for births perceived to be at greater risk, leads to more medical supervision and to hospital births that are handled by gynecologists. Since cases are “selected,” shuttled preemptively into pathways of low or high risk, the great majority of home births results in safe outcomes. But since the process works so invisibly—“success” means that nothing happens; a birth occurs uneventfully—the relationship between cause and effect is far from easy to untangle. Caroline Bledsoe uses historical and contemporary materials to reflect on “common sense” about reproduction and health. Attempting to think backwards from technologies and images to the ideas of normality they may reflect, she documents changes in the body that have been wrought by public health and preventive medicine, particularly changes in the incidence of rickets which, at the first part of the twentieth century, was taken to be a “normal” condition. The discovery of vitamins in the early twentieth century and the paradox of logic they pose—invisible substances that cause illness only in their absence—paved the way for vitamin D supplementation programs. Because preventive measures such as these act “invisibly”—if they are working right, nothing happens and there is no longer any obvious malady to cure—the negative results may easily be assimilated to common sense as the “normal” condition.

We now turn more explicitly to culture. Drawing on his experience in obstetrics and gynecology in Nigeria, Friday Okonofua describes the cultural logic that underlies beliefs about fertility and fertility control among the rural Edo people of Nigeria. Desires for children remain high in this society, yet the logic of the fertility practices that people pursue is often quite counterintuitive, at least by the standards of Western medicine. Fearing the possible negative effects of contraceptives, for example, young women often try to rely on abortion for ill-timed pregnancies, a strategy that, in the view of Western medical practitioners, can be far more injurious on future fecundity than contracepting. From this same perspective, many of the steps women take to cure their infertility, going in desperation from one type of treatment to another, concurrently and interchangeably, further damage their capacity to reproduce.

Given findings like these, one might well ask, what does “fertility control” mean, and to whom? As Alaka Basu shows, the idea of normalcy as an aggregate erodes in the face of decisions that individual women make about contraception. What passes for “modern” contraception Indian-style is quite different from the idea of modern contraception as understood in the discipline of demography. Terms such as “traditional” methods of contraception, and their connotation as noninvasive, natural, vs. “modern” methods and their connotation as elite, invasive, etc., can wholly obscure different ways of seeing reproductive life. Further observations of problems in cultural definition arise in El Daw Suliman's analysis, which questions the relationship between Western clinical diagnosis of women's gynecological problems and women's own subjective evaluation of their health. In the case of uterine prolapse in Sudan, there is a substantial gap between self-reports and clinical diagnosis. For Suliman, the question is whether this is because these women have been socialized to accept symptoms of pain associated with reproduction as a “normal” part of life.

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observed in the industrialized world, and changing the healthy birth weight cutoff to a lower “healthy birth weight” cut-off for African populations might be appropriate.



No less important than ideas of statistical and cultural normality are those of normality in the domain of moral duties and expectations. Drawing on his experience among the Akan people in southern Ghana, Samuel Kweku Enos showed that the state of muscular “tautness” for a woman, which Westerners would see as “normal” if not increasingly desired, is a state far less desired among many women in rural Africa because it implies subfertility. In Ghana, the achievement of a woman's tenth birth is highly celebrated, and such a life course of reproduction and aging, though it may be taxing and far from medically safe, is praised and desired.

Lynn Thomas presents a different side of culture in her historical analysis of Kenya in the early twentieth century. Here, intense debates arose over the morality of female excision for fertility. Among missionaries and colonial medical experts, excision was seen as morally irresponsible because it could hinder reproduction by producing infection as well as scar tissue that might constrict the birth canal, producing, in turn, stillbirths, vesicovaginal fistulas or maternal death. In stark contrast to these views, local people saw excision as a moral parental duty because it enhanced a daughter's fertility, whether this was defined as the ability to produce many children or proper human beings. As Thomas' paper suggests, counterintuitive implications abound when the question of normality is scrutinized closely. Rachel Chapman's paper, using data from central Mozambique, finds that contrary to the medical advice they receive, women may actually avoid prenatal clinics until their pregnancy can no longer be hidden. This does not mean that they are unconcerned with the health of their babies. Quite the contrary. Because of the jealousies that attend reproduction, women fear that attending the prenatal clinic effectively announces a pregnancy and places it in jeopardy by malicious forces. This deep irony pervades thinking to such an extent that even antenatal nurses themselves, when they become pregnant, may forego antenatal medical attention.

The political potentials of concepts of normality in reproduction emerges strongly in Nancy Rose Hunt's paper. Hunt argues that the idea of normality can be not only a cultural vision but a tool of a political regime; indeed, a pathology can be defined as normal in order to leave a disease untreated. Obstetrician Joseph Lambillon, who studied eclampsia (a life-threatening disease that may occur during pregnancy) in the Belgian Congo of the 1940s and 1950s, saw the increase of the disease as a necessary price for a population to pay on the path to civilization. Hunt's analysis suggests that by doing little to treat eclampsia in prenatal care, Lambillon effectively preserved a colonial medical laboratory to build a medical career.

In many of the papers, the idea of normality implies a set of social expectations. Julie Livingston shows that ideas about relations between generations in Botswana—and, indeed, about the aging process itself—are being reshaped by transformations in economics and politics. What she refers to as the “splintering”—fragmentation of cultural meanings, social relationships, and biological references—of old age is emerging as a critical question in how responsibilities for the old and sick will devolve. Presenting ways of thinking “forward” by examining unfolding processes of medicalization, Stacy Pigg shows how certain notions of sexuality are promulgated worldwide under the imprimatur of Western science. By scrutinizing changes in representations of the body and reproduction in internationally distributed textbooks and teaching materials on AIDS in Nepal, she finds an increasing convergence on a particular set of Western ideals about sexuality. These ideas are brought to bear to exert pressure for certain norms of child spacing, age at marriage, and communication between husbands and wives. Indeed, AIDS education programs have tended to create terms of discourse rather than convey information on disease prevention.

\* \* \*

As these brief summaries show, whether we call ourselves demographers, anthropologists, historians, physicians or gerontologists, the problem that we perpetually confront in describing normality is how to discern between deceptively commensurate vocabularies. The themes and data

in the papers spread out broadly and imaginatively, opening up a number of strategies, both methodological and substantive, for addressing questions of normality. What emerged in the mix, some of which our discussants captured in their excellent comments and our dedicated student rapporteurs captured in their notes, was a lively and engaged exchange.

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## **THE SECOND QUESTION ASKED IS: “HOW MUCH DOES THE BABY WEIGH?” SO, WHAT IS “NORMAL” BIRTH WEIGHT?**

*Fredrick Makumbi*

*Bernard Guyer*

### **INTRODUCTION**

We all have the experience of meeting a friend or relative and hearing that a new baby has been born. The first question we ask is “is it a girl or boy?” The second question we generally ask is “how much does the baby weigh?” Why do we want to know? What is the significance of birth weight? What is “normal” birth weight? The goal of this short paper is to explore infant birth weight and address the issue of “normal” birth weight. It appears that LBW, defined as a birth weight of <2,500 g, has been adopted as a universal measure of “abnormal” or “at-risk” birth. We are not convinced, however, that birth weight <2,500 g should always be considered an abnormal birth weight. We argue that it may be useful to begin thinking about birth weight across its entire distribution and that clinicians may wish to consider different standards of risk for different populations. This is particularly relevant for Africa. We will use birth weight data from both developed and developing countries to examine these issues.

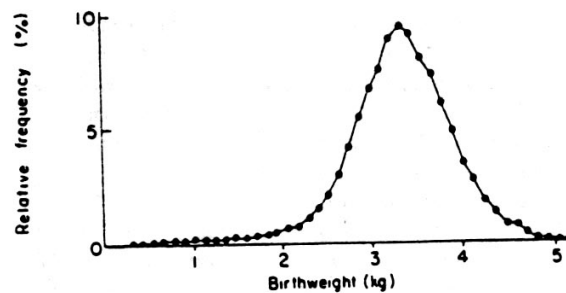
We don’t know when the weighing of babies became a routine practice. In 17th century Holland, however, Dr. Stephanus Blankaart (1684) in his *Little Book on Child Sickness* recognized that the size of the baby was important to survival and that the nutritional status of the mother had an influence on the newborn’s size. Interestingly, Joseph DeLee (1914), the Professor of Obstetrics at Northwestern University, did not think that the topic of infant birth weight needed to be included in his textbook of obstetrics, published in 1914.

The relationship between small size at birth and risk of neonatal death has been well recognized throughout the 20th century. By the 1980s, the concern about low birth weight (LBW) dominated the discussions of perinatal health, obstetrics practice, and social policy in the United States (Institute of Medicine 1985; Paneth 1995). Recently, Conley and Bennett (2000) published a highly publicized paper in the *American Sociological Review* in which they found LBW to be a major contributor to lower educational attainment among children in the United States. Further, LBW has been adopted by international health and development organizations as a universal marker of obstetric and neonatal risk and is being applied worldwide, even in populations with widely differing demographic characteristics. The United Nations Administrative Committee on Coordination (ACC), Sub-Committee on Nutrition (SCN) (Podja and Kelley 2000) recently published an international report on LBW in developing countries.

**UNDERSTANDING BIRTH WEIGHT DISTRIBUTION AND LBW**

Babies are weighed at birth and these weights are usually reported in grams. Like other biological measures, birth weights from populations of babies are distributed in what approximates a normal or Gaussian distribution (Figure 1.1). Close examination of Figure 2.1, however, reveals that there are additional births in the “tail” at the lower end. It has long been recognized that this tail represents the small and premature group of babies. The practical clinical question that arises is where, along this continuous distribution, should the threshold of concern for infant survival be drawn. In effect, this process is used to define normal and abnormal (in this case, low) birth weight.

**Figure 1.1**  
An Empirical Birth Weight Distribution, Newcastle upon Tyne, 1960-1969.



Source: Wilcox and Russell 1983.

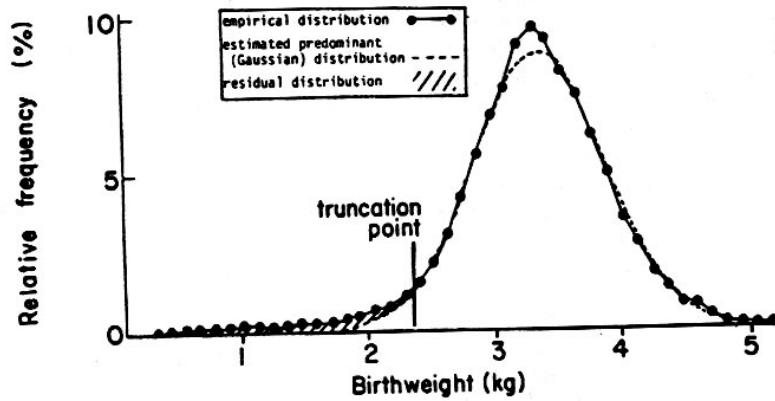
Yllpo, a Finnish pediatrician, proposed early in the 20th century that 2,500 g be set as the threshold. Thus, infants born weighing less than 2,500 g are considered low birth weight and at higher risk of infant death. This definition of LBW has become universally accepted and is now often treated without carefully questioning its implications.

Wilcox and Russell (1983), in a series of papers, have proposed a much more elegant and insightful approach to understanding the distribution of birth weight and the identification of the population of babies at higher risk of death. They use the statistical properties of the distribution to separate infants into two sub-populations: (1) the “predominant” component that corresponds to the normal or Gaussian distribution and represents orderly biological variability among infants that are generally born around term; and (2) the “residual” component made up of the infants that fall outside of the normal distribution and may represent the results of non-random, pathological influences. Most of the residual distribution is at the lower end of the curve (see Figure 1.2). This approach shows, however, that there can be “normal” infants who weigh less than 2,500 g as we can see in Figure 1.3. In fact, at 2499 g most of the newborns are in the predominant component, while at the lower end of the curve (<1500 g), most are in the residual component. Wilcox and Russell (1983), and Skjoerven (1992), describe how birth weight distribution is related to perinatal mortality as can be seen in Figure 1.4. As birth weight rises, mortality risk falls rapidly to a low point that corresponds to the higher side of the predominant distribution; mortality then rises again infants are born “too large.”

From this discussion, it appears that, in the case of birth weight, “normality” is a biological distribution rather than a category, and that its significance is its continuous and complex relationship to the risk of infant death. Many babies who are either too small or too

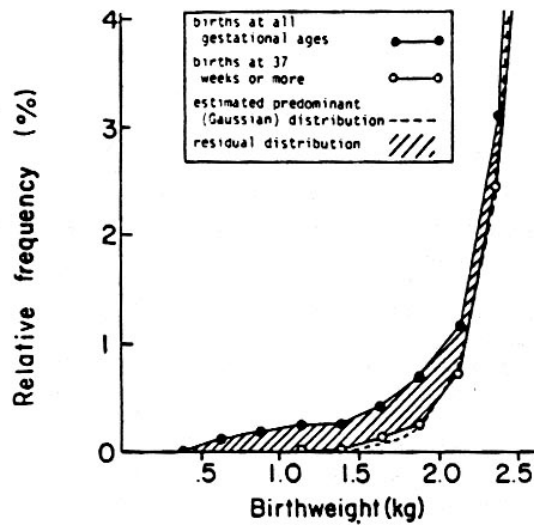
big are at increased risk of death from a variety of pathological processes. Conversely, there are normal babies in the LBW group who may be at no increased risk. Thus LBW, defined as <2,500 g, is not a single entity.

**Figure 1.2**  
An Empirical Birth Weight Distribution with its Estimated Predominate and Residual Distributions.



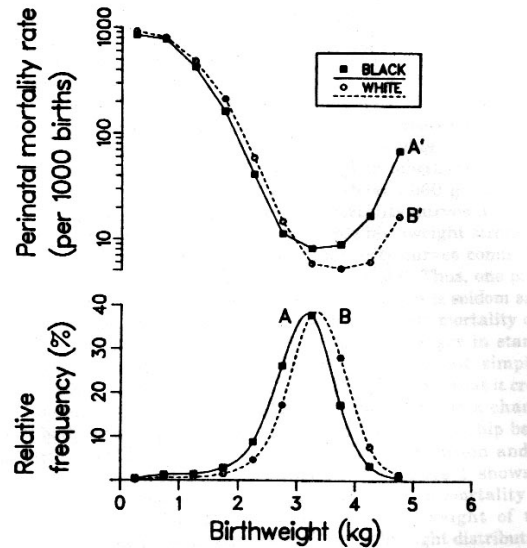
Source: Wilcox and Russell 1983.

**Figure 1.3**  
Births Weighing Less Than 2,500 g with Estimated Predominant Distribution and Empirical Distribution of Term Births. United Kingdom, 1970.



Source: Wilcox and Russell 1983.

**Figure 1.4**  
**Births Weight Distribution and Weight-Specific Perinatal Mortality Curves for Whites and Blacks. North Carolina, 1970-1973.**



Source: North Carolina Vital Statistics Data Files (26) in Wilcox and Russell 1983.

### **COMPARING BIRTH WEIGHT IN DIFFERENT POPULATIONS: SHOULD THERE BE A SINGLE MEASURE OF LBW**

Having described these important characteristics of birth weight and weight-specific mortality, it would seem that comparisons of different populations should be facilitated. Unfortunately, it has been difficult to find good comparative data with which to examine the issues of normality. Most of the literature goes back to assuming that LBW is a single entity which can be simply compared across populations. Rooth (1980) used international comparisons of birth weight distributions (although, unfortunately, the complete data were not presented in the paper) to argue for different standards of LBW for different populations. In short, he showed that the means and distributions of these populations differed and that setting the LBW at two standard deviations below the mean gave a better relationship to perinatal mortality. Tables 1.1 and 1.2 show how the change in definition is translated into new LBW weights and proportions.

One of the few papers we found that showed actual birth weight distributions used populations of Caucasians and Chinese from Canada (Wen 1995). The authors point out that the shapes of the curves differ for white and Chinese babies as demonstrated in Figure 1.5. The curve for the Chinese is tighter with a distribution that more closely approximates the Gaussian. This may be because Chinese mothers are exposed to fewer extremes of maternal determinants of fetal growth. The Chinese babies are, on the average, smaller than the white babies. In addition, although more Chinese babies are born weighing less than 2,500 g, fewer of them may be in the “residual” distribution. We might say that it is “normal” for Chinese babies to be smaller, and the threshold for risk may fall well below the 2,500 g definition usually used.

**Table 1.1**  
**Mean Birth Weight and Mean—2 SD of All Live Born Infants as Calculated from 500 g Groups.**

Country	Mean birthweight, (g)	Mean—2 SD (g)
Austria	3150	2200
Cuba	2900	1850
Hungary	2900	1900
Japan	2950	2150
New Zealand	3150	2200
Sweden	3250	2250
U.S.A. (6 States)	3100	2100

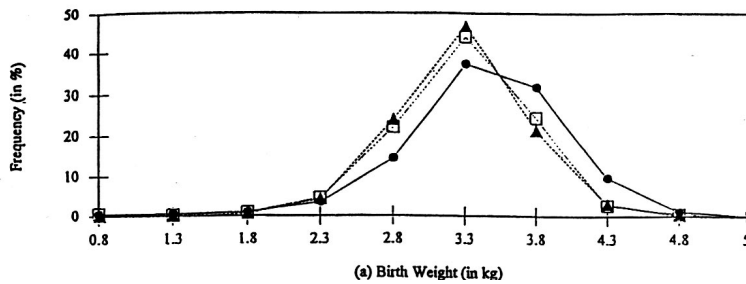
Source: Rooth 1980.

**Table 1.2**  
**Percentage Low Birth Weight in Selected Countries, 1973.**

Country	2500 g	Mean—2 SD
Austria	5.7	5.5
Cuba	10.8	3.5
Japan	5.3	3.3
Hungary	10.8	5.6
New Zealand	5.2	4.0
Sweden	3.9	3.8
U.S.A. (six States)	6.0	3.5

Source: Rooth 1980.

**Figure 1.5**  
**Distributions of Caucasian (?), Immigrant Chinese (?), and Native Chinese (?) Infants Born to Primiparas with Concord Ultrasound and Last Normal Menstrual Period-determined Gestational Ages.**



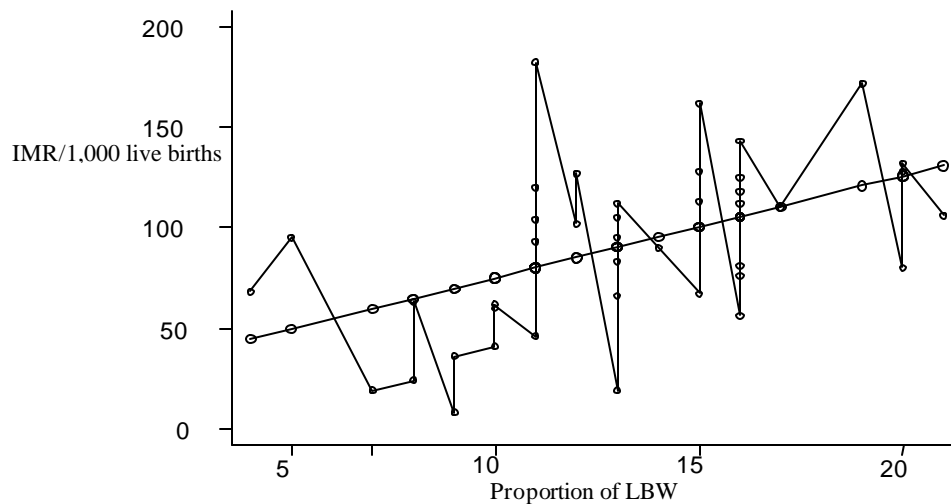
Source: Wen, et al. 1995.

The SCN report “Low Birthweight” (Pojda and Kelley 2000) never critically considers the definition of LBW. For the purposes of the report, they simply apply the <math>\leq 2,500\text{ g}</math> definition to examining perinatal health policies and maternal nutrition policies in many different developing countries of the world. No data on birth weight distributions are shown and no distinctions are drawn between differing patterns of birth weight.

### **Birth Weight and Infant Mortality in Africa**

Infant mortality rates (IMRs) in Africa are much higher than in the developed world, ranging from 56.6/1,000 (Namibia in 1992) to 134/1,000 (Malawi in 1992). Most of the infant deaths in Africa occur in the postnatal period due to preventable causes like diarrhea, respiratory infection and communicable diseases that could be reduced by vaccination. The emergence of HIV/AIDS at high prevalence (2-35 percent) has threatened to drive up the number and rate of infant deaths. The effect of LBW on infant deaths in the developing world has thus been obscured by these other causes. However, data from African countries (Figure 1.8) show that there is a positive association between the proportion of LBW and the IMR. Demographic and health surveys, and studies based on hospital records have provided these data, but their quality has been questioned, especially their completeness and timeliness.

**Figure 1.8**  
**Relationship between Proportion of LBW and IMR in 41 African Countries, 1995-1999.**



Source: Compiled from UNICEF 2001.

The prevalence of LBW in Africa is high as shown by T. E. Taha, R. H. Gray, M. M. Abdelwahab et al. (1994) in Sudan, where the overall incidence of LBW was 18.8 percent and 8.2 percent in community and hospital populations, respectively. The major risk factors associated with LBW included malaria, low social economic status (SES) and female births. This led to their recommendations for improving maternal nutrition and malaria treatment and control as a way of reducing LBW. Edwards (1994) found maternal HIV infection to be



significantly associated with LBW and the proportion of preterm deliveries. Stillbirths, neonatal mortality and fetal growth retardation were higher among HIV infected than non-infected mothers, but these were not statistically significantly different.

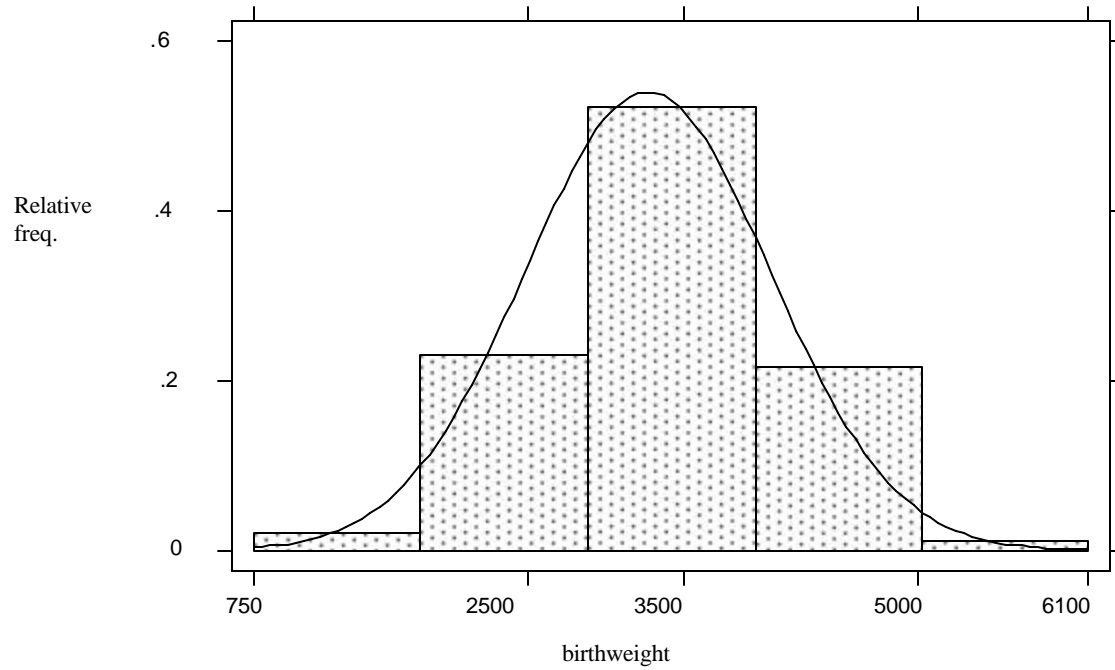
Unlike in the developing world, most infant deaths in the developed world occur in the perinatal period. These deaths have been attributed to LBW since other preventable causes have been substantially reduced or eliminated. The risk factors associated with LBW in the United States are race, smoking, illicit use of drugs, perinatal infection, and lack of prenatal care among others. Some of these risk factors, however, like prenatal care, have not been shown conclusively nor causally to be related to LBW. It has been argued that those women who seek prenatal care, for example, are actually different in many aspects from those not seeking care, especially in terms of social economic status. Many of these risks factors associated with LBW appear to be different in the developed and developing world.

To assess the distribution of birth weights in an African population, we used data from the 1995 Uganda Demographic and Health Survey (DHS) (p.12) on 1,306 births (this represented 20 percent of all births) occurring 0-60 months before the survey. We examined the association between birth weight and infant mortality (data not available on perinatal mortality), and factors like maternal education and residence (which could reflect SES), prenatal care (trimester during first visit), and gender of child. Using the Shapiro-Wilk test of normality, the birth weight distribution was not Gaussian as shown in Figure 1.9, which could indicate a residual distribution in the lower tail of the curve. The proportion of children with LBW in this data was about 10 percent (13 percent according to a 2001 United Nations Children's Fund (UNICEF) report on the state of the world's children). Table 1.1 shows the population's characteristics and birth weights. Different characteristics had similar mean birth weight except gender where males were statistically significantly heavier than female babies. In order to assess the relationship between infant mortality and birth weight in this sample, a logistic regression model with death before one year of age as the outcome variable was used. "Normal birth weight" ( $\geq 2,500$  g) infants were two times less likely to die compared to LBW ( $< 2,500$  g) infants, but this difference was not statistically significant. Controlling for residence, maternal education, prenatal care, and maternal age, the odds ratio was 1.98 (CI 95percent 0.9, 4.3) but still not statistically significant. This finding emphasizes the earlier assertion that causes of infant death other than LBW are playing a bigger role in infant deaths in Africa than they do in developed countries.

Using data from three clinics in Niamey, Niger where 90-95 percent of registered pregnancies were delivered, N. B. Mock, D.M. Mercer, J. C. Setzer et al. (1994) assessed the distribution and prevalence of LBW. The prevalence of LBW in this urban setting was found to be 11.3 percent, much lower than the World Health Organization estimates of 16-17 percent. The birth weight had a tight distribution, with a mean of 3010 g and a standard deviation of 500 g (as seen in Figure 1.10). Factors associated with LBW were infant's gender (females with odds ratio of 1:3) and maternal parity. From all these data, it is clear that African mean birth weights are lower than in the developed world, but the distribution is tighter. The proportion of LBW is still high, ranging from 10-17 percent, and the association between LBW and infant deaths is not so significant because other causes are more prevalent and more aggressive.

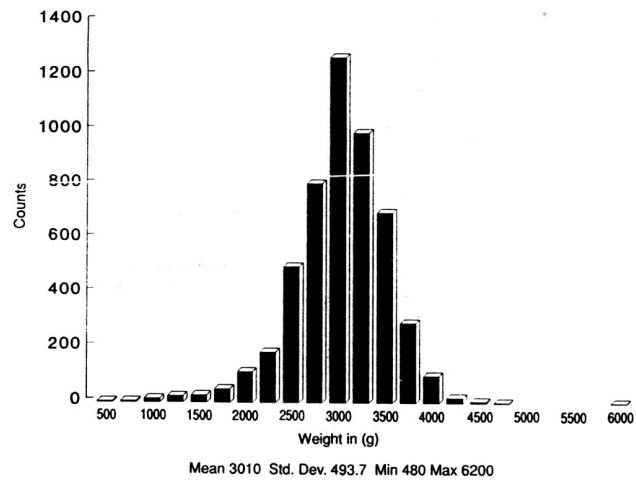
To have a better understanding of the distribution of birth weight, and the prevalence and the impact of LBW on infant mortality, there is a need to collect representative data on all births in the first hours of delivery. This will ensure availability of data on residual weight

**Figure 1.9**  
**Birth Weight Distribution in Uganda, DHS 1995.**



Source: Uganda Demographic and Health Survey 1995

**Figure 1.10**  
**Distribution of Birth Weights in the Naimey Study.**



Source: Mock *et al* 1994.

babies that may be missing in most data sets. It is also important to collect and monitor infant deaths for assessing the impact of LBW on mortality.

## **CONCLUSIONS**

Birth weight is a biological measure that is distributed in complex ways in different populations, according to some underlying biological properties and according to external influences on pregnancy. Low birth rate was created as a measure to identify the high risk group of infants likely to die early in life. We have raised concerns, however, about the use of a single birth weight definition for LBW in populations with widely differing biological and risk structures. Although there may be problems with the data, we believe there is a possibility that African populations have a birth weight distribution that more closely approaches the Gaussian than does that of developed country populations. Thus, while the proportion of infants weighing less than 2,500 g in Africa may be greater, fewer of them are “abnormal” or located in the residual distribution than would be expected from a developed country population.

Our analysis shows that the definition of LBW may be different in the countries of Africa than in the developed nations. It appears that the forces affecting the weight of the newborn may be more unevenly distributed in the developed countries and act differentially on different segments of the population. Thus, the strategy used to reduce the proportion of LBW births is to identify the high-risk pregnancies and intervene to reduce those risks. Presumably, if these interventions are effective on the population basis, the birth weight distribution curve would shift so that the mean would be greater and the residual population was reduced, and the shape of the curve would change to reflect more closely the Gaussian distribution. Since the curve is already more Gaussian in the developing countries, with less unique forces acting to skew the distribution, the use of interventions designed to reduce risk factors for LBW may have little effect. The higher rates of LBW in these populations are the result of the entire curve being shifted to the left, rather than having a uniquely high-risk population. Interventions may need to be universal, for example, in the management of malaria in pregnancy, or in the general improvement of nutritional status. Screening may serve no purpose, and the adoption of the interventions used in the developing nations may be ineffective. Even in the developed countries, it may be inappropriate to treat LBW as a single phenomenon and use it as an independent variable to explain complex societal outcomes. More refined analyses of the implications of LBW should be used.

Finally, we acknowledge the limitations of our argument. We recognize that the completeness and quality of data available to us was limited. Better data from African populations would help us to assess our argument. In addition, the availability of data on the effects of interventions would be useful. Finally, we recognize that there is a great controversy over the definition of LBW. Some argue that the <2,500 g standard should be kept because a change at this time would result in some policy makers ignoring obvious disparities in health outcome. Our paper should not be misinterpreted as an effort to take a position in this policy debate.

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## CHALLENGING NORMALITY: DUTCH OBSTETRIC SCIENCE

*Raymond DeVries*

Because of its oddity, the maternity care system of the Netherlands offers us a great opportunity to look at normality at birth. Nearly all reports and research articles on Dutch obstetrics begin with a comment on the striking peculiarity of the way birth is accomplished in the Netherlands. In her foreword to the anthology, *Successful Home Birth and Midwifery: The Dutch Model*, Jordan (1993, iv) identifies Dutch maternity care as a “most anomalous phenomenon” that “has always been an inspiration.” Akrich and Pasveer (1996, 21-22) open their book-length study of maternity care in the Netherlands and France by noting:

The differences between the two countries are striking (*les differences entre les deux pays sont frappantes*)...more than a third of births occur at home in the Netherlands, as opposed to France, where 99.5% occur in the hospital....epidural analgesia is used in 70% of births in France and only 15% of Dutch births.

In her article on Dutch obstetrics, Hiddinga (1998, 189) says the midwifery care system in the Netherlands:

May rejoice (*zich verheugen*) in the routine attention of a broad public, both national and international...This has everything to do with the extraordinary (*bijzonder*) character of the Dutch system of care around pregnancy and birth.

It seems the singularity of the Dutch system in modern obstetrics makes it difficult to avoid such exclamatory language.

The peculiar obstetric habits of the Dutch often find their way into the professional literature as a foil for more “ordinary” (i.e., medical) maternity care practices, a way of promoting alternative approaches to birth. Analyses of the Dutch system have been used to encourage less interventive obstetrics (van Alten, Eskes, and Treffers 1989; Treffers et al 1990; Tew and Damstra-Wijmenga 1991; Treffers and Pel 1993; Oppenheimer 1993; Hingstman 1994) and to describe how features of the system might be profitably exported to other countries (Mehl-Madrona and Mehl Madrona 1993; Rothman 1993; Treffers 1995; Mander 1995). Oppenheimer’s (1993, 1402) reflection on what the United Kingdom might learn from the Dutch is a typical example of the admiration expressed for the Dutch way of birth:

There are as many problems in the Dutch system of maternity care as in our own. The major features and philosophies of the Dutch system, however, have something to teach us—nationally agreed criteria of risk, training and support of midwives in more independent methods, and good communication and confidence between providers of primary and secondary care. Perhaps we can achieve not only low perinatal and maternal mortality and morbidity but also less dissatisfaction among consumers, more job satisfaction among midwives, and more rational working for obstetric staff.

Given the reputation of the Netherlands as the home of non-technological birth, it is no surprise that when the World Health Organization was looking to create a “practical guide” for care in normal birth they called on the services of a Dutch gynecologist and a Dutch midwife (see World Health Organization 1999).

Perhaps because of its peculiarity, the maternal care system of the Netherlands is often misrepresented. Because the system is so odd and because most fact-finding trips are so short, many articles about birth in the Netherlands written by non-Netherlanders contain errors of fact and tone. For example, Mehl-Madrona and Mehl-Madrona, writing in 1993 (p. 1), claim that “over 70 percent of births [in the Netherlands] are still attended by midwives.” In fact, midwives attended about 46 percent of births in both 1992 and 1993. As far back as 1910, the first year that data is broken down by caregiver, midwives in the Netherlands attended 57.7 percent of all births and at no point in the twentieth century did they attend more than 60 percent of overall Dutch births. Midwives do attend, however, more than 70 percent of homebirths. It is likely the authors heard this and mistakenly assumed that the 70 percent figure applied to all births. In her ethnographically based discussion of the lessons of Dutch obstetrics for Americans, Rothman (1993, 201) sets the scene by discussing windmills, tulips, bicycles and Rembrandt, giving her readers over-romanticized pictures of Dutch midwifery and Dutch society. Her description of the Netherlands as a “Mecca for Midwives” and the home of noninterventive obstetrics makes it difficult to believe that Dutch midwives once argued for the right to wield forceps (see Marland 1995, 328) or that Dutch midwives are beginning to outfit their offices with the apparatus for sonograms (see Akrich and Pasveer 2001).

Even the Dutch misrepresent their obstetric system. In *Expecting* magazine’s yearly special issue on pregnancy and birth, *Ouders Van Nú* (*Parents of Today*), a Dutch parenting magazine, reports:

Pregnancy in the Netherlands is not seen as an illness—requiring a great deal of medical help—but as a natural event that can be supervised well by a midwife. This leads to the following statistic: in the Netherlands about 70 percent of babies are born at home, without complication or unusual interventions. (Schiet 1994, 112)

In the early 1960s this was the case—in 1960 72.6 percent of births were at home, in 1961 the number was 71.2 percent and in 1962 it was 70.5 percent—but through the last decades of the twentieth century the percent of births at home continued to decline. By 1994, the date of the article quoted above, the number of births at home represented just over 30 percent of all births.

Before we can dissect the conditions that generate a different view of normality in pregnancy and birth—and a different science of obstetrics to support that view—it is necessary to describe the system accurately. I begin with a brief narrative account of the system and then offer a few statistics that describe larger patterns of care.

### “GETTING” A BABY IN THE NETHERLANDS

The first response of a woman who suspects she will be “getting”<sup>1</sup> a baby will be either a self-test using an over-the-counter pregnancy test kit or a trip to the general practitioner (*huisarts*) for a pregnancy test. Those choosing the home test route will inform their *huisarts* if the results are positive. The *huisarts* is the hub of the health care system of the Netherlands. Nearly everyone in the country is registered with a *huisarts* in their neighborhood, who serves as a family doctor and a “gatekeeper” to other medical services.<sup>2</sup> Only in exceptional cases would a

<sup>1</sup> Women in the Netherlands do not “have” babies, they “get” (or “receive”—*krijgen*) babies. We will explore this small, but significant difference in language – if one “gets,” rather than “has,” a baby, the child is regarded more as a gift than as a possession.

<sup>2</sup> For more information about the role of the *huisarts* in the Dutch medical system, see van der Velden (1999) and de Melker (1997);

Dutch women go directly to a gynecologist when she believes she is pregnant, and in almost all of those cases she would do this on the advice of her *huisarts*. Having confirmed her pregnancy and (perhaps) shared the happy news with relatives and friends, a Dutch woman can now contemplate how she will bring this child into the world. Will it be at home or in a hospital? What kind of practitioner will see to her prenatal care and attend the event? And what sort of care will be used after the birth?<sup>3</sup>

Dutch social policy directs women expecting a healthy birth into the “first line” (*eerstelij*n), or primary care, system. In the *eerstelij*n either a midwife or a *huisarts* will provide all prenatal care and will *begeleiden* (accompany)<sup>4</sup> a woman at birth. Women under the care of the *eerstelij*n are free to choose a birth at home or in the hospital. If they prefer a hospital birth, they will have what is known as *poliklinische bevalling* (polyclinic birth) under the supervision of their primary caregiver. The term “polyclinic” suggests a separate birthing center, but in fact, there are only a few birth clinics in the Netherlands; a *poliklinische bevalling* refers to an uncomplicated short stay (less than 24 hours) hospital birth.

If complications arise during pregnancy or birth, the primary caregiver will refer a woman to the *tweedelij*n (second line), or specialist, care. After assessing the complication the specialist, in this case a gynecologist, may send the woman back to the *eerstelij*n or may keep the woman under his or her care in the *tweedelij*n for the duration of her prenatal care and for birth. All births supervised by a gynecologist take place in a hospital; some of these will require complete clinical care, others will take place in the polyclinic and, if all goes well, mother and baby will return home within 24 hours.

The preference for primary care in Dutch obstetrics rests on a generally accepted screening system for identifying “physiological” and “pathological” pregnancies. The “obstetric indications list” (sometimes referred to as the “Kloosterman list” after its developer Gerrit-Jan Kloosterman), first used in an informal way in the late 1950s and revised by a government commission in 1987 and again in 1999 (see *Ziekenfondsraad* 1999), defines the conditions that require midwives and general practitioners to refer their clients to specialists. The list allows the Dutch to avoid the assumption made in most other industrialized countries that all births are potentially high risk and, therefore, must be monitored by specialists.

Seventy percent of Dutch women begin their prenatal care in the first line (Wiegens 1997, 26). As a result of referrals made to the *tweedelij*n during the course of prenatal care and labor, at the time of birth midwives are caring for just under 50 percent of women, *huisartsen* for an additional 10 percent, and gynecologists for just over 40 percent. Of the women remaining in the care of the first line, about 60 percent give birth at home, resulting in a home birth rate of just over 30 percent.

A Dutch woman who wishes to prepare for childbirth may choose from at least five different approaches: *zwangerschaps-gymnastiek*, *zwangerschaps-yoga*, the *mensendieck* method, *psycho-profylaxe*, and *haptonomie*. Each has a slightly different emphasis and each suggests different roles for the mother’s partner. The standard health insurance policy does *not* reimburse for the cost of these childbirth preparation classes. Finally, there is the choice of the postpartum caregiver. A much-discussed feature of Dutch obstetrics is the provision of postpartum care by *kraamverzorgsters* (specially trained providers). These caregivers come to the home of the new parents and do everything from household chores, to shopping, cooking, watching the condition of mom and baby, and offering instructions in baby care and feeding. Because of a shortage of *kraamverzorgsters* in recent years, expectant parents must register for these services early in the pregnancy; parents may also choose how much or how little care they wish (see van Teijlingen 1990).

<sup>3</sup> In the following section, I explain how these choices are constrained by social policies.

<sup>4</sup> The use of this verb, which also describes the work of a conductor of an orchestra and an accompanist for musical performances, suggests a less dominating role for the caregiver.



## HOW THEY ARE BORN: STATISTICAL PATTERNS IN DUTCH OBSTETRICS

Having gained an appreciation for the policies, players and places of maternity care in the Netherlands, we look at society-wide trends: How many babies are born? Where do these births occur? Who attends these births? How many midwives, *huisartsen* and gynecologists are offering their services to pregnant women? How large a role do midwives play in maternity care and how is that role changing? What are the medical outcomes for mothers and babies? At this point we are only interested in describing the Dutch situation. In later chapters we will revisit these numbers and examine how the structural and cultural features of Dutch society helped to create, and now maintain, this maternity care system.

To set the stage we must look at the most general information related to births, namely, the number of births per year, the fertility rate and the average number of children per woman. Figure 2.1 shows relatively high fertility rates for Dutch women extending from the after war years on through the early 1970s. Notice too, that the average number of children per woman—that is, the number of children a woman would be expected to have if the age-specific fertility rates for that year were applied to her lifetime—remain high from the 1940s through the early 1970s, when they drop sharply.

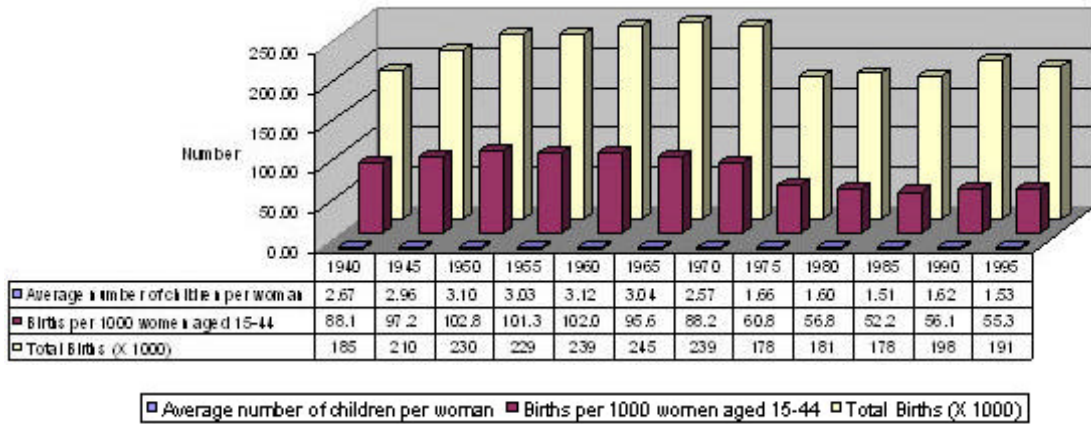
How are these babies delivered? Table 2.1 presents the most sought after information about Dutch maternity care, statistics that describe the place of birth and the professional in attendance. These numbers paint a stark contrast between birth in the Netherlands and birth elsewhere. To highlight the peculiarity of the Dutch system Table 2.1 contrasts the situation in the Netherlands with that in the United States where homebirths and midwife-assisted births are significantly rarer.

Figures 2.2 and 2.3 offer a graphical representation of these data; Figure 2.2 highlights the great disparity in the rates of home birth in the Netherlands and the United States. Figure 2.3 shows the stark difference between the role of midwives in the Netherlands and the United States. For those who know little about the way birth occurs in industrialized countries Figure 2.3 will underscore the notion that the Netherlands is a “Mecca for midwives.” Birth activists, however, will find these data alarming. If the Netherlands is nirvana for midwives, why are they attending less than half of all births? In Sweden and Norway midwives attend nearly all births. In fact, because midwives monopolize birth in Sweden, the government does not even record the distribution of deliveries. After failing to find “percent of births attended by midwives” in an exhaustive search of the website of the Swedish Statistics Bureau (*Statistiska Centralbyrån*, [www.scb.se](http://www.scb.se)) I asked a colleague in Sweden to track down this number. After her search she reported:

The kind of statistics you are looking for may not exist as such in Sweden. Since the medical regulations state that the normal delivery is always the responsibility of the midwife, there is really no direct reason for checking the numbers [of] midwives/doctors. Of course there are deliveries finished by doctors in emergency cases, but there has always been a midwife at [the] start so it may be hard to define what is a doctor's delivery [or a] midwife's delivery (Milton, personal communication, 2000).

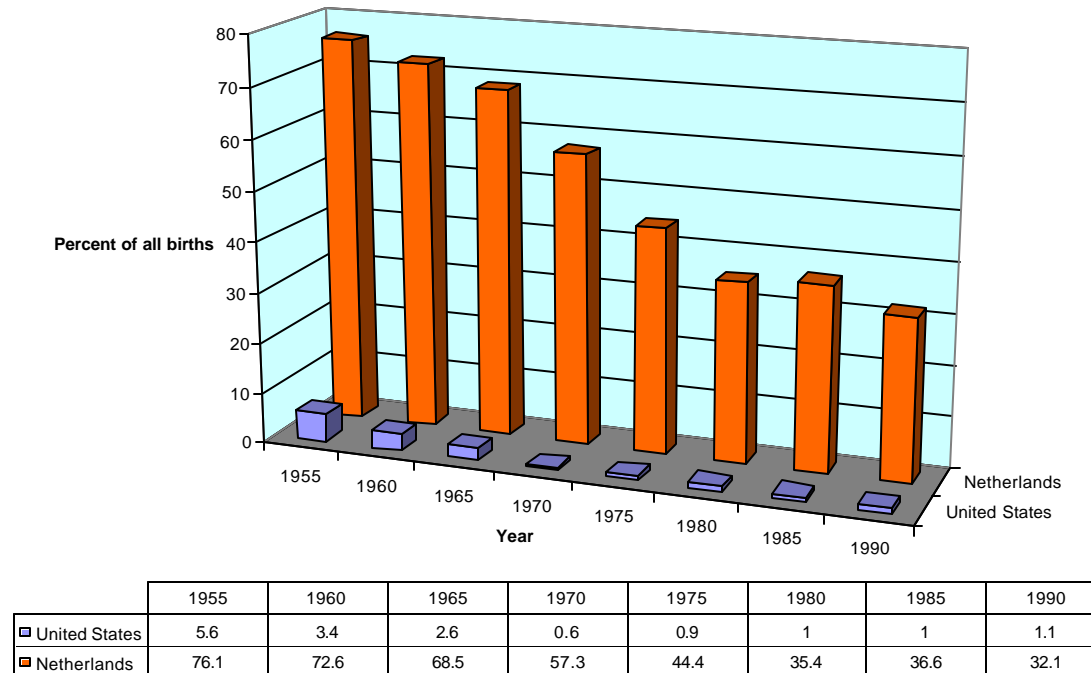
Norway has a similar maternity care system and its extensive “Medical Birth Registry” (1997), complete with facts about every aspect of birth, has no entry for “attendant at birth.” Distribution of the responsibility for attending births between midwives and physicians can be understood as a result of differences in the numbers of each type of practitioner. Figure 2.4 gives us a picture of the different numbers of midwives, *huisartsen*, and gynecologists practicing in the Netherlands. Of course, not all *huisartsen* include maternity care in their practice; a recent survey indicates that 16 percent of *huisartsen* provide care during pregnancy and birth and an additional 22 percent offer care only during pregnancy (Wiegers and Hingstman 1999). Like most European nations, the Netherlands has far more midwives than gynecologists. Once again the United States is on the opposite end of the continuum: in the United States the ratio is reversed, there are about 40,000 practicing obstetrician/gynecologists

**Figure 2.1**  
**Birth Statistics, 1940-1995, the Netherlands.**



Source: Centraal Bureau voor de Statistiek (CBS), The Netherlands.

**Figure 2.2**  
**Homebirths in the United States and the Netherlands, 1955-1990 (as a percent of all births).**



Source: U.S. Department of Health and Human Services (1993); National Center for Health Statistics (1997); Centraal Bureau voor de Statistiek (1899-1989; 1990, 1992).

**Table 2.1**  
**Distribution of Live Births by Place of Delivery and Attendant, 1940-1997, United States and the Netherlands (in percent).**

<i>United States</i>						<i>The Netherlands</i>			
Year	Place of Delivery		Attendant			Place of Delivery		Attendant**	
	<i>Hospital</i>	<i>Not in Hospital*</i>	<i>M.D.</i>	<i>Midwife</i>	<i>Other</i>	<i>Hospital**</i>	<i>Home</i>	<i>M.D.</i>	<i>Midwife</i>
1940	55.8	44.2	90.8	8.7	0.6	n.a.	n.a.	51.3	47.7
1945	78.8	21.1	93.5	6.1	0.3	n.a.	n.a.	62.8	36.1
1950	88.0	12.0	95.1	4.5	0.4	n.a.	n.a.	58.1	41.1
1955	94.4	5.6	96.9	2.9	0.3	23.9	76.1	58.5	40.9
1960	96.6	3.4	97.8	2.0	0.2	27.4	72.6	63.0	36.6
1965	97.4	2.6	98.3	1.5	0.3	31.5	68.5	64.2	35.3
1970	99.4	0.6	99.5	0.4	0.1	46.7	57.3	62.7	36.7
1975	99.1	0.9	98.8	0.9	0.3	55.6	44.4	59.9	38.6
1980	99.0	1.0	97.4	1.7	0.8	64.6	35.4	59.7	39.4
1985	99.0	1.0	96.7	2.7	0.6	63.4	36.6	57.8	41.7
1990	98.9	1.1	95.3	3.9	0.8	67.9	32.1	53.9	44.1
1991	98.9	1.1	94.8	4.4	0.8	69.3	31.0	53.6	45.0
1992	98.9	1.1	94.5	4.9	0.6	68.5	31.5	53.1	45.8
1993	99.0	1.0	94.0	5.3	0.7	69.3	30.7	52.9	46.4
1994#	99.0	1.0	93.8	5.5	0.6	65.7	33.8	n.a.	n.a.
1995#	99.0	1.0	93.3	5.9	0.6	65.5	34.1	n.a.	n.a.
1996#	99.0	1.0	92.8	6.5	0.6	63.6	35.8	n.a.	n.a.
1997	99.0	1.0	92.4	7.0	0.6	n.a.	n.a.	n.a.	n.a.
1998	99.0	1.0	92.0	7.4	0.6	n.a.	n.a.	n.a.	n.a.

**Notes**

n.a.: not available.

\*Includes free standing birth centers

\*\*Excludes births with shared responsibility and cases where attendant is unknown.

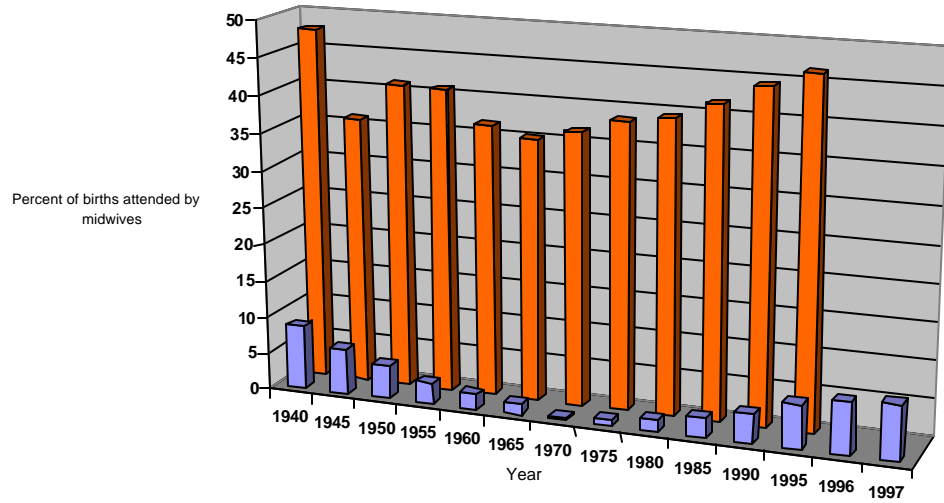
\*\*\* Includes, starting in 1970, 'polyclinic' (i.e. short-stay) hospital births.

# Data for the Netherlands in 1994, 1995 and 1996 are from "Health Survey," in *Vademecum of Health Statistics of the Netherlands*, Centraal Bureau voor de Statistiek 1998.**Sources**

**For the United States:** U.S. Department of Health and Human Services *Vital Statistics of the United States*, Vol. 1: *Nativity*, ; "Advance Report of Final Natality Statistics," in U.S. National Center for Health Statistics, *Monthly Vital Statistics Report* vols. 41-47, 1990-1997.

**For the Netherlands:** Centraal Bureau voor de Statistiek, 1899-1989; Centraal Bureau voor de Statistiek 1990, 1992.

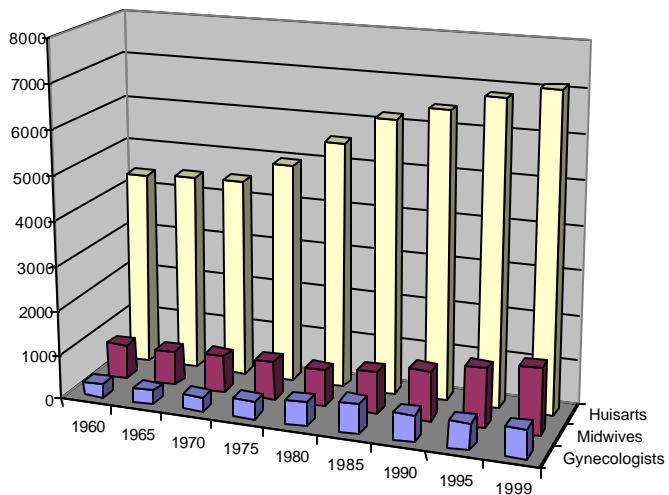
**Figure 2.3**  
**Midwife Attended Births as a Percentage of all Births: Netherlands and the United States, 1940-1997.**



	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	1996	1997
United States	8.7	6.1	4.5	2.9	2	1.5	0.4	0.9	1.7	2.7	3.9	5.9	7	7.4
Netherlands	47.7	36.1	41.1	40.9	36.6	35.3	36.7	38.6	39.4	41.7	44.4	46.4		

Source: U.S. Department of Health and Human Services (1993); National Center for Health Statistics (1997); Centraal Bureau voor de Statistiek (1899-1989; 1990, 1992).

**Figure 2.4**  
**Numbers of Practicing Gynecologists, Midwives and *Huisarts*, Netherlands 1960-1999.**



	1960	1965	1970	1975	1980	1985	1990	1995	1999
Gynecologists	307	317	328	405	545	673	604	592	634
Midwives	788	778	836	850	814	945	1122	1332	1507
Huisarts	4405	4452	4470	4937	5556	6179	6465	6814	7093

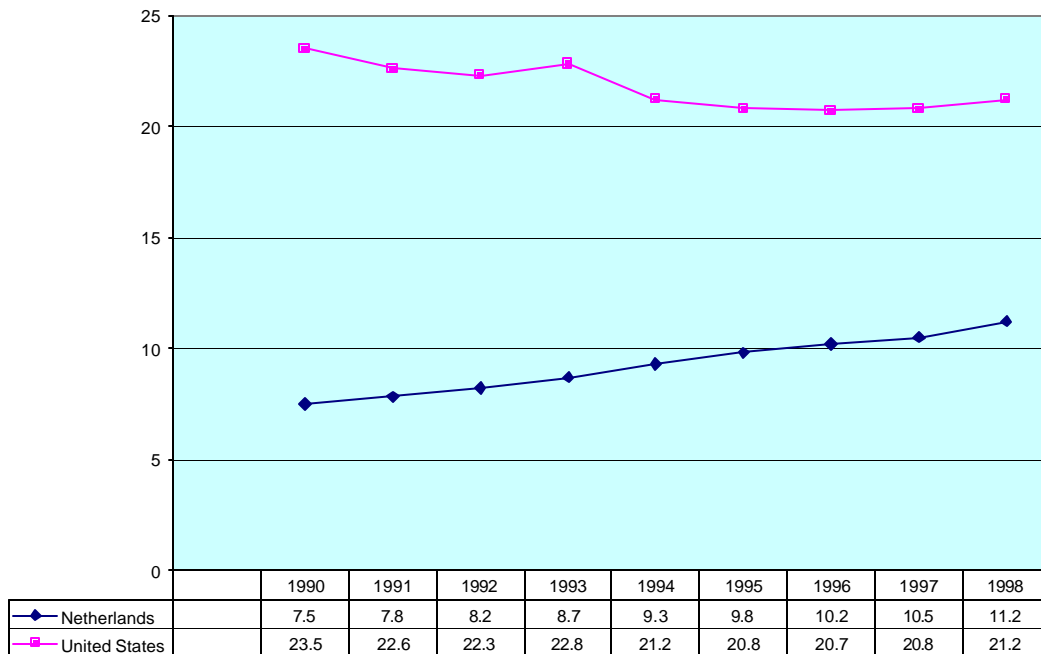
Source: Netherlands Institute for Health Care Research 2000.

**Table 2.2**  
**Practices of Midwives in the Netherlands, 1965-1990.**

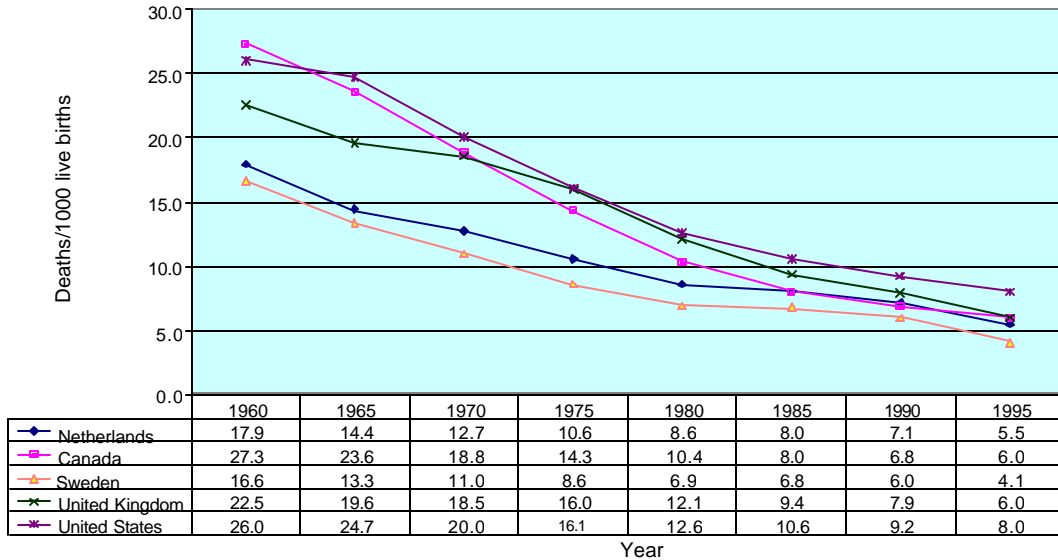
Distribution of Midwife-attended Births						
<i>Year</i>	<i>Percent of All Home-births</i>	<i>Percent of All Births Attended by Midwives</i>	<i>Percent of Homebirths Attended by Midwives</i>	<i>Percent of Births by Midwives Attended at Home</i>	<i>Percent of Births by Midwives Attended in Institutions</i>	<i>Percent of Births in Institutions Attended by Midwives</i>
1965	68.5	35.3	42.4	82.3	17.7	20.0
1970	57.3	36.7	46.5	72.6	27.4	23.7
1975	44.4	38.6	54.4	62.6	37.4	26.2
1980	35.4	39.4	58.5	52.6	47.3	29.1
1985	36.6	41.7	65.4	57.3	42.6	28.2
1990	32.1	44.8	71.2	51.1	48.8	32.4
1992	31.5	45.5	71.7	49.7	50.3	33.6

Source: Centraal Bureau voor de Statistiek, (CBS), The Netherlands.

**Figure 2.5** Cesarean Section Rates in the Netherlands and the United States.\*



**Figure 2.6**  
**Infant Mortality, 1960-1995, Netherlands, Canada, Sweden, United Kingdom and United States (deaths per 1,000 live births).**



Source: OECD data.

and approximately 7,000 practicing midwives.<sup>8</sup> Tallies of practitioners tell only part of the story. We also need to see what these practitioners are doing. Table 2.2 gives us this information by describing the work of midwives in the Netherlands between 1960 and 1992. Several trends in this table deserve further comment. Note that in the second half of the twentieth century midwives gradually assumed responsibility for a larger share of all births and moved from a minority to a majority position in attending home births.

Midwives also increased their role as attendants at birth in institutions. Perhaps the most dramatic change in this time period is the change in the place of work for midwives: in 1960, 82 percent of all midwife-attended births occurred at home but by 1992 this number had dropped to just under 50 percent. Another measure of how the system is working, and an oft-requested statistic about Dutch maternity care, is the rate of cesarean sections.

Figure 2.5 offers a contrast between the cesarean section rates in the Netherlands and the United States. Again we find the Netherlands and the United States at opposite ends, this time on the continuum that measures obstetrical intervention at birth.

Many who learn about the Dutch system, with its continued use of home birth and its low rate of cesarean section, are curious about the infant mortality rate. In the United States where home birth is considered dangerous and frightening, it is often assumed that high rates of birth at home must be associated with higher rates of infant death. Figure 2.6 shows that this is not the case.

### DUTCH ATTITUDES ABOUT THEIR SYSTEM

I arrived in the Netherlands naively assuming I would find unanimous support for their way of organizing maternity care. After all, the Dutch system is the darling of the alternative birth communities in other nations. Furthermore, it seemed reasonable to believe that, in the face of standard medical practices elsewhere, this odd system would not survive without near universal agreement about the wisdom of this approach to birth.

<sup>8</sup> The numbers of obstetrician gynecologists and midwives are not well monitored in the United States. These estimates are taken from the American College of Gynecologists ([www.acog.org](http://www.acog.org)) Rooks 1997; and DeVries 1996, (165-166). The number of midwives includes both Certified Nurse Midwives and non-nurse midwives.

I did discover a fair amount of pride in the system. It is not unusual for the national newspapers to carry stories that celebrate the fact that Dutch women, unlike their sisters in the rest of the industrialized world, are free to have their babies at home. In a full page story contrasting the different ways maternity care is delivered in the countries of Europe, the editors of *De Telegraaf* (July 22, 1995, TA1) the most widely read paper in the country, observed that, “[i]n England, France, Belgium and Germany birthing is treated more warily [than in the Netherlands]; it is not possible to have a baby at home [in these other countries] and every detail of pregnancy is treated medically.” The article goes on to say “the continued possibility to give birth at home [in the Netherlands] is the result of a well-organized system [where] midwives are trained to be more independent [and] have a high level of competence. The *NRC Handelsblad* described the peculiarities of Dutch birth in one of its weekly “*Profiel*” sections. One of the articles in the section acknowledged that the continued discussion of the relative advantages and disadvantages of home and hospital birth in the Netherlands is a bit *achte rhaald* (out of date): elsewhere in the Western world the preference for hospital birth long ago carried the day. But, evincing Dutch pride, the writers go on to note: “Unlike all other Western, industrialized countries, where the vast majority of women give birth in the hospital, women in the Netherlands...can choose to have their babies at home. Because of an infrastructure of well educated midwives and maternity aides, about 30 percent of Dutch women give birth at home” (*NRC Handelsblad* 1996, 29). As far as many Dutch people are concerned, the seeming anachronism of birth at home is a cause for celebration, not shame.

Pride in the system is also visible in the great patience maternity care providers in the Netherlands show toward the many international visitors who want a first-hand look at Dutch obstetrics. Gynecologists, midwives, health policy analysts, and researchers are regularly beset with requests from foreigners who are “planning a short visit to the Netherlands” and would like to “gather information on how the Dutch obstetric system works.” In response to a deluge of these requests the *Koninklijk Nederlandse Organisatie van Verloskundigen* or KNOV (Royal Dutch Organization of Midwives) created a *Buitenlands Bureau* (Foreign Office), staffed by volunteers, to whom all international visitors are directed.

This general pride in Dutch obstetrics is tempered among professionals who realize that many outside of the Netherlands do not fully understand how their system works and regard it as a bit “irresponsible or even barbaric” (*De Telegraaf* July 22, 1995, TA1). This feeling is captured in the following response to a letter of inquiry about Dutch obstetrics sent to a research institute in the Netherlands by a German physician who worked for the German Agency for Technical Cooperation. He expressed the desire to learn how Dutch ideas could be used to strengthen the position of community-oriented midwives in Germany. The Dutch researcher replied:

We thank you very much for your interest in the Dutch primary care obstetric system; it is an exception in the Western world and we are still very satisfied with it and even proud of it in Holland, but it is difficult to maintain a community oriented obstetric system when all the surrounding countries look quite suspiciously at this primitive way of putting children into the world.

Probing further I discovered that there are Dutch caregivers and researchers who find the Dutch system something of an embarrassment. There are members of the medical community in the Netherlands who believe the “old-fashioned” approach of Dutch obstetrics is, in fact, dangerous. A healthy skepticism about Dutch obstetrics outside of the Netherlands, but, interestingly, nearly all of the published critiques of Dutch maternity care come from within, from gynecologists practicing in the Dutch system (see, for example, T. Eskes 1980, 1992; T. Eskes et al. 1981; Lievaart and de Jong 1982; Hoogedoorn 1986).

I expected to find quarrels over the way the system was administered—and these do exist—but I did not expect to find caregivers arguing that midwife-assisted birth at home was

dangerous and should be abandoned. The presence of this argument suggested that there were two sciences of obstetrics: one that supported the Dutch system and one with a more conventional approach to pregnancy and birth.

### **RESEARCH IN OBSTETRICS: TWO SCIENCES OR “NO SCIENCE”?**

It was a Dutch gynecologist who told me that these two sciences of obstetrics could be found co-existing in the same city, at the two major universities in Amsterdam. At the University of Amsterdam there is a long tradition of support for midwives and for a noninterventionist approach to birth; just across town, the *Vrije Universiteit* (Free University) provides a much more medically inclined obstetrics. He explained:

At the Free University...obstetrics is: ‘there is a patient who is ill, who has to get a baby.’ And two kilometers away is the University of Amsterdam, where they say ‘Somebody who is pregnant is a very healthy woman. She has proved to be healthy because she’s got pregnant. And she’s only ill when she’s proved to be ill.’ Do you know what I mean?

*Yes, but how is it that one university has one attitude about pregnancy and another, in the same city, has a completely different opinion?*

The most important [reason] is that obstetrics is no science. Obstetrics is experience, is belief, is seeing wolves in the woods, is eh, depends on nature. But there are no... not many really, scientific papers about obstetrics. One of the nice examples is that there has been a controlled trial, a really good investigation, multi-center, in a lot of countries, about aspirin in pregnancy. In people with high blood pressure...about 7,000 people were involved in it, and what was the conclusion? Aspirin doesn’t work! If you phoned to a university hospital [and said] I have that and that women [with high blood pressure] what would you do? [At] the Free University, they say ‘Well, I should try aspirin. I’m not happy with that investigation.’ Because it was not what they expected. At the other hospital (University of Amsterdam) they would say: ‘No aspirin. They’ve shown now that it’s not effective.’

But it’s not science.

*You are convinced of that, eh?*

Yes. And we’re working on it; we’re working hard on it. But why isn’t it science? Because in obstetrics you can’t do an investigation like in other [specialties]. You can’t put a needle in the baby and give him a radio-diagnostic exam, and make photos of him, and put him out... And I think that’s the most important reason why such different opinions can exist.

This gynecologist went on to explain that obstetric science was especially difficult because it is impossible to do randomized clinical trials. One cannot randomly assign pregnant women to experimental and control groups, demanding, with no regard for a woman’s preference, that one mother give birth to her baby at home under the care of a midwife and another deliver at a hospital with physician assistance. He also pointed out, as did several other gynecologists and midwives, that even if one could find an ethically acceptable way to randomly assign women to different types of care, it would take a very large number of subjects to detect a difference in outcomes. Because women in Western societies are well nourished, well educated, and well housed, morbidity and mortality rates at birth are extremely small, regardless of the care given. In order to detect significant differences in birth outcomes it would be necessary to enroll tens of thousands of women in a study. As my respondent noted, this allows any study to be challenged:

[A critic can always say] the figures are too small. It’s not a real good investigation. It doesn’t respond to the [experimental] criteria. So, if you want to talk about it, you have to have very large figures. And you can’t go...you can’t work with this kind of figures.



Professor Kloosterman, a retired chair of obstetrics at the University of Amsterdam, agrees that obstetrics “is no science,” but sees the reason for extending beyond mere difficulties with experimental procedure:

[Obstetrics] has to do with the whole of life, the way you look at life, making objective discussion difficult. You are almost unable to split the problem off into pure science; always your outlook on life is involved.

Kloosterman went on to point out that because obstetrics is the only discipline in medicine where something happens by itself and—in most cases with no intervention, everything ends well—ideas about gender, health, and the body seem more salient in the practice of obstetrics.

Michael Klein’s research on episiotomies lends credence to Kloosterman’s observations. After working with midwives in Ethiopia and the UK, who “rarely employed episiotomy and yet obtained apparently good results,” Klein began to question the high rate of episiotomies in his native Canada; the rate at his hospital was in excess of 60 percent overall and greater than 80 percent for primiparous women. He decided to initiate a randomized controlled trial (RCT) to see if episiotomy offered the benefits its supporters in North America believed it did: less pressure on the fetal brain, improved maternal soft tissue support and pelvic floor function, and decreased delayed morbidity, such as urinary incontinence.

Encouraged by the publication of a large, midwifery-based RCT in England showing no benefit from a policy of routine use of mediolateral episiotomy, Klein began organizing his research but he failed to appreciate the inertia of established clinical practice. Not only did Klein and his colleagues have difficulty getting funded but they also had problems getting physicians to cooperate with the research protocol, and they struggled to get their results published.

Reviews of their research proposal were sharply divided. In one case two reviewers came to precisely opposite conclusions. One claimed: “The research questions are not relevant to clinical practice and the answers will not likely provide assistance in practice...” while the other asserted: “The research questions are relevant to clinical practice and the answers provided will be of assistance in the practice of obstetrics.” The Medical Research Council of Canada denied funding even though three of four reviewers were supportive.

Eventually they secured funding, but as the work progressed they found that certain physicians had difficulty following the research protocol and assigning women to the “restricted use” arm of the study. Even though all participating physicians had volunteered to be a part of the research and were well aware of its protocol, there were a number of doctors, most of who looked favorably on episiotomies, who were quick to find reasons to exclude a subject from the study (and thus do an episiotomy).

In spite of a higher than expected use of episiotomy in the “restricted use” arm of the study, Klein and his colleagues were able to complete their research successfully. They discovered that routine use of episiotomy *could not be justified*: it did not prevent perineal trauma, reduce pain, or improve sexual and pelvic floor outcomes. Anxious to get this news to widest possible audience they sent reports of their research to the leading journals in medicine, *The New England Journal of Medicine* and the *Journal of the American Medical Association (JAMA)*. But editors at these journals were unwilling to publish Klein’s work. Both rejected three separate papers and both editors sent only one of their three submissions out for external review. The paper sent by *JAMA* for external review garnered two positive reviews, a negative review that focused on statistical questions, and a strongly negative review that questioned the value of the study. This last reviewer accused Klein and his colleagues of having a “bias against episiotomy,” and went on to use a very poorly constructed study, one that compared outcomes for 1000 women who birthed in the 1930s with 1000 women who gave birth in the researcher’s clinic in the 1940s and 1950s (with no control for social, obstetric and demographic factors), to challenge the results of the paper. The authors were eventually able to get the results of their

work disseminated in specialty journals (Klein et al. 1992; Klein et al. 1994; Klein 1995), in the *Canadian Medical Association Journal* (Klein et al. 1995) and in the popular press (*The New York Times*, *USA Today*, *Toronto Globe and Mail*, *Reader's Digest*, *Parents Magazine*).

In reflecting on his experience with this research Klein attributes the difficulties he encountered to the fact that he was challenging well-entrenched views about birth (Klein 1995, 483, 487):

Getting funded and published proved to be difficult since we were questioning not only established views on episiotomy but also conventional views about birth...Those who struggle with paradigm change must be prepared for a long fight.

We in social science are not taken aback by these observations. We have long known that science is not scientific, but rather manifests all the predictable patterns of any other human enterprise. In science and in medicine ways of thinking and ways of practicing are based on “*what we all know*” and “*what we all know*” takes a long time to change. Decisions to fund and to publish are made on “particularistic” (who you know) not “universalistic” criteria (what you know).

### **A SOCIOLOGY OF OBSTETRIC SCIENCE IN THE NETHERLANDS**

A quick scan of the obstetrics text that is used in all training programs in the Netherlands is all one needs to discover that the science of birth in this country is peculiar. The text includes this statement:

A form of organization in which everyone is forced to go to the hospital for delivery as in the United States, seems first to have put at the center the interests and preferences of doctors. The segregation of healthy expectant mothers at home . . . has a number of advantages: it underscores the physiological character of the event and stimulates the self-consciousness and self-reliance of the women in labor; the cozy and homey nature of her environment, to which her husband also has total access, works in the same direction (Kloosterman 1981, 390, quoted in Hiddinga 1993, 69).

The same text also distinguishes “active” and “expectative” approaches to birth. The *active approach* assumes that all women, even those identified as “low risk” need “...intensive monitoring in a hospital, often need medication and pain relief, often or always need an episiotomy, and frequently end in an artificial delivery [ i.e., vacuum, forceps or cesarean].”The text continues:

Others, over and against this approach (and in no other country in the Western world is this group so large and so strongly represented as in the Netherlands) begin from the standpoint that birth, for a healthy, carefully selected woman, almost never requires intervention and that attendance at such a birth can remain limited to the offering of moral support and careful monitoring with simple equipment. This is the *expectative approach* to birth. (Kloosterman and Thierry 1977, 200)

The opinion of the authors about these two approaches is revealed in a later paragraph that more fully describes the expectative approach:

*The departure point* is that a physiologically occurring birth is optimal and cannot be improved. It is possible to intervene in certain aspects of this process (we can speed the process with drugs or instruments, we can use medication to lessen or eliminate the sensations of pain), but in the end we will always find that the obstetrical goal (a healthy child in the arms of a healthy, uninjured, happy mother) is not promoted by these interventions, but is, in fact, threatened by them.

Unlike any other obstetrics text intended for physicians who will practice in modern medical systems, this text also describes how to accompany a home birth and includes a list of the equipment needed (see Kloosterman 1977, 216-217). Clearly, Dutch students of gynecology are given a uniquely Dutch view birth and their role in it.

Maternity care in the Netherlands highlights the socially situated nature of science because the “Dutch way of birth,” described in this obstetrics textbook, requires a science that is at odds with conventional research in obstetrics done in other countries. Dutch obstetric policy rests on the separation of “physiological” and “pathological” pregnancies and births, assigning responsibility for the former to midwives and *huisartsen* in the “first line,” and to gynecologists in the “second line.” Elsewhere in the world of modern medicine *all* pregnancies are assumed to be latently pathological—obstetricians insist that pregnancy and birth can only be defined as “normal” in hindsight—requiring all birthing women to be hospitalized and in close proximity to specialist care.

Because the Dutch system separates physiological and pathological births, it is the only place in the world where one can test the outcomes of treating birth as “normal.” Recognizing this, the Dutch have done a good deal of evaluation research, assessing the safety of a selection system that:

1. gives primary caregivers, midwives and *huisartsen*, the responsibility of sorting out physiological and pathological pregnancies; and
2. assigns women expecting a “physiological birth” to the care of the *eerstelij*.<sup>9</sup>

As noted above, there are inherent difficulties with this research. Lacking the ability to do RCTs, researchers must content themselves with the use of existing statistics or with “prospective studies” that analyze outcomes based on an “intention to treat” design, where analyses are based on *planned*, rather than the *actual*, place of birth. This design is necessary because of the simple fact that most complicated births end up in the hospital; simply to compare home and hospital births builds in a negative bias toward the hospital and a positive bias toward home birth.

## DOING OBSTETRIC SCIENCE IN THE NETHERLANDS

### 1: SUPPORTING THE SYSTEM

Much of the research done on the Dutch obstetric system demonstrates its safety and is used by policymakers to defend and encourage the use of midwife-assisted birth at home. In the following few paragraphs I review some of the better known of these supportive studies.

Huygen’s (1976) research is an example of a very simple study using existing statistics. He compared rates of hospital deliveries and perinatal mortality rates for the United Kingdom and the Netherlands, showing higher rates of hospitalization and mortality in the UK. He also looked at changes in perinatal mortality rates *within* the Netherlands between 1953 and 1970 and discovered that: “the perinatal mortality of hospital deliveries went down from 65.0 to 33.8 (almost halved), but for home deliveries it went down from 21.6 to 6.9 (being less than one third the figure for 1953)” (p.245). He concludes that: “Studies have proved that by good case selection and good prenatal care it is seldom necessary to rush emergencies to the hospital and it is possible to obtain exceedingly low perinatal mortality figures...in home deliveries” (p. 248).

In 1981, Damstra-Wijmenga carried out a “prospective study” examining all births in the municipality of Groningen, comparing outcomes for those who chose a home birth with those who chose a clinic birth. Her analysis, published in 1982, showed lower rates of morbidity for both mother and child among those who had chosen to give birth at home (irrespective of actual place of birth).

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<sup>9</sup> While most of this work focuses on the safety of this system, some researchers have also studied the factors that influence a woman’s choice of birth place and caregiver (see Kleiverda et al. 1990; Wiegers and Berghs 1994).

Most widely known of the prospective studies of birth outcome in the Netherlands is the “Wormerveer research.” This study followed the 7,980 women who were clients at a practice of independent midwives in the Dutch town of Wormerveer between 1969 and 1983 (M. Eskes 1989; van Alten, Eskes, and Treffers 1989; M. Eskes, van Alten, and Treffers 1993). The research showed:

that the selection of pregnant women into groups at high and low risk is possible using the relatively modest means available to the midwife...the data available on perinatal mortality and infant morbidity warrant the conclusion that within the scope of the Dutch system of obstetric care it is possible to achieve very good results with midwifery care for selected women (van Alten, Eskes, and Treffers 1989, 660, 662).

Berghs and Spanjaards (1988) followed 1,034 “normal pregnancies” (as defined by the “Kloosterman list”) that were attended by midwives (N=638), *huisartsen* (N=128) and gynecologists (N=268). In an effort to overcome the research problem presented by very low morbidity and mortality rates associated with normal pregnancies, the researchers measured outcomes using a neonatal neurological investigation developed by Prechtel (1977). Prechtel’s scale allowed closer observation of neonatal condition and thus introduced some variability into birth outcomes. In this study 84.6 percent of newborns were judged “normal,” 12.3 percent were classified as “suspect” and 3.1 percent were considered “abnormal.” When the researchers analyzed neonatal outcome by caregivers, they found no differences between the three groups, leading them to conclude that there were no significant differences in the outcomes of births managed by midwives, *huisartsen*, and gynecologists. They did discover that women under the care of a gynecologist were more likely to have experienced a medical intervention and that their infants had higher rates of morbidity.

The research of Wiegers et al. (1996) looked at the outcomes of 1,836 births accompanied by midwives at home and in the polyclinic. This was a prospective study comparing results on the basis of planned location of birth. To measure birth outcome, the researchers constructed a “perinatal outcome index” consisting of twenty-two items on childbirth, nine on the condition of the newborn, and five on the condition of the mother after birth. In their analysis the researchers separated primiparous and multiparous women. They discovered that location of birth made no difference in outcome for primiparous women, when controlling for social and medical background. For multiparous women, perinatal outcome was significantly better for planned home births than for planned hospital births, with or without control for background variables.

Perhaps because of the language, very few non-Netherlanders have studied the maternal and infant outcomes of the Dutch way of birth. One exception is Marjorie Tew, an epidemiologist who has conducted research on the safety of birth. Assuming the shift to hospital birth that occurred in the first half of the twentieth century in England and elsewhere was based on solid medical grounds, Tew assigned her students to do an epidemiological study of home and hospital birth. She was shocked to learn that there was no evidence that hospital birth was safer; in fact, it appeared that home birth was the safer of the two options (Tew 1995). Her work in England inspired her to look at the situation in the Netherlands and, in a detailed analysis of statistics provided by the Dutch *Centraal Bureau voor de Statistiek*, she demonstrated that: “for the 98.2 % of babies born after 32 weeks gestation, mortality is nearly 12 times lower if the birth takes place under midwives’ care in hospital or at home than under obstetricians’ care in the hospital” (Tew and Damstra-Wijmenga 1991).

These several studies present overwhelming evidence that Dutch obstetrics is safe, evidence that is used in the writing of Dutch obstetric textbooks and in the creation of Dutch maternity care policy. But this research is at odds with obstetric science and practice outside the Netherlands. As Tew and Damstra-Wijmenga (1991, 55) point out, these studies “[contradict] the claims on which the organization of maternity services in most developed nations is now based, namely, that childbirth is made so much safer by the application of high technology that only this option should be provided.” As such, these studies are not easily digested elsewhere. The

researchers involved in the Wormerveer study are aware that their work would generate skepticism on the part of obstetricians elsewhere. Commenting on the research in JAMA, they noted:

Midwives were primarily responsible for the selection procedure, which was carried out with the relatively modest means available to them. More sophisticated methods of investigation, such as ultrasound and cardiocography, were used not routinely but only occasionally, after request or referral of the midwife. *Some consider this a weak point of the system, because abnormalities are detected by professionals who are not, by their training and experience, experts in these abnormalities.* (Treffers et al. 1990, 2208, emphasis added):

The authors are quick to remind their readers, however, that the evidence does not support these worries about the system:

The study demonstrates that it is feasible to distinguish between a group of pregnant women at high risk and a larger group at low risk. Moreover, the results indicate that midwives are fully competent to attend low-risk deliveries.

## **DOING OBSTETRIC SCIENCE IN THE NETHERLANDS**

### **2: CRITIQUING THE SYSTEM**

Despite the evidence offered by these studies, the tradition of obstetric science elsewhere leads to a dismissal of the Dutch way of birth. Dutch obstetrics is seen as an anomaly that continues to exist because of the peculiar geography of the Netherlands, or its social homogeneity, or believe it or not, the hardiness of Dutch women. As I suggested above, this skepticism exists not just among non-Netherlanders. Several members of the obstetric research community in the Netherlands remain unconvinced about the safety of birth at home and risk selection done by midwives and *huisartsen*. In fact, the most pointed criticism of Dutch maternity care comes from Dutch gynecologists.

In the late 1970s, Hoogendoorn issued a strong critique of Dutch maternity care, based in his analysis of existing statistics. In his article, “The Correlation between the Degree of Perinatal Mortality and the Place of Birth: At Home or in the Hospital,” published in the *Nederlands Tijdschrift voor Geneeskunde (NTvG)*, Hoogendoorn (1978) showed that provinces with high rates of hospitalized births also had the lowest rates of perinatal death, leading him to conclude:

here is some reason to expect that a further increase of the hospitalization of parturient women will result in a progressive decrease of perinatal mortality, especially in those provinces where the percentages of women who deliver in hospital are relatively small (p.1177).

Hoogendoorn’s article generated a number of responses. In an article in the same issue of the journal, Kloosterman (1978) replied that this type of research suffers from the problem of spurious correlation. He agreed that there *is* a correlation between increased hospitalization and lower perinatal mortality, but pointed out that the inflation of the guilder is strongly correlated with decreasing infant death as well. Kloosterman went on to look at the correlation between the degree of hospitalization and perinatal mortality in the thirteen largest cities in the Netherlands and found inconsistent results: perinatal mortality decreased in cities where the percent of hospital births declined as well as in cities where it increased. After the article was published there were numerous letters to the editor of the journal arguing for and against Hoogendoorn’s conclusions.

In 1986, Hoogendoorn published a second challenge to the safety of Dutch obstetrics in the *NTvG*. In an article entitled, “Impressive but Nevertheless Disappointing Decline of Perinatal Mortality in the Netherlands,” Hoogendoorn used existing statistics to compare the rates of decline in perinatal mortality in several European countries between 1970 and 1984. He concluded:

After 1940 and especially after 1950 the perinatal mortality rate in the Netherlands has shown a remarkable decrease, to the extent that the rate for 1982 was only 25% of the 1940 figure. Since 1982 however, this rate has stagnated. The proportion of deliveries at home has also decreased progressively until approximately 1980, but since has remained constant. In virtually all European countries the perinatal mortality has decreased more than in the Netherlands, which country has lost its relatively high favorable position. Reconsideration of the

problems of obstetrical care and particularly also the desirability of home vs. clinical delivery appears necessary (p. 1439).

This article as well as Hoogendoorn's suggestion that the Dutch consider changing their maternity care policy from "birth at *home*, unless..." to "birth in the *hospital*, unless..." (p. 1439, emphasis added), created a heated debate in the media and in medical journals. For several months, the "Letters to the Editor" pages of the *NTvG* were filled with responses to Hoogendoorn, most of which were critical of his analysis.<sup>10</sup> Many critics pointed out, as they had with his first article, that correlation does not imply causation. Verdenius and Groeneveld (1986) noted that if the disappointing decline was indeed the result of place of delivery, then the trend would have to be completely attributable to the low risk women who choose to deliver at home, a fact that had been shown to be false in several studies. Other critics suggested that Hoogendoorn's analysis was flawed because:

- ? it failed to consider the varied definitions of perinatal mortality used in Europe (Kloosterman 1986; van Bavel 1986);
- ? it took no account of higher perinatal mortality rates among ethnic minorities (Gelderman-Vink 1986; Cranendonk 1986);
- ? the analysis did not hold if one looked at other countries where total hospitalization of birth was associated with slowed declines in perinatal mortality (Verdenius and Groeneveld 1986).

Hoogendoorn defended his analysis against these charges in a series of five letters. The debate was so intense that the editors of the *NTvG* felt compelled to explain their decision to publish the original article, claiming that Hoogendoorn's analysis was done carefully and responsibly. They went on to express some surprise that so few letter writers had challenged Hoogendoorn's central premise: that the perinatal mortality rate in the Netherlands was lagging behind other European nations. Most responses focused on his suggestion that the "disappointing decline" was the result of home births, leading the editors to conclude that Dutch maternity care policy was based on emotional, not rational, grounds. The editors closed the pages of the journal to the debate in 1987, insisting that a half year of discussion was enough.<sup>11</sup>

All studies that use existing statistics, whether supportive or critical of the practice of obstetrics in the Netherlands, are subject to the kinds of criticism faced by Hoogendoorn. In an effort to find a more scientific way of evaluating the Dutch way of birth, a team of researchers from the *Vrije Universiteit* and the *Katholieke Universiteit, Nijmegen*, two schools known for their critical stance towards home birth and midwifery, developed research designs that used more subtle outcome measures. This team, which included doctoral students Geert Berghs and Esmerelda Spanjaards, reasoned that in the absence of discernable symptoms of morbidity one might find signs of less than optimal outcomes, measurable by scientific instruments and scales.<sup>13</sup> As mentioned above, they settled on measures of umbilical cord blood pH and neurological scores. In a series of articles and papers these researchers proposed, tested, and defended their choice of

<sup>10</sup> In a 1988 letter to researcher Edwin van Teilingen, Hoogendoorn stated that the editors of the *Nederlands Tijdschrift voor Geneeskunde* sent him a Christmas gift in acknowledgment of the fact that his article generated the largest number of letters to the editor in "human memory" (van Teilingen 1994).

<sup>11</sup> See van Teilingen 1994, pp. 181-194, for a more complete discussion of the debate over Hoogendoorn's 1986 article.

<sup>13</sup> According to one of my informants, this line of research – looking for differences in morbidity based on pH of cord blood and neurological assessment – received significant funding support because one of its advocates, Stolte, was chair of the *Preventiefonds*, a major source of research dollars for public health.

these measures as a fitting way to look more closely at the outcomes of home and hospital births (de Jong 1975; Stolte et al. 1979; Van den berg-Helder 1980). They suspected that the management of birth at home would result in more acidotic children. If proved true, this would be bad news for supporters of the Dutch system because acidosis in fetuses is associated with growth retardation and damage to the central nervous system. In a paper presented at a conference in 1976, Stolte, van den Berg-Helder, Van Kessel, Kurver, Njikiktjien, and Voorhorst, researchers advocating this new and more scientific approach to the study of the outcomes of Dutch maternity care, demonstrated a correlation between low pH values of umbilical cord blood and compromised neuromotor skills.

During the 1980s several studies were done using these outcome measures, most of which showed specialist care in hospitals to be superior to birth at home with midwives: on average babies born at home and/or under midwife care were more acidotic and had poorer neurological scores (Eskes, Jongma, and Houx 1981; Lievaart and de Jong 1982).<sup>14</sup> The study of Berghs and Spaanjards (1988), mentioned above, was a glaring exception to these findings. You will recall that in seeking to understand these contrary results, Berghs and Spaanjards found that infants whose mothers had normal pregnancies displayed no practitioner- or location-of-care-based differences in neonatal neurological optimality scores. Stolte and Eskes, directors of this project, claimed that a finding of “no difference” proved the superiority of specialist care because the population of women who choose care from gynecologists were more likely to smoke, were less educated, and required more interventions. In 1992 Eskes published an article formally making this argument, noting that there were no differences in neurological scores between groups “despite the lower socio-epidemiologic profile” of women under the care of gynecologists. In an interview Eskes explained his position:

...finding no difference could obscure something. It could indeed obscure the fact that women who vote for [the hospital] do have some disadvantages, biologically, that they feel by intuition, for instance smoking. Because they feel by intuition that it's no good, that the fetus will be growth retarded, for instance and therefore they [prefer] to do delivery here. So the sociologic profile of the groups is not similar. There's where your profession [i.e., sociology] comes in. To make a clear-cut picture of women's profile in regard to their choice of a clinical delivery. There's a need for a good scientific approach and description in this country. I think that that's very important because that came out of the Berghs and Spanjaards study.

*You think that kind of study has not been done yet, I mean with the exception of Berghs and Spanjaards?*

Yes, but we are no sociologists so what we just noticed was smoking habits, the lengths [i.e., heights] of women, so women who delivered here were shorter. That is associated with a smaller pelvis. So a small woman knows by instinct that she has a small pelvis and that the baby could have problems...And also relative infertility, so for the women who delivered here [in the hospital], the wish to become pregnant and the actual realization, that time interval, was longer in the hospital group. So let's put it this way: there are some indications that you can describe a subset of women in the low risk group to be different when they choose for hospital delivery including with a midwife.

The internal arguments for and against the Dutch way of birth were summarized in 1980 when Professors Tom Eskes and G. J. Kloosterman were invited to a debate the best place for birth in the pages of *Controversen in de geneeskunde* (Querido and Roos 1980). Leaving no doubt about where he stood, Eskes opened his essay with the oft-quoted but unattributed epigram: “Labor is normal only in retrospect.” In his “plea for birth in the hospital,” Eskes went on to argue:

- ? that home birth will be always be plagued by less than optimal monitoring;
- ? referrals from midwives to specialists during labor contribute significantly to the perinatal mortality rate;

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<sup>14</sup> These studies are among the few analyses of Dutch obstetrics published in English language journals. I discuss them in more detail in the next section.

- ? midwives and *huisartsen* are not skilled in recognizing “small size for gestational age,” and “prematurity,” both of which are major causes of perinatal morbidity;
- ? electronic fetal monitoring should be used more regularly.

Kloosterman countered by making a “plea for the possibility of birthing at home,” in which he claimed:

- ? selection and rapid and safe transfer to the hospital are possible;
- ? the elimination of home birth would give a monopoly to the specialists and would allow technology to control the practice of obstetrics;
- ? the elimination of home birth would create an “underground” of less well trained practitioners;
- ? hospital births are more costly;
- ? unmedicated birth brings great advantage to mother, father and family;
- ? medication and other interventions bring risks that should not be introduced to all women.

It is fitting that this debate took place on the pages of a Dutch anthology about their medical care system. Most debates over the wisdom of the Dutch maternity care system have been confined to the Dutch language literature. Only rarely has the internecine arguing spilled over into English language journals, and on most of those occasions the arguments are typically limited to short articles or letters to the editor (for example, Mascarenhas et al. 1994; Clarke et al. 1994). Given the position of Dutch obstetrics in the larger scientific community, it is instructive to look more closely at those rare occasions when English language medical and obstetrical journals published research on the maternity care system of the Netherlands.

### **DOING OBSTETRIC SCIENCE IN THE NETHERLANDS.**

#### **3: RECEPTION OF DUTCH OBSTRETIC SCIENCE OUTSIDE THE NETHERLANDS**

English language reports and articles on the Dutch way of birth have appeared in a wide variety of professional journals and periodicals. The majority of these adopt either a neutral position—simply describing the Dutch system, its history and/or its functioning—or a positive stance, i.e., presenting evidence of the safety and success of the Dutch maternity policy. There are only a handful of English language articles that provide evidence that the system is not working well. However, favorable and unfavorable reports are not equally distributed. Most of the favorable reports are found in nursing journals, journals of social science or medical history, or health services journals, while all of the negative reviews of maternity care in the Netherlands are found in medical journals. The few positive reports are found in British medical journals, where there is a history of openness to well designed research, regardless of the outcome (Treffers and Laan 1986; Wiegers et al. 1996) or in the *European Journal of Obstetrics, Gynaecology and Reproductive Biology* (formerly the Dutch language journal of obstetrics and gynecology).<sup>15</sup> Only one favorable description of the Dutch system is found in the *Journal of the American Medical Association (JAMA)*, but it was a limited comment in a review of various studies of maternity care in the Netherlands under the heading, “Letter from Amsterdam” and not a scientific article (Treffers et al. 1990).

There are three scientific articles in the English language literature that challenge the safety of the Dutch way of birth. All three employ the research method developed in Nijmegen under the supervision of Eskes and Stolte. In 1981, Tom Eskes, W. Jongsma, and P. C. W. Houx published their study comparing the pH of umbilical cord blood taken from births occurring at home and at the hospital in *The Journal of Reproductive Medicine* (an American journal). Six

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<sup>15</sup> Recall that Klein was encouraged by articles from British periodicals that reported episiotomies were over-used.



midwives and one *huisarts* agreed to participate. Eighty-five home births that they accompanied were matched (for parity, age, absence of medical indication, duration of second stage no medication and birth weight percentile) with 85 hospital births (28 primiparous women and 57 multiparous women). The researchers found significant differences between the groups, concluding that: “It appears that delivery in the hospital with continuous fetal monitoring favors the birth of less acidotic children.”

In 1982, *The American Journal of Obstetrics and Gynecology* published a similar study by Lievaart and de Jong. In this research 85 first births accompanied by midwives (65 at home and 20 in the hospital) were compared to 27 first births accompanied by gynecologists in the hospital. Both groups were considered “normal” births according to the obstetric indications list. To evaluate outcomes, the pH of cord blood was tested and the newborn was assessed using Prechtl’s method of neurological examination. As with the study of Eskes, Jongsma, and Houx (1981), the babies born at home did not fare as well as their hospital-born counterparts. Not only were the neurological scores worse—10 of the infants born at home were classified as “non-optimal,” while none of the hospital infants were—but also the pH values. The authors concluded:

The outcome advances more or less definite evidence that the obstetric system prevailing in the Netherlands, although concomitant with satisfying neonatal mortality figures...is not adequate from the point of view of neonatal morbidity. The morbidity of the new born infants delivered under the care of midwives of pregnancies deemed by them as normal is without any doubt much higher than expected on the basis of the philosophy of the underlying system of obstetric care. The fallacy of the system is not rooted in the place to be born, e.g., home or hospital. It is also not preponderantly related—at least not in the present study—to the lack of capability of the midwives to select abnormal pregnancies among those pregnancies originally thought to be normal. The better outcome of infants born in the hospital under the care of a gynecologist is most probably (also) due to the tools of surveillance used in the supervision of deliveries, i.e., electronic monitoring and determination of fetal scalp blood pH and the capability of performing a cesarean section (p.385).

This study, which appeared in the best-known American journal of obstetrics, presented a clear challenge to the Dutch way of birth. Treffers and his colleagues responded in a letter to the editor, which was not published until a year later. They criticized Lievaart and de Jong for:

- ? making conclusions about “the system prevailing in the Netherlands” based on research from so few cases from one region;
- ? misreporting the results of studies available only in Dutch;
- ? sloppiness in their research: pH values were given for only 81 of the 85 cases in the midwife group and 26 of 27 cases in the gynecologist group. There was no control over when the cord was clamped or how long the blood was stored before pH analysis was done—midwives are more likely to clamp late and late clamping lowers the cord blood pH as does prolonged storage of the blood;
- ? biased selection of cases.

The authors closed their letter with this statement:

We conclude that the evidence produced by [Lievaart and de Jong] is insufficient to support their pretentious statements and that the system they are propagating implies a very high level of active intervention, which, in itself, could have undesirable consequences (Treffers, van Alten, and Pel 1983, 872).

Lievaart and de Jong (1983) defended their research in a reply published in the same issue. In most cases they responded adequately to the critique, but their response to the criticism of how they collected and handled the cord blood contains a suspicious non sequitur:

The laboratory housing the Corning 175 automatic pH and blood gas system were (sic) alongside the delivery rooms used by the midwives and the gynecologists. The acid-base measurements were performed by the same technicians immediately after the arrival of the blood. Consequently, the time intervals between the sampling of the cord blood and the assay did not differ between the gynecologist group and the midwife ambulatory group. Since the acid- values in the cord blood of the neonates delivered by the midwives in the hospital ambulatory unit did not differ from the values determined in the cord blood of the neonates delivered by the midwives at the patients' homes we can safely assume that the influence of different transport and storage times was of minor importance.

Simply having the laboratory adjacent to the delivery room does not insure that the time intervals did not differ between the two groups. In fact, the similarities found in pH values for home and hospital deliveries of midwives are likely to be the result of the fact that midwives practice the same way at home and in the hospital. By not reporting the actual time intervals for midwives and gynecologists, Lievaart and de Jong acknowledge that they did not keep adequate records of clamping and storage times.

Unhappy with the results of this study, Treffers and his colleagues replicated the research paying careful attention to the collection and storage of cord blood. In one study the researchers measured the effects of various techniques of collecting and storing cord blood: they discovered slight variations in the time and temperature associated with storage had significant effects on pH levels and concluded that the only reliable way to measure the pH of cord blood is to puncture the cord immediately after birth, store the samples on ice, and test them within 30 minutes. In a second study they used these methods to repeat the work of Lievaart and de Jong. When researchers took pains to assure that cord blood samples from the clients of midwives and gynecologists were treated in an identical manner, the results were opposite to those reported by Lievaart and de Jong: women attended by midwives had significantly *higher* values for their cord blood pH. The researchers concluded that, "This study shows with respect to umbilical pH values, that there is no cause for concern about the Dutch obstetric system in which midwives take care of pregnant women and deliveries" (Knuist , Eskes, and van Alten 1987, 364). Anxious to make these results known to the readers of *American Journal of Obstetrics and Gynecology*, Treffers and his colleagues attempted to get this research published there, but neither study was accepted for publication. Instead, the first (Pel and Treffers 1983) was published in the *Journal of Perinatal Medicine*, an English language journal published in Germany, and the second (Knuist , Eskes, and van Alten 1987) was accepted by the *NTvG*.

The third English language article that challenged the Dutch way of birth was published in the *International Journal of Gynecology and Obstetrics*, the official journal of the International Federation of Gynecology and Obstetrics. In this article, T. K. A. B. Eskes (1992) presented no new data but reviewed eighteen existing studies—eight in Dutch and ten in English. He defends the larger Nijmegen study against the research claim of Berghs and Spanjaards, that there was no difference in morbidity between practitioners, asserting that the clients of gynecologists had a "lower socio-epidemiologic profile" (p. 167).

Supporters of the Dutch way of birth see the publication decisions of editors of English language medical journals, especially in the case of Lievaart and de Jong's research prejudicial against the maternity care system in the Netherlands. In seeking to get their studies supportive of the Dutch way of birth published in English language medical journals, Dutch researchers encountered the same problems experienced by Klein and Tew. Editors of these journals only accept scientific research when it agrees with the practices espoused by the readership of the journals. Idealized accounts of science suggest that it stands outside of custom, that it is not influenced by "they way things have always been done." But here we see that accepted definitions of what is "normal" in pregnancy determine what is accepted as good science. Reviewers for the *American Journal of Obstetrics and Gynecology* accept the work of Lievaart and de Jong and reject the work of Treffers because of what they assume to be true about birth.

They are unwilling to let research evidence influence their belief that ‘birth is normal only in retrospect.’<sup>16</sup> Van Teijlingen points out that in the Netherlands the same process is at work, but it produces opposite results. He quotes one of his interviewees:

Eskes argued that Lievaart and de Jong’s article was rejected [for publication] in the Netherlands for ideological reasons and accepted in the US for scientific reasons. Whilst Kloosterman maintained that it was rejected in the Netherlands for scientific reasons and accepted in the US for ideological reasons (van Teijlingen 1994, 180).

Eskes, the leading member of the loyal opposition, complains that his Dutch colleagues do not take his work seriously and that he is often excluded from discussions about maternity care policy. In an interview he told me that he was asked to review a recently published anthology about Dutch maternity care, *Successful Home Birth and Midwifery* by Abraham-van der Mark (1993). When I asked him why he was not asked to write for that book, he replied:

...They always invite Treffers from Amsterdam and his previous man Kloosterman...what they do not do is invite people who have quite another obstetrical training. Now you might argue what my training is, but my training was at Case-Western, a research university in Cleveland, which is in the US, where I, as a youngster did my PhD on physiology .... and that gives you a rather hard scientific attitude towards your profession.

[When I look at scientific work I want to know] what study you did, and what was the outcome of the study. So that everybody can judge that what you *feel* is exactly the *truth*. I will read that book (i.e., *Successful Home Birth and Midwifery*) with that eye and if there are no facts and figures then I have seriously to consider [if I will] review that book.

### **SUPPORTING AN ALTERNATE SCIENCE OF BIRTH**

The two sciences of obstetrics in the Netherlands provide a mirror image of the two sciences of obstetrics that exist in other modern medical systems. For the Dutch, mainstream obstetric science supports a non-interventive approach to birth; in other modern medical systems mainstream research in obstetrics demonstrates the need for intervention. The very presence of two sciences of obstetrics—in any medical system—suggests that the gynecologist quoted at the outset of the chapter is correct: obstetrics is “no science.”

But, of course, no science is truly scientific. When we recognize that science rests on a non-scientific foundation we can begin to look more closely at the forces that shape the scientific enterprise. In my analysis of the way obstetric science gets done in the Netherlands and elsewhere we notice a close association between science and practice. Mainstream obstetric science follows mainstream obstetric practice: an expectant approach to birth produces a science that proves intervention to be unnecessary and an interventive approach to birth generates a science that demonstrates the need for monitoring and intervention. The assumed relation between science and practice is turned on its head: practice is not based on science rather science is based on practice.

Consider the research of Pel and Heres (1995). In their study of obstetric intervention rates, they discovered that physician intervention in birth was best predicted not by the clinical condition of the mother, but by characteristics of the gynecologist and by hospital policies. They found that, controlling for the signs and symptoms presented by the mother, the likelihood of interventions increased when electronic fetal monitoring was used routinely and decreased in units that employed midwives. If obstetric practice was governed by science we would expect the condition of the mother, measured by signs and symptoms, to predict the use of interventions.<sup>17</sup>

<sup>16</sup> One of my interviewees told me that the *American Journal of Obstetrics and Gynecology* refused to publish an article by Berghs and Spanjaards about their study that showed extremely low inter-observer agreement about the interpretation of electronic fetal monitoring recordings taken during the second stage of labor (Berghs and Spanjaards 1988, 129-140). The letter of refusal stated that it would be “immoral” to publish these results.

<sup>17</sup> Zondervan et al. (1995) arrived at similar conclusions in their study of the use of episiotomy. While fewer

Why is mainstream obstetric science in the Netherlands the opposite of mainstream obstetric science in other countries? In order to answer that question we must explain why the practice of obstetrics is so different there; we must look to the social structures that give rise to its maternity care system and to the cultural values that generated and sustain those structures. In seeking to understand the rejection of Dutch obstetric science studies in mainstream medical journals published outside the Netherlands, we must look to the social structures and cultural ideas that shape the practices in those societies.

Those analyses are best left for another paper, but in brief, the persistence of midwife attended birth at home in the Netherlands is best understood as a product of the organization of health care, Dutch politics, and Dutch cultural ideas about home, women, family, medicine, and science. Taken alone, none of these elements can explain the uniqueness of obstetrics in the Netherlands but examined together they help us understand Dutch decisions about the location of birth.

Hingstman (1994) calls our attention to three structural features of Dutch health care that support home birth: (1) the special position of the midwife, (2) a screening system for high risk pregnancies, and (3) a well organized program of maternity home care. Midwives, the primary attendants at domiciliary deliveries, have a well established and “protected” place in Dutch health care. Education and certification began early for Dutch midwives, beginning in the second half of the seventeenth century when local medical societies set up training programs, examinations, and certification for midwives. In 1818, the first national law regulating midwives was passed, affirming the place of midwives as legitimate and appropriate providers of care at birth; in 1865, a law defining the practice of medicine established midwives as independent medical practitioners (Marland, 1993, 26-29). Just over three quarters of a century later, in 1941, a law was passed creating the current Dutch health care system that gave midwives the “*primaat*,” referred to by some as a “monopoly over normal obstetrics” (Abraham-Van der Mark 1993, 4). The law stipulated that when pregnancy and birth proceed normally (physiologically), insurance would pay only for the services of midwife. In locations where midwives are unavailable, a general practitioner may be employed. Recently, the *primaat* has been withdrawn, but the organization of Dutch obstetrics shows a clear preference for domiciliary care offered by midwives and general practitioners over the high-tech ministrations of specialists in hospitals. These structural features of Dutch health care explain the continued use of home birth in the Netherlands but we are left with further questions: Why is home birth a practice that some sectors of Dutch society, including the government, feel is worth preserving? The Dutch have a variety of cultural ideas that distinguish them from neighboring lands, ideas that have important consequences for their view of the appropriate way of accomplishing birth.

The distinctive Dutch views of the “family” and of the role of women in the family help shape the process. The Dutch were the first among modern nations to experience the “nuclearization” of the family. According to van Daalen (1988), the Dutch family nuclearized in the late seventeenth and early eighteenth centuries, earlier than the other nations of continental Europe. Furthermore, as the wives of farmers, fishers and traders—the primary occupations in the Netherlands—Dutch women have played an important and strong role in the family, a fact reflected in their historically high fertility rates and their low rates of participation in paid labor. For example in 1990, 41 percent of Dutch married women participated in the labor force as compared to 79 percent of Swedish, 72 percent of Danish and 60 percent of

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episiotomies are done in the Netherlands than surrounding countries, the risk of receiving an episiotomy there is not solely related to the condition of the mother and baby. After adjusting for possible confounding factors, gynecologists did more episiotomies than midwives and more episiotomies were done in large, non-university hospitals than in university hospitals.

Belgian married women (Pott-Buter 1993). These unique features of the Dutch family create and maintain a preference for home birth.

Domestic confinements also fit well with Dutch ideas about home. According to Rybcincski (1986), the Dutch are responsible for our current notions of “home” as a place of retreat for the nuclear family. The Dutch were the first to develop single family residences—small, tidy, well-lit homes—and the importance of the nuclear family, coupled with the domestic role of women and the tidiness of their homes, made home the logical place for birth. Home birth is further supported by Dutch ideas about medicine, science and notions of “thriftiness.” Moreover, they are not quick to seek medical solutions to bodily problems (Van Anandel and Brinkman 1997) and have very rational ideas about the use of science in the formation of public policy, experimenting with new approaches and testing their efficacy and efficiency. The government has funded many studies (e.g. Wiegers 1997) to examine the safety, cost, and desirability of home births and has made policy decisions based on those studies. The most recent of these openly acknowledges that the study was initiated because of a concern that “the steadily decreasing number of home births...threatened to diminish the home birth rate to a level where home birth would no longer be a viable option [and that] the increasing number of hospital births would lead to unnecessary medicalisation of pregnancy and childbirth...” (Wiegers 1997, 1).

Recent developments suggest that the cultural conditions that have helped home birth to survive in the Netherlands are changing. Whether the ethnically more heterogeneous and culturally more fragmented Dutch society of the new millennium will support the continued existence of home birth remains to be seen. Interviews with expectant parents show that Dutch attitudes toward birth are becoming more like those in other countries. When asked why they chose a *polikliniek*, parents expressed an attitude toward home and technology more like those in surrounding lands. The most common reasons for not staying home for birth are: “too much mess” and the desire to have emergency equipment readily available (Wiegers 1997). These developments suggest there may be further decline in home birth occurrence. However, working against these trends are campaigns sponsored by the government, by Dutch midwives and by consumer groups. It is this active role played by the government and midwives that has prevented a faster and more complete turn from home birth. The story of home and hospital birth in the Netherlands reminds us how the delivery of maternity care and the science that supports obstetric practice are shaped by the combination of ideas about birth and the structure of the health care system.

## CONCLUSION

Implicit in the story of Dutch obstetric science is an important, but little studied question: What happens when the culture of science meets the national culture? How is this confrontation settled? The practice and science of obstetrics have a universalizing quality. This is why nearly all obstetricians outside the Netherlands accept the idea that “birth is normal only in retrospect.” How have the Dutch resisted this essential premise of obstetrics? It is true that this idea did not fit with their practice policies, but that was true elsewhere as well. In those places the new technologies of monitoring and intervention were accepted and helped to generate the belief that birth is essentially risky. In the Netherlands this did not happen. I believe an important reason for the failure of the culture of obstetrics to overwhelm the medical culture of the Dutch was the presence of the *zuilen*, or “pillars,” in Dutch society.<sup>18</sup> The campaign of obstetric science to hospitalize and medicalized

<sup>18</sup> From the late 1800s until the 1960s, Dutch society was organized in *zuilen* or “pillars.” Gladdish (1991, 28) explains: “Originating in the 1880s when confessional movements sought to mobilise their followers into self-conscious communities, [pillarization] became in the 1920s the dominant and most conspicuous feature of social organisation. Trade unions, educational bodies, welfare schemes, cultural associations, and the media, all became orchestrated on the basis of would-be hermetic pillars topped by political parties.” Hooker (1999, 46) adds: “At the height of *verzuijing* (pillarization), almost all social activities were voluntarily segregated on the basis of

birth occurred from the 1910s to the 1930s, a time when Dutch society was strongly pillarized. In this pillarized society, the authority of science was weakened. The proclamations of science, especially of medical science, had to be filtered through the institutions of the different *zuilen*, through their educational systems, their hospitals, their “cross associations,” and their media. In other societies science could enter unmediated, but in the Netherlands, science had to be worked into the identity and organizations of these different pillars. In the case of birth, the rituals, and customs that attended the event created even more resistance to a standardizing science that had no room for the core values of each pillar.

Finally, the Dutch case forces us to think about the interplay between political systems and science. In the Netherlands, the health care system is not as subject to the political power of professions and the health care industry. Unlike the United States, where the free market system encourages the expansion of health care markets *and* of costs, there is a built-in incentive for managing costs in the Netherlands. In a health care system that is based on the “free market,” science can be used to sell products and services; when health care system is steered by the government, science is subsumed in larger goals.

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philosophical views. For instance, there were separate Catholic, Protestant, liberal, and Socialist sports clubs, newspapers, schools, insurance companies, labor unions, agricultural associations, and political parties.”

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## **“‘IS RICKETS A NORMAL CONDITION’: THE CONSTRUCTION OF NORMALITY IN THE REPRODUCTIVE BODY IN EARLY AND LATE TWENTIETH CENTURY AMERICA”<sup>1</sup>**

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Social science seeks to undermine taken-for-granted ideas about nature or common sense. While the realization that what is normal or “natural” is embedded in particular times and social arenas has been a perpetual theme in the social sciences; however, less critically considered have been views of health normality.<sup>2</sup> A tremendous amount of scientific energy and medical resources hinges on the assumption that bodily normalities exist. Among all the examples of the natural that we address, the reproduction of a child is an archetypal example of a major biological event that happens “naturally.” Even contemporary social sciences and humanities critiques of the medical sciences frequently imply a human baseline state to which the subject, often gendered, would revert, were certain societal restrictions or pressures not in place.

Locating the blind spots in our “common sense,” as authors such as Schutz and Luckmann (1973) have pointed out, is no easy matter. Bourdieu (1990) and others have argued that a *habitus*, an unreflective shroud of assumptions about the world, guides our most minute practices, making our present conditions appear to be a baseline normality. But *habitus*, if there is such a thing, must guide our academic practices as much as it does any others. That is, what we, as analysts, are disposed to consider “natural” is very likely embodied in the disciplinary techniques we use and the concepts we develop, making it difficult to pose research questions independently of the terms that comprise them. Our training and the products of it that we reflect in our writings are in some way precipitates of our own experience, whether this experience is gained from the proximity of our personal lives or from the distance of our readings. Because our models reproduce “in their own terms the logic from which that coherence is generated” (Bourdieu 1990, 92), what we so take for granted becomes embedded in the analytical techniques we use, the concepts we develop, and the graphs and tables we produce.<sup>3</sup> We can

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<sup>2</sup> For critical discussions of the concept of normality at the intersection of health, social life and statistics, see, for example: Butt 1999; Hacking 1990; Lock 1993; McKenna 2000; Murphy-Lawless 1998; Rapp 1999; and Watkins 2000.

<sup>3</sup> Our ideas about naturalisms shape not only the research protocols we devise; they even shape the groups into which we divide our intellectual labor. During my service several years ago on the Committee on Population at the United States National Academy of Sciences, I began to realize that we, the committee members, rarely thought about populations of developing and developed countries in the same frames, either in our activities or in the analyses we published. Indeed, our meetings themselves seemed structured to ensure this intellectual separation. A number of members who came for the first day, which was devoted to international work in developing countries, left town at the end of the afternoon. The next morning other members appeared, oriented to domestic issues. This non-overlapping thematic structure saved money for the Academy on overnight expenses on committee members; for individuals it

somehow relate to the disparate, if not contradictory, visions they suggest, but because contradictions rarely pose problems in our practical lives, we tend to allocate them, as Marcel Mauss (1973, 70) observed, to the category of “miscellaneous”: to be sorted out, we perpetually promise ourselves, later.

Measures taken by public health institutions and preventive medicine pose special challenges for locating common sense in health because of the subtlety with which they seem to produce outcomes that seem “natural.” For these fields, “success” is a “non-event.” Nothing happens. Instead of eliminating cases of acute and visible maladies, practitioners attempt to ward off maladies before they can occur. Because there is no longer any obvious malady to cure, the result may be taken as the “normal” state. For example, because of strong immunization programs to immunize children against polio, diphtheria, smallpox, and measles, a rapidly declining number of us (especially in the West) would even fail to recognize cases of these diseases.

Among the most important examples of preventive measures that appear to create new ideas of naturalisms have been campaigns against vitamin deficiency disease. Ingesting food, whether the wrong kind or in the wrong condition, had long been seen as the cause of disease. Hippocrates recognized that some foods might be appropriate for some people but not for others, and he advocated food as therapy for particular ailments (Wain 1970). But in contrast to the notion of disease that posited the presence of elements in foods that were detrimental to health, an entirely different paradigm emerged in 1912. This new view posited that disease could be caused by the *absence* of food elements that came to be called “vitamins” that were essential to health. The paradox that a vitamin deficiency disease presented “an illness ... caused by the absence of an invisible substance in ... food” required a wholly new mindset. Wain (p.368) succinctly captures the twists of logic needed to comprehend the situation:

The concept that diseases could be caused by the absence of 'something' was a revolutionary one and took a long time to gain general acceptance. This was a radical departure from the prevalent idea that all diseases were due to 'something' and were caused by positive agents such as poisons or bacteria. It was easy enough for mankind to understand how someone could become ill from a toxic substance in his food, but to accept the idea that illness could be caused by the absence of an invisible substance in his food was contrary to common sense and experience.

Vitamin D is of special interest for my purposes because it can prevent the bone-softening vitamin-deficiency disease rickets (“rachitis” is the formal medical term). Vitamin D deficiency can affect people of any age group. In a recent article, for example, Rao (1999) reports that vitamin D depletion in the elderly is on the rise again in the U.S. Unrecognized vitamin D depletion accelerates cortical bone loss and increases the risk of hip fractures. But the disease's risks have been linked especially to risks for childbearing for women.<sup>4</sup> This paper describes a brief history of the disease in the United States and how changes in its prevalence appear to have

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saved time. But the result was that two entirely separate and non-communicating modules of the brain seemed to be at play for each set of activities. The international module, invoked on the first day, concerned itself with high fertility, maternal morbidity, contraceptive uptake, education for girls, and rapid rates of urbanization. The domestic module, moving into place on the next day, dealt with unintended pregnancy among adolescents, the economic effects of immigrant populations, and insurance programs for elderly populations. Occasional overlaps in topics between the two days seemed to be framed differently as well. It would be too easy to blame this problem entirely on a personnel turnover for some of us, myself included, stayed throughout the full two days. All of us just “naturally” underwent a mental turnover as we collectively shifted gears. (Speaking of his work in Samoa, Shore (1996), describes a related sensation in trying to grapple with different versions of cultural reality.)

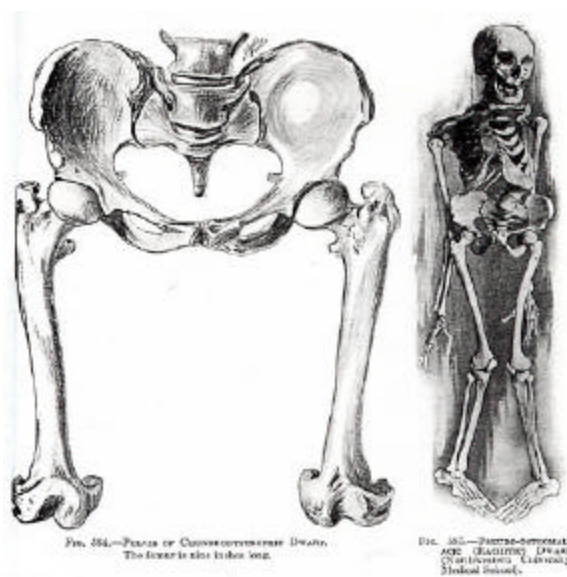
<sup>4</sup> Edward Shorter's book, *Women's Bodies* (1997), contains excellent descriptions of rickets in the history of the West and its implications for childbearing women. This paper touches on many of the same issues, but it moves on to explore the more phenomenological implications of the example of rickets for the evolution and dynamics of “common sense.”

affected changes in risks for childbearing for women. My strategy for trying to locate common sense is to triangulate: to look for plays on time and historical circumstance. I look for instances of what is taken for granted at one historical moment but suddenly becomes abnormal, and thus starkly visible, in the next. A public health magazine published by the American Medical Association called *Hygeia* is ideal for this purpose. Beginning in 1924 and continuing into the 1970s under the title *Today's Health*, *Hygeia's* articles and images offer a rich vision of changing perceptions of health and the body. I also build on my work in The Gambia and on my study of an American obstetrician, Joseph B. De Lee, and the women with whom he worked in largely-immigrant population slums of Chicago just before the turn of the 20th century. Relevant as well is the work of a contemporary of De Lee's, Johns Hopkins physician John Whitridge Williams.

### The Specter of Rickets in Childbearing

Vitamin deficiency disease was a theme that dominated many of the early volumes of *Hygeia*, and rickets, in particular, drew enormous worry. Sunshine and cod liver oil were recognized as effective in preventing rickets, but the discovery of vitamin D itself was not recognized until the 1930s. In the nineteenth and early twentieth centuries, rickets and maladies such as polio, malnutrition or injury could have grave consequences for childbearing among women in certain regions of turn-of-the-century America and Europe whose pelves became deformed in childhood. The weak pelvic bones of a toddler could bend as she began to move about, producing a small or distorted passageway through which a baby would later have to pass during birth. In the worst cases, the diameter of the narrowest point (the inner pelvis) was so sharply decreased that labor would be prolonged or obstructed, producing a lethal infection or ruptured uterus, either of which could be lethal. If the woman survived, she might emerge from the experience with severe injuries and a dead or injured child. Joseph B. De Lee's textbook, first published in 1913, reflected such concerns in drawings like this one (Figure 3.1):

**Figure 3.1**  
**Rachitic Pelvis and skeleton Displayed in 1913.**



Source: DeLee (1913, 661) Captions in the original text is as follows: (1) "Pelvis of Chondrodystrophic Dwarf. The femur is nine inches long." (2) Pseudo-osteomalacic (Rachitic) Dwarf (Northwestern University Medical School).

Women with a misshapen or small pelvis faced heavy risks of death in childbirth. De Lee (1931, 651) asserted, “Tramond of Paris, who studied many thousands of [pelves], found scarcely one in 5,000 that was nearly perfect.” Although undoubtedly overstated, this concern hints at a problem on a scale that is beyond the ability of most of us to imagine. Indeed, De Lee's frustration with a society that seemed to regard high maternal and infant tolls as regrettable but “normal” or “natural” induced him to launch a campaign to “pathologize” labor and hence requiring heightened medical attention, a move that today arouses rancor among from those now concerned with women's autonomy in birth, and hence the natural character of birth.

To avoid crisis, a pregnant woman with a pelvis severely deformed by rickets might be advised by her physician or family to follow a meager diet in an attempt to keep the baby from becoming too large.<sup>5</sup> In other instances, a physician might induce labor early to ensure a small child, weighing the risk of prematurity to the child against the risk to the mother of an impossible delivery. Caesarean section surgery was gradually becoming safer when De Lee began his professional career at the end of the 19th century, and it usually guaranteed the survival of the child. But until innovations such as antibiotics, blood transfusion technologies, and better surgery techniques came into common use (antibiotics, e.g., around the late 1930's and well into the 1940's), Caesareans bore a heavy risk of infection and death for women, especially when performed in locales outside of the best maternity hospitals. The chief alternative—an equally stark one—was craniotomy: crushing the fetal skull to pull the body through the mother's pelvis, effectively sacrificing the baby to try to save the mother.<sup>6</sup>

With specters like this, De Lee's writings constantly grapple for strategies to prevent tragedy. His writings, over the course of his career, reveal a physician who was concerned at every moment with the fate of his patients, yet whose techniques for doing so could change almost 180 degrees in a rapidly changing professional field. Thus, his 1901 paper offers a strong argument against Caesarean section, placing both it and symphyseotomy (sawing open the woman's anterior pubic bones to allow the child's passage) in the category of “... operations dangerous to the mother for the sake of the child” (p. 11). In an article reflecting his bitterness at society's willingness to risk the life of the mother in what was then an extremely hazardous operation, De Lee describes the case of a Caesarean in one of his patients with a flat, rachitic pelvis:

The patient had been in labor sixty hours, and though the child was in prime condition and the patient not infected, the writer, because of the long labor, advised against Cesarean section. The patient being a Catholic, a priest was summoned, who insisted upon Cesarean section and overruled the patient herself. Nothing could be done but the graver procedure, and the patient died on the third day, never rallying from the operation. The child lived (De Lee 1901, 10).

But although bleak reflections on the religious, emotional, sociological, and legal concerns that such situations presented comprised some of the most vivid moments in De Lee's early medical writings (e.g., 1901), by 1920, the field had so changed that he was advocating measures that had the cast of “luxury”: prophylactic forceps delivery—delivery by forceps and by thorough

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<sup>5</sup> As late as the 1950s, American women were commonly urged to try to keep baby's weight down to facilitate birth by adhering to, for example, rice and water diets (Nurse Midwife Patricia Woollcott, personal communication).

<sup>6</sup> The letters to the Women's Cooperative Guild in England (1916) contain an arresting case of a woman whose strenuous farm tasks in her adolescent years had damaged her pelvis. Reporting 10 births, five males and five females, she related that, while the girls were all born safely, each of the boys had been too big to pass through the pelvis. Writing with an understatement that would horrify a contemporary audience, she explained how the cases were resolved: “Through being left without a mother when a baby—[my] father was a very large farmer and girls were expected to do men's work—I, at the age of sixteen, lifted weights that deformed the pelvis bones, therefore making confinement a very difficult case. I have five fine healthy girls, but the boys have all had to have the skull-bones taken away to get them past the pelvis.” (p. 167)



anesthesia—to avoid the pains of labor (De Lee 1920). This was a mode of childbirth his wealthier patients were beginning to demand, but also a goal that De Lee was advocating as a future possibility for every woman. (see Leavitt 1988, for an astute interpretation of this paper, which has provoked such strong reactions from contemporary natural childbirth advocates, in the broader context of De Lee's developing strategies of preventive medicine.)

Northern European countries had long recognized the rickets-preventive potentials of the livers of certain fishes, and *Hygeia's* early issues were dense with advertisements of cod liver oil. Researchers of the early 1920s, however, had begun to link rickets to a lack of the sun's ultraviolet rays. Since the beginning of the Industrial Revolution in Europe, when peasants left the land for work in the cities, maladies sounding like rickets had been reported in northern urban areas, where factories and houses churned out clouds of dark polluting smoke, and tall, closely packed buildings blocked out the sun. A 1927 advertisement in *Hygeia* (p. 10) described an urban environment of the times thus: "Great cities, with their lofty edifices, belching smoke stacks and day-darkening factories are a tribute to commerce but a menace to health. Excluding the rays of sunlight from the narrow streets below, they transform city streets into veritable canyons of darkness." According to Benjamin Harrow, in his 1927 *Hygeia* article, "Meet Doctor Sunshine," the combination of moisture, dust and smoke in large, low altitude U.S. cities was estimated to prevent 95 percent of the potent rays of the sun from penetrating (p. 580). To make matters worse, noted a 1929 *Hygeia* advertisement, "...as soon as chill weather comes most children are wrapped in layers of clothing that cut off the important solar forces as effectively as walls of stone" (p. 968). The lack of sunlight and fresh air in the foul housing tenements in cities like Chicago was one of the prime targets of reform movements in the late nineteenth and early twentieth centuries (e.g., Hunter 1901). Prior to the 1920's, as many as 90 percent of infants and children in the larger cities of the world's northern and temperate zones were said to be afflicted with rickets (Wain 1970, 374). Indeed, as late as 1927, no other disease seemed to be as common to infants living in these zones (Harrow 1927, 580). So taken for granted did rickets seem that Olive Swanson could entitle her 1928 *Hygeia* article, "Is rickets a normal condition?" (see Figure 3.2.)

By the late 1920's, physicians and public health authorities had begun urgent campaigns to ensure fresh air and sunshine for all children and, in particular, for children stricken with rachitis. Parents of rachitic children were being urged to dispatch their children to the beach or to "sunshine camps" (e.g., Day 1927) to soak up as many of the sun's ultraviolet rays as possible (see Figure 3.3).

In 1931, a technique for irradiating milk with vitamin D was discovered by Dr. Alfred F. Hess, and within months, fortification of milk and certain canned foods with vitamin D enrichment was widely available in major U.S. cities. By the late 1930s, however, vitamin D irradiated milk and other foods had been available for several years, and America's passion for the sun, while still apparent in *Hygeia's* pages, had begun to abate. In 1942, one of the first ads for a "selective sunfilter cream" appeared in *Hygeia*, promising to shield children's delicate skin against harmful rays of the sun and permit the entrance of its healthful tanning rays (p. 409). With cleaner urban skies, vitamin D-fortified foods,<sup>7</sup> and safer and more routine surgery options, most of us appear to have left behind fears, if not the knowledge, of rickets. Individuals who suffered from diseases like polio and rickets in childhood are still among us although their numbers are smaller each year, and the experience is becoming a distant memory in the American consciousness.

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<sup>7</sup> This is not to imply that the ingestion of vitamin D treated cows' milk now has all benefits for children and no detriments. See Cohen (1998) for recent charges that milk contains powerful growth hormones, insecticides, virus, bacteria, cholesterol, fat, and so on. Furthermore, the dairy industry has misled, and colluded with, the Food and Drug Administration, the U.S. Congress, and the scientific and medical establishment in making milk a "deadly poison."

Figure 3.2



Source: *Hygeia* (1928, 494).  
Photo © American Medical Association/courtesy AMA Archives.

Figure 3.3

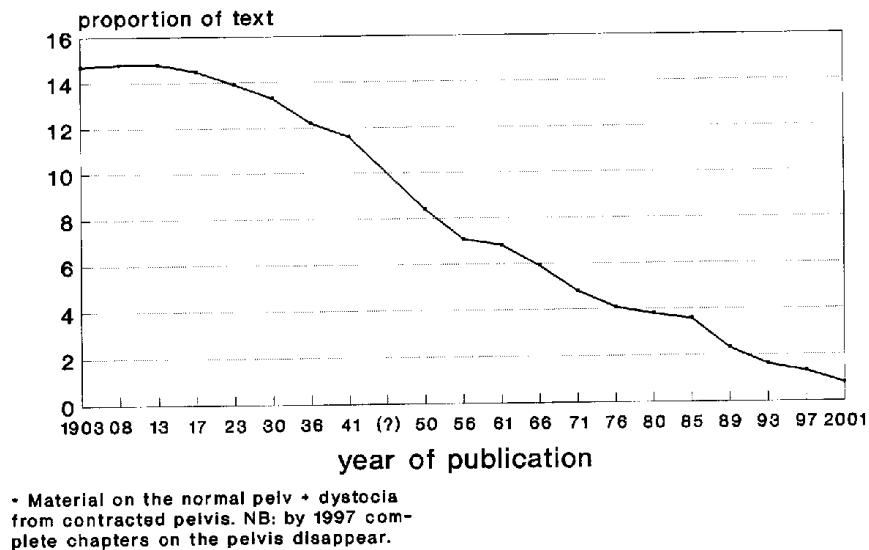


Source: From an article on sunshine camps in *Hygeia* (1927, 249)  
Photo © American Medical Association/courtesy AMA Archives.

But whereas rickets was such a taken-for-granted—"normal"—state of childhood existence before vitamin D was added systematically to food, it is now rare to see the bone malformations, including knock-knees, bow-legs or "pigeon breast," that the disease so commonly afflicted on children of the past (Wain 1970). The new state of normality of the pelvis was no longer one of pathology, as De Lee's citation of Tramond of Paris implied it to be, whether because of rickets or any other malady. Indeed, given the new vitamin D supplementation to foods and the fact that the caesarean is now a procedure of such ready resort (far too much so, in the views of many), the pelvis draws hardly any concern at all.<sup>8</sup>

The series of texts written by Johns Hopkins physician John Whitridge Williams, which has spanned the twentieth century, clearly reflects these changes. The first edition was published in 1904, and the text has continued under his name as *Williams Obstetrics* into the present. The 1904 edition began, as did all the early ones, with a chapter called, simply, "The Pelvis," which described the measures and planes of a pelvis. Later in the text were six more chapters on the pathologies of the pelvis and its proximal bones (e.g., "Contracted Pelvis," "Anomalies Due to Abnormal Malleability of Pelvic Bones (Due to Rickets or to Osteomalacia)," "Pelvic Anomalies Resulting from Abnormal Direction of the Force Exerted by Femora," and so on. Figure 34 shows that in all, the pelvis occupied seven of the 45 chapters of this first edition, and until 1923, nearly 15 percent of the total number of pages in all the editions was devoted to the pelvis. Thereafter, attention devoted to the pelvis began to wane.

**Figure 3.4**  
**Proportion of Williams Obstetrics Textbooks Devoted to the Pelvis\* by Year of Publication.**



Source: Williams graph

By 1941, the initial chapter on the pelvis was replaced by a chapter entitled "The Female Organs of Generation," previously chapter 2. There also began a slow but steady decline in the overall

<sup>8</sup> The technique of pelvimetry, measuring the diameters and angles of the pelvis with special instruments to anticipate possible problems in birth, a subject that so consumed De Lee and Williams, figures almost not at all in contemporary texts. A 1995 obstetrics text book by Beckmann et al. (1995, 106) dismisses pelvimetry as having no value for predicting whether a fetus can successfully negotiate the birth canal. Beischer et al. (1997, 511) mention examination of the pelvis as part of the general examination to which a pregnant woman is subjected, but recommend radiographic pelvimetry and only in cases that forebode trouble.

proportion of pages devoted to the pelvis. By 1997, for the first time, there was no longer a full chapter anywhere in the text devoted to the pelvis at all. And in the most recent edition (Cunningham et al. 2001), less than one percent of the pages were devoted to the pelvis.

Measures which make it possible to circumvent so many concerns about of the pelvis in childbearing have produced a striking dearth of interest in a subject that consumed such attention nearly a hundred years ago.

Our health concerns about sunshine and its effects are not gone, of course. But instead of displaying concern with the lack of sunshine, our magazines for parents now imply that children get too much of it.<sup>9</sup> Reacting to media warnings about the long-term dangers of cancer and the effects of sun on aging of the skin, we insist on covering our beach-going children with powerful sun blocking creams whose potency we measure with “sun protection factor,” a cultural scheme we have created to maintain vigilance against the sun's rays. Even our beach equipment comes with sun protection indices. For example, an ad in the *One Step Ahead* late summer catalogue (2000) offers a tent, a “family-sized cabana” where parents and small children can play, that filters out 95 percent of ultraviolet rays.

Together with the arsenal of technologies that allow us to take caesarean section for granted as the commonsensical recourse for a woman with a small or malformed pelvis, we can allow the problems that the pelvis can cause to dip below our horizon of perception. The idea of exposing children to intense sunlight and thus ultraviolet radiation now seems shocking to us. What was before the curative measure is now the enemy. For our vitamin D-enriched generation, which so takes for granted both sunshine and caesarean section that their temptations are to be avoided as much as possible, it is nothing less than astonishing to look back on *Hygeia's* children of the 1920s, clad only in underwear and heavy sunglasses, playing indoors under ultraviolet lamps that responsible parents or medical facilities are exhorted to buy (see Figures 1.5 and 1.6).

“Is rickets a normal condition?”, a question which now seems so utterly alien three quarters of a century after Olive Swanson posed it in 1928, thus brings back the larger question: How has the virtual elimination of injurious, deforming, and even life-threatening maladies such as rickets altered our ideas about normality in the childbearing body? As fixes like vitamin D supplementation become sedimented into our common sense—with the result that “nothing happens”—the factors that have weighed so heavily in other times and places become invisible to us as we construct our cultural generalizations about a reproductive body uncompromised by disease or injury.

## CONCLUSION

Human genetic variation is probably greater than is usually acknowledged. And yet variation of genetic origin usually matters far less to health in a population like ours than in poor ones because of the increasingly sophisticated medical “fixes” available to us. A lifetime package of preventive and proactive measures such as surgery, vitamins, immunizations, x-ray, and transfusion technologies, not to mention antibiotics, better nutrition and lower fertility—all have shaped the health status of our population, but in ways that now seem invisible to us. It is not the case that our views of normality reflect changes in technology and know-how like these in a straightforward, one-to-one correspondence. Nonetheless, our increasing personal distance from

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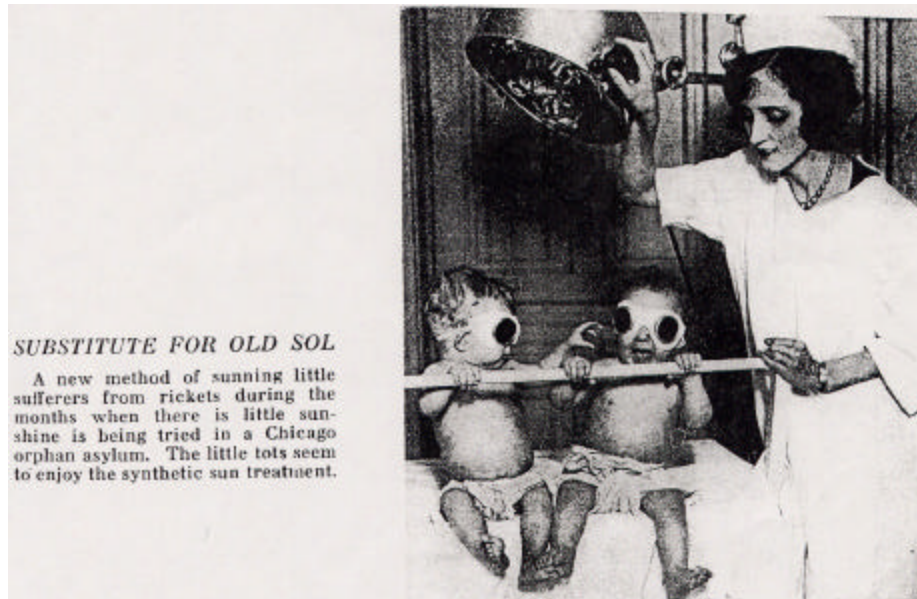
<sup>9</sup> There is also little visible concern about Vitamin D even for infants who consume only breast milk because their mothers' consumption of enriched food products is considered to provide enough Vitamin D for them. In a sudden spate of articles that have recently come to public attention (e.g., Kreiter et al., 2000; Welch, 2000), researchers are reporting a small but intriguing number of pediatric patients with rickets. These patients tend to be African-American infants, whose dark skin does not absorb as much Vitamin D as white infants. They also tend to be those whose mothers have responded, ironically, to increasing calls by pediatricians and public health officials to breastfeed infants, but have not given supplemental Vitamin D to their babies. To be sure, there has been very little advocacy, in recent years, from pediatricians to feed supplemental Vitamin D, because it has been assumed that breast milk would contain enough of the vitamin when this is not universally true.

Figure 3.5  
Advertisement in *Hygeia*(1929, 968) for Ultraviolet Lamps.



Photo © American Medical Association Archives

Figure 3.6  
Ultraviolet Lamp Treatment in 1920s Chicago Orphan Asylum.



Source: *Hygeia* (1926, 57).  
Photo © American Medical Association Archives.

the high-and-risky end of the experiential spectrum of fertility, combined with our unprecedented levels of preventive care and backup in case of emergency, has truncated sharply

our vision of the bodily structure needed to produce children under certain conditions. Fewer Americans experience sickness, insecurity, and poverty on the scale that much of the world still experiences. Few of us know women who endured an adult life of exhaustion from reproduction: women who, though they survived multiple acts of childbirth, may have died an early death from the cumulative effects of these acts.

Getting a fix on the *habitus* that so thoroughly enshrouds us is no easy task. We all can somehow relate to different frames of reference, whether from our readings, our conversations or our life experience. And yet our social and political milieu guides us in selecting which facets of reality to perceive and how to interpret them. The challenge is to ensure that the shifts to one vision of normality or another are made as visibly as possible, and to allow apparent anomalies to stand out. Although investigating normality requires vigilance against the power of the frames and vocabularies to which we are held hostage, maintaining disciplinary and cultural, depth is our best bet for gaining the footing needed to contribute to scientific ideas.

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## **SOCIOCULTURAL PERCEPTIONS OF FERTILITY AND INFERTILITY AMONG RURAL EDO WOMEN**

*Friday Okonofua*

Infertility is defined as the inability of a couple to achieve a pregnancy after one year of sexual intercourse without the use of contraceptives (World Health Organization, Task Force on the Diagnosis and Treatment of Infertility 1987). By contrast, “fecundability” and “fertility rates” are terms frequently used interchangeably to describe fertility in the literature. Fecundability refers to the probability of becoming pregnant during an act of sexual intercourse in the menstrual cycle, while the fertility rate is the total number of children a woman has in her lifetime. These terms are often used to describe and compare individual as well as community levels of fertility and infertility.

As an obstetrician and gynecologist practicing in Nigeria, I frequently encounter couples with mild or severe forms of infertility. I also deal with couples desiring fertility regulation or who ought to be controlling their fertility as a result of excessively high rates of fertility, or their acquisition of concomitant medical problems requiring fertility regulation. Of these situations, the wide range of expressions, rationalizations, and perceptions of fertility and infertility, which are at variance with the medical explanation of disease causation, have continued to pose considerable challenge to efforts aimed at improving women’s health in the country. Many Nigerian couples regard fertility as a natural phenomenon given by a supernatural power, and any deviation from the normal can only be caused by another harmful supernatural power. Thus, many infertile couples often present infertility as the “failure of a pregnancy to stay,” denying the existence of physical barriers to fertility and inferring the interference of pregnancy by a supernatural being.

The purpose of this paper is to describe the cultural and social context of fertility and infertility in southwest Nigeria, and to make recommendations on ways to enhance the correct interpretation of fertility and infertility in the country. The paper is divided in three parts. In the first part of the paper, we describe the scientific, cultural and social contexts of fertility and infertility in Nigeria. In the second section, we explain the cultural perceptions of fertility and infertility and how these perceptions relate to the acceptance or non-acceptance of modern medical methods for infertility treatment and fertility regulation. In the final section of the paper, we make substantive recommendations on methods for improving the social management of fertility and infertility in Nigeria.

### **MEDICAL AND SOCIAL CONTEXT OF FERTILITY AND INFERTILITY IN NIGERIA**

Nigeria currently has an estimated population of 120 million, and is widely known to be the most populous country in sub-Saharan Africa. With a total fertility rate of 5.6 percent and a population growth rate of 2.9 percent, Nigeria also has one of the fastest growing populations in the

developing world. Population increase is largely due to a high birth rate and a declining death rate, with little or no contributions made by in-migration. Indeed, the rate of out-migration in Nigeria slightly exceeds that of in-migration. The high birth rate is due to a preference for large family sizes by communities in many parts of the country, coupled with poor use of family planning methods.

Paradoxically, despite the high rate of fertility in Nigeria, the country also has one of the highest rates of infertility in Africa. Several studies have reported rates of infertility of between 20-30 percent existing side by side with high fertility levels in many communities in Nigeria (Ebomoyi and Adetoro 1990; Okonofua, Snow, Kane and Wyshak 1999). Infertility in Nigeria is mostly secondary to pelvic inflammatory diseases from sexually transmitted diseases, infections in the male, unsafe abortions and post-partum infections (Okonofua 1994, 1999; Okonofua, Snow, Alemnji, Okoruwa and Ijewere 1997; Okonofua, Ako-Nai and Dighitoghi 1995; Larsen 1995).

Recent evidence suggests that infertility causes severe social problems for Nigerian couples. As a result of the cultural need for childbearing in many Nigerian populations, infertile couples are often ostracized and stigmatized. This stigmatization is often worse for women as compared to men, since in many Nigerian cultures, male infertility is often not recognized. Often women are blamed for infertility, and they are subjected to social disparagement and physical abuse as a result of infertility. Thus, the fear of infertility is widespread among Nigerian women. It is now being increasingly recognized that this fear of infertility is one of the important reasons that women often fail to use fertility regulatory methods, as they believe contraceptives may cause infertility in later life. This is one reason that despite the widespread availability of family planning methods in Nigeria, the contraceptive prevalence rate is only 6 percent, one of the lowest rates of contraceptive use in any African country (Okonofua, Harris, Zerai, Odebiyi and Snow 1997).

The Edo-speaking people vividly illustrate the pattern of cultural interpretation and meanings given to infertility by communities across Nigeria. We will therefore utilize our experiences conducting research and programs in this part of the country to further clarify the social and cultural context of infertility in the country. The Edo-speaking people are currently resident in Edo State, one of the 36 states in the Nigerian federal structure. The state consists of 2.5 million people and is one of the states in the oil-producing Niger-Delta region of Nigeria. Its capital is Benin City, once the epicenter of the ancient Benin kingdom famous for its work of art and unique cultural practices. To the present, the Benin kingdom maintains its traditional kingship system and traditional religion. Many traditional cultural beliefs, values, and laws remain strong. These are largely responsible for the cultural interpretation given to fertility and infertility among the Edo-speaking people of Nigeria.

#### **DATA SOURCE**

The data for this paper were obtained from observational studies and in-depth interviews conducted with couples seeking fertility and infertility treatments at the University of Benin Teaching Hospital, and the reproductive health clinic of the Women's Health and Action Research Center in Benin City, Nigeria. Both clinics are located in Benin City, a sprawling urban settlement, about 300 kilometers northwest of Lagos. Benin City is the headquarters of Edo State, one of the thirty-six states in the Nigerian federal structure. Benin City has an estimated population of one million people, whereas Edo state has a population of 2.5 million. The city is inhabited mainly by Edo speaking people, but there are also some migrant residents from elsewhere in Southern Nigeria. Benin City is famous for its work of art and unique cultural practices and still maintains its traditional kingship system and worship of traditional religion. Many of the cultural beliefs of the people have been handed down from generations, and are held in trust by a strong and unbending system of traditional values and laws. These beliefs are largely

responsible for the cultural interpretation given to fertility and infertility by Edo-speaking people of Nigeria.

The study involved women and couples attending the two clinics in the city for family planning services, infertility and general gynecological treatments. Over a period of two years (1998-2000), 870 infertile couples were treated in the two clinics; 1,352 women attended the family planning clinics; whereas 970 women were treated for general gynecological conditions. The clinic records of these women were reviewed with a view to determine the social context of their fertility and infertility treatments. In particular, we studied a sub-set of 23 infertile women who consulted with their husbands and whose records were detailed enough to permit an analysis of the social dynamics and fertility desires within the couples. Forty infertile women and 33 women attending family planning clinics were also interviewed in-depth with an open-ended questionnaire to determine their attitudes toward fertility and infertility and their perceptions relating to the causes, treatment and prevention of fertility and infertility. Finally, we collected structured and semi-structured information from 123 women who attended the two clinics for management of unwanted pregnancies and treatment of abortion complications. With these women, we sought information regarding the reasons they did not want the pregnancies, their knowledge and attitudes toward the use of contraceptives, and their future fertility desires.

Information derived from these various sources have been synthesized to gain insights into the social construction of fertility and infertility among residents in Benin City, Nigeria. In addition, I have relied heavily on my personal experiences living and working in the city as well as on previously published works that document issues relating to fertility and infertility in the area.

## **PERCEPTIONS OF FERTILITY AND INFERTILITY**

### ***Attitudes Toward Child Bearing***

The Edo-speaking people of Nigeria place a high premium on child bearing and high fertility. The situation is made stronger by Edo patriarchy. Men head most of the decision-making machineries of Benin kingdom, and the traditional systems of laws and values are weighed in favor of men, and placing women at a considerable disadvantage. Thus, men are allowed to marry many wives. Indeed, a man's status in the kingdom is determined by the number of wives and children he has. Having children is a symbol of power, wealth and prestige for men in the Benin kingdom. In particular, having a male child is regarded as being more desirable than having a female child. According to the Benin custom, the first male child is expected to inherit all the wealth of his father regardless of the chronological age of the male child in comparison to the female children.

The Benin society has no respect for monogamy, especially if that single wife is infertile or bears only female children. A man would immediately marry another wife if the first wife were unable to bear a child within a few years of marriage. Indeed, the immediate family members of the man would harass and malign the wife and encourage the man to marry another wife. For many Edo women therefore the fear of infertility is real, since the ability to bear a child is a principal factor in determining the success or failure of a marital relationship. Consequently, many women often elect to test their fertility before marriage by not using contraceptives and thereby becoming pregnant deliberately. Such pregnancies are then removed by induced abortion. Indeed, in our recent survey of women in Edo state aged 20-45 years, 85 percent reported having an induced abortion with a preponderant proportion of such abortions occurring before marriage and before the women achieved their first live birth. Thus, the need to confirm fertility is an important reason that there is a high rate of induced abortion among Nigerian (Edo) women. As an additional precaution to prevent an infertile marriage, many men often insist that their prospective wives become pregnant before they carry out the official marriage ceremonies.

Perceptions of causes of infertility: The patriarchal predisposition of the Edo-speaking people probably explains their perceptions of the causes of infertility. Although the results of published scientific studies indicate that the causes of infertility in the community are equally distributed between male and female factors, male infertility is often not culturally recognized by the people (Okonofua, Snow, Kane, and Wyshak 1999). The cultural perceptions of infertility center on images of female infidelity, wrongdoings, and spiritual retributions while the men are often exonerated from any possible involvement in the causation of infertility. Interestingly, this belief is held equally by men and women, and in our interactions with women, we have been astonished at the ease with which they accept the blame for the infertility and exclude their male partners as contributing to the infertility problem.

In general, there is a poor understanding of the anatomy and physiology of fertility and infertility among Edo-speaking people. For many people in this region, a woman is to blame for infertility. Once sexual intercourse takes place, a woman ought to get pregnant immediately. If she fails to do so, then a harmful supernatural power must have interfered with the pregnancy, preventing it from continuing. Such powers are often presented as “evil spirits,” “curses,” and “witchcraft.” Thus, it is not unusual to find various works of art in the community that lend credence to these beliefs, and many women often narrate dreams and premonitions where someone had interfered with their pregnancies preventing such pregnancies from continuing. A common dream is for infertile women to report that someone had had sex with them in a dream, whereupon the pregnancy they were carrying aborted. In some cases, the women would actually mention the name of a close relative, who appeared in such a dream and prevented the continuation of the pregnancy.

The results of two ethnographic studies in southwest Nigeria suggest that men and women recognize that unsafe abortion and sexually transmitted diseases can cause infertility (Okonofua, Harris, Zerai, Odebiyi and Snow 1997; Temin, Okonofua, Omorodion, and Coplan 1999). However, their explanation of the mechanisms through which these may cause infertility are often not explained scientifically. For example, many people believe that a woman has a pre-ordained number of children. If she therefore has repeated abortions, she would eventually waste all the children she would have had in life leading to irreversible infertility. Similarly, sexually transmitted diseases (STDs) are perceived to be predominantly diseases of women passed on from women to men. They are believed to cause infertility through a curse that is placed on the woman as a result of the promiscuity.

A similar misconception surrounds women who experience periods of amenorrhea in association with infertility. Although amenorrhea is often a sign of pregnancy, it may also be a feature of lack of ovulation that is associated with many cases of infertility. Even when a pregnancy test is negative, many infertile women with amenorrhea often think they are pregnant. Indeed, many of them manifest symptoms of “false pregnancy” including abdominal swelling and breast tenderness. After several years of amenorrhoea, some women eventually come to a hospital reporting that they have been pregnant but unable to deliver the babies. If indeed the woman became pregnant while still amenorrhoeic, and delivered after several years of amenorrhoea, she would claim that a special divine counter-force enabled her to deliver successfully such a prolonged pregnancy. Several cases of this type have been reported by the popular press, further giving credence to the belief in supernatural causes of amenorrhea and infertility.

### ***Perceptions of Infertility Treatment***

Among Edo-speaking people, mostly women seek treatment for infertility since it is believed that women are often responsible for infertility. Although male infertility is increasingly prevalent in the community, there is evidence that these are frequently resolved through several culturally approved mechanisms. First, the man would marry another wife who would be pregnant before the marriage. Such pregnancies are often by another man, and are usually without the knowledge

of the infertile male. Indeed, the infertile man would be made to believe that he is responsible for the pregnancy. Secondly, when the female partner has failed to become pregnant after several months of trying, she may on her own try another male partner without the knowledge of her husband. Such male partners are often close relatives of their husbands to ensure that the child would bear biological resemblance to their husbands. A third method that is frequently used is for one of the partners to request artificial insemination with or without the knowledge of one or the other partner. Although clandestine insemination would be ethically unacceptable in modernizing societies, there are health care workers in Nigeria who are prepared to assist a woman or a man to resolve the problem of male infertility with this method.

As a result of the pattern of beliefs about the causes of infertility, it is now known that many couples in Nigeria often seek alternative methods of treatment rather than orthodox treatment (Okonofua, Harris, Zerai, Odebiyi and Snow 1997). In many cases of infertility, many couples who are members of a Pentecostal church, first resort to intense prayer, believing that since God is responsible for fertility, it is only through his instrumentality that the infertility problem can be solved. Today, several Pentecostal Churches exist in Edo State that claim to be able to give the “fruit of the womb,” meaning pregnancy, to infertile couples after intense prayer. The belief that infertility is caused by a harmful supernatural power helps to fuel the belief in the efficacy of prayers in circumventing the negative influences and resolving the problem of infertility.

A second treatment for infertility is for infertile couples to seek help from a traditional healthcare practitioner. Many traditional healers claim to have the power to remove the harmful negative influences responsible for infertility. Traditional treatments of infertility involve many rituals and several traditional drugs and concoctions, some of which are harmful to humans. In one instance, I encountered a man who had taken a lot of traditional medications for treatment of male infertility that resulted in severe enlargement of his breasts. Yet, his infertility problem remained unresolved. Another example was a woman who had native potash inserted into her vagina for the purpose of enhancing her fertility. This resulted in severe erosion of her vagina, scarring and occlusion of the vaginal walls (secondary gynetresia). This considerably worsened her infertility problem and reduced her chances of achieving a future live birth. Indeed, many women have been known to die from complications of medications given by traditional healers for the treatment of infertility.

Among Edo speaking people, orthodox treatment for infertility may not be sought until traditional and religious treatments have failed. Indeed, it is possible that the three forms of treatment—Pentecostal, traditional and orthodox—may be used concurrently and interchangeably. When infertile couples seek orthodox medical treatment, they tend to move from one doctor to the other, looking for a doctor who has a quick fix to the problem. They often tend to ignore the biological explanation for infertility proffered by doctors and are reluctant to complete investigations and the lengthy follow-up treatment with any particular doctor. The lack of an effective orthodox treatment method for infertility in this population also adds to the frustration, with very few examples of success of medical treatment to prove the efficacy of orthodox treatment (Okonofua 1996). Even when it has been proved that the cause of infertility is a mechanical factor such as bilateral tubal occlusion, many couples still believe in the efficacy of prayers and traditional medicines to correct the problem.

Another factor that worsens the prognosis for infertility treatment in this population is the negative cultural attitudes toward adoption. To date, it is known that although there are babies that could be adopted in Nigeria, very few infertile couples are willing to consider adoption as a method of resolving their infertility. Indeed, adoption carries very negative connotations within the traditional Edo community. It is believed that someone may adopt an evil child who would bring ill luck and disaffection to the family. Adoption is also a public recognition of a couples’ failure to achieve a pregnancy, which is hardly tolerated within the social system of Edo culture.

Although child fostering is widely practiced in the community, this does not resolve the problem of infertility since the fostered children eventually return to their original parents.

### ***Perceptions Relating to Fertility Regulation***

As a result of the fear of infertility, many couples are reluctant to use fertility regulatory methods in the belief that these could lead to future infertility. Oral contraceptives are perceived to be associated with infertility. Therefore, regardless of social class and educational status, many women are reluctant to use oral contraceptives for this reason. Interestingly, the intrauterine contraceptive device (IUD) does not carry this negative connotation. Indeed, some women believe that the use of the IUD may enhance future fertility due to the increased menstrual bleeding experienced by women placed on the device. Some women associate increased menstrual bleeding with increased fertility.

Overall, many women fail to use fertility regulatory methods as a result of the need to protect their fertility. However, they often experience unwanted pregnancies as a consequence of their lack of use of contraceptives, for which they resort to unsafe and induced abortions. By contrast to their fear of contraceptives, they are less aware that abortion is more likely to lead to infertility. This explains the fact that many Nigerian women are more likely to use induced abortion rather than to practice effective contraception (Otoide, Oronsaye and Okonofua 2001). Yet, the true scientific situation with respect to the association between fertility regulatory methods and infertility in this population is that the use of oral contraceptives does not predispose to infertility (Okonofua, Snow, Kane and Wyshak 1999). Previous use of the IUCD may slightly increase the risk of infertility, while induced abortion increases infertility risks by nearly five fold (Okonofua, Snow, Kane and Wyshak 1999; Okonofua 1994).

Couples who have attained their desired family size are also unwilling to use permanent methods of contraception for a variety of reasons. Thus, tubal ligation and vasectomy is rare in traditional Edo communities. The reason that couples refuse to use these methods derives from their beliefs in reincarnation. Many people believe that once the tubes or vas have been cut, these individuals would reincarnate still carrying the tied fallopian tubes or vas deferens.

## **RECOMMENDATIONS AND CONCLUSIONS**

Fertility is an important issue to family formation and community life among the Edo-speaking people of Nigeria. As a result of the high premium placed on fertility, infertility carries very negative implications especially for women. However, the explanations of the causes and treatment for infertility are often at variance with the medical and scientific explanation of disease causation.

In Nigeria, most cases of infertility are due to sexually transmitted diseases, unsafe abortion, and puerperal infections. On their own, these conditions are important public health problems that cause untold hardships and mortality and require concentrated efforts for their prevention (Okonofua 1996). However, until the general public becomes aware of the true connection between these problems and infertility, they are unlikely to participate effectively in programs aimed at addressing the high rate of STDs, unsafe abortion, and infertility. Current efforts being made by government and non-governmental organizations in this direction have largely remained stalled because of this primordial disconnection.

There are no tested models for intervening on culturally sensitive issues of this nature but an intensified public health campaign would be important to counter some of the misconceptions. In addition, an improved health system that is able to show evidence of successful treatment and prevention of infertility is needed to increase the people's confidence in the health sector and enable them to accept scientific explanations for infertility and its treatment.

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**POSTMODERN CONTRACEPTION:  
THE USE OF TRADITIONAL METHODS OF BIRTH CONTROL  
AMONG UPPER CLASS WOMEN IN INDIA**

*Alaka Malwade Basu*

**INTRODUCTION**

Every academic discipline has what in legalese are called “terms of art.” A term of art is an ordinary-sounding word or phrase that has a specific technical designation related to the original definition but is more precise. Thus the word “damages” in law means the monetary quantification of the harm that someone might suffer because of a breach of contract or injury due to negligence, as opposed to “damage” in the descriptive sense of the affected body part, etc. The two concepts are related but one is more particularized. In effect the art is the legal art into which the term has been subsumed, so that (at least as a lawyer) one cannot any longer use the term in its naive sense.

Demography has appropriated several such terms of art from everyday language, causing some confusion for the numerous lay groups and persons who now use a demographic argument to lobby for a variety of social and political causes.<sup>1</sup> It is not surprising that these lay groups in turn appropriate the terms of art in demography but forget that the Oxford English Dictionary is not the right place to seek the meaning of these terms. To give a recent example, Saheli, one of the most visible women’s groups in India, has taken the Indian government to task for promoting, and indeed enforcing, sex-selective abortions because of its goal of a Net Reproduction Rate (NRR) of one person. Saheli staff have taken the trouble to find out that an NRR of one implies that each woman is replaced in her lifetime by one girl in the next generation and concluded that the government’s goal of an NRR of one forces each woman to stop with one daughter (rather than with two children, of whatever sex happens to come along).

Such misunderstandings are regrettable but understandable. We cannot have the whole world of social activism trained in technical demography. What is less excusable is the tendency for demographers themselves to forget that many innocuous sounding words/terms in demography have a more restricted meaning than that implied by a lay dictionary or by common usage in the everyday world. I illustrate this tendency with demographic interest in ‘traditional methods’ of contraception. The term “traditional methods” is a demographic term of art, strictly speaking it refers to the noninvasive and nonmaterial ways of preventing pregnancy; more specifically, to periodic abstinence (or rhythm), withdrawal, and terminal abstinence. Increasingly, however, the literature uses the

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<sup>1</sup> See Basu (1998) on this renewed public role of demographic research in areas that are far removed from matters of fertility and mortality.



term in a normative way, to indicate behaviors that are inefficient, unmotivated and somehow ignorant. By extension, those women/couples who persist in using traditional methods of contraception are seen as being inefficient, unmotivated or backward. The semantic contempt for traditional methods of birth control is also reflected in the changing vocabulary associated with them. In the 1970s they were often referred to as “natural” methods of contraception; then the term “traditional methods” got more firmly entrenched. In more recent times, demographers have labeled these as “ineffective methods,” thereby damning them with one stroke. This is how they are referred to, for example, in the tables in Zachariah et al. (1994, 109) which is a book on the demographic transition in Kerala, the one state in which Indian women presumably know what they are doing when they choose their method of birth control.

Given this attitude and this confusion of a term of art with normal everyday language, it is not surprising that the demographic literature has gone to some lengths to equate the success of family planning programs in developing countries with their success in pushing “modern” methods of birth control—that is, the pill, the IUD, sterilization, injections, and now, though more out of the need to worry about STDs than with any real faith in its contraceptive powers, condoms. That this measure of success is taken seriously is evident also from attempts in the recent literature to add some measure of traditional contraceptive use to our calculations of unmet need for contraception. Unmet need is not provided any longer by only those couples who say that they do not want another child but are not using ‘any’ form of contraception; it is advisable to include in this calculation also those women who are using traditional methods of birth control.

This line of reasoning is not entirely unjustified. Use-effectiveness studies do find that traditional methods of birth control have high failure rates (that is, a larger proportion of their users ends up pregnant than do users of more modern methods). But partly this is because at the start of a fertility transition, the users of traditional forms of birth control seem to be those least motivated to control their fertility or else those least able to access more efficient forms of birth control. This disappointment and clucking of tongues about traditional methods of contraception, however, is unwarranted as family planning programs get more securely embedded in societies and as fertility transitions proceed. This is so even for developing countries. Available data on contraceptive use tell us that high or especially increasing levels of use of these methods do not necessarily reflect a poor family planning program nor do they reflect inefficient contraception. As a consequence, they need not represent an underlying unmet need for contraception and nor are they the stick with which to beat family planning program administrators.

In most parts of the world today, it is not the poorest or the least motivated or those with the least access to “modern” birth control that seem to prefer the less invasive traditional forms of contraception category. Condoms should also be added to this “traditional” contraception because condoms have existed and been in use for centuries. It is true that at the start of the age of modern contraception, traditional methods were used most frequently by those who resisted these modern methods or otherwise had poor access to them. But these early users of traditional contraception also had another characteristic to them, related to their self-perceptions of the “normal” body, to which I will return shortly. As the fertility transition has progressed, we have had quite an inversion of preferences. Now increasingly the most modern and the lowest fertility groups seem to practice these supposedly inefficient forms of birth control. Tables 5.1 and 5.2 for India illustrate my point. For the country as a whole, as well as for the major states, prevalence levels of traditional traditional methods and condoms together account for 6.3 percent of total contraceptive use among rural illiterate women, and to a full 50 percent for urban women with a college degree. Incidentally, *absolute* levels of use (that is, not merely as a proportion of all use) of

these methods are also higher among the educated urban group. In such a situation, it requires some stretching of the imagination to equate ‘traditional methods’ of birth control with “traditional” attitudes or ignorance.

As for efficiency of use, based on the Indian NFHS, for women aged 30-44 (that is, women generally at the end of their childbearing experience), for urban degree holders, the mean number of children born is 2.1 for all women, 2.6 for sterilized women, and 1.8 for users of rhythm and withdrawal. That is, the users of traditional methods end up with lower fertility than the average for their group as a whole as well as the users of the more “effective” methods like sterilization. By contrast, for rural illiterate women (those that make

**Table 5.1**  
**Ever Use of Noninvasive Contraception by Urban-Rural Residence .**

	<i>Urban</i>			<i>Rural</i>		
	Traditional (T)	Condoms (C)	T+C	Traditional (T)	Condoms (C)	T+C
All India	11	11	<b>22</b>	10	3	<b>13</b>
Kerala	30	18	<b>48</b>	30	16	<b>46</b>
Karnataka	9	7	<b>16</b>	2	2	<b>4</b>
A.P.	4	5	<b>9</b>	1	1	<b>2</b>
T.N	6	3	<b>9</b>	2	1	<b>3</b>
Punjab	8	14	<b>22</b>	4	7	<b>11</b>
M.P.	6	16	<b>22</b>	3	4	<b>7</b>
Rajasthan	4	8	<b>12</b>	3	2	<b>5</b>
Bihar	9	9	<b>18</b>	3	2	<b>5</b>
West Bengal	48	18	<b>66</b>	41	7	<b>48</b>
Orissa	8	5	<b>13</b>	5	1	<b>6</b>
Maharashtra	6	12	<b>18</b>	2	5	<b>7</b>
Gujarat	9	8	<b>17</b>	7	4	<b>11</b>

Source: Indian National Family Health Survey (NFHS), 1992.

**Table 5.2**  
**Educational Differences in the Current Use of Traditional Methods.**

Education	Illiterate			Less Than Middle School			High School Plus		
	Trad.	Cond.	T+C (T+C as percent of total)	Trad.	Cond.	T+C (T+C as percent of total)	Trad.	Cond.	T+C (T+C as percent of total)
All India	2	1	<b>3 (1)</b>	6	1	<b>7 (14)</b>	10	11	<b>21 (38)</b>
Kerala	3	1	<b>4 (6)</b>	5	1	<b>6 (9)</b>	16	7	<b>23 (36)</b>
Karnataka	1	0	<b>1 (2)</b>	1	1	<b>2 (4)</b>	6	6	<b>12 (21)</b>
A.P.	0	0	<b>0 (0)</b>	0	0	<b>0 (0)</b>	2	4	<b>6 (12)</b>
T.N	3	0	<b>3 (6)</b>	4	2	<b>6 (12)</b>	12	5	<b>17 (33)</b>
Punjab	6	5	<b>11 (19)</b>	9	11	<b>20 (33)</b>	9	22	<b>31 (53)</b>
M.P.	1	1	<b>2 (6)</b>	1	2	<b>3 (26)</b>	2	14	<b>16 (32)</b>
Rajasthan	1	1	<b>2 (7)</b>	1	2	<b>3 (7)</b>	2	12	<b>14 (30)</b>
Bihar	1	0	<b>1 (6)</b>	2	2	<b>4 (10)</b>	5	8	<b>13 (28)</b>
West Bengal	13	0	<b>13 (27)</b>	20	4	<b>24 (39)</b>	43	11	<b>54 (72)</b>
Orissa	1	0	<b>1 (3)</b>	2	1	<b>3 (7)</b>	5	5	<b>10 (21)</b>
Maharashtra	0	0	<b>0 (0)</b>	1	2	<b>3 (6)</b>	4	10	<b>14 (24)</b>
Gujarat	1	1	<b>2 (4)</b>	2	1	<b>3 (6)</b>	7	8	<b>15 (27)</b>

Source: Indian National Family Health Survey, 1992.

up my first category in the section that follows), the mean CEB is 4.7, that for sterilized women is 4.6, and that for users of traditional methods is higher than both at 5.1. Efficiency of method therefore is very much a function of the nature of the user.

What does one make of this? Are the IUD, the pill, and sterilization increasingly the poor woman's methods, while the rich, educated, urban woman prefers to trust withdrawal, rhythm, or perhaps a combination of these in conjunction with the condom? That seems to be the case as shown in Tables 5.1 and 5.2. But the richer, educated, urban woman can hardly be basing her choice on the monetary costs of other kinds of contraception or on the social difficulty of finding contraceptive services. In the Indian case illustrated in the two

tables, she can also not be suspected of having religious reasons for preferring these non-invasive and non-chemical methods, an argument that has often been made to explain why rhythm and withdrawal account for a quarter of all contraceptive use in the developed countries today (UN Population Division 1999).

One might argue that upper class women face more “facilitating” conditions for such traditional contraceptive use. For example, they may have better access to the “husband-wife communication” that the “Knowledge, Attitude and Practice” (KAP) surveys consider so important for effective birth control and more important when the method of choice requires the kind of spousal cooperation that these traditional methods do. More importantly, they may be better able to deal with contraceptive failure because they have both a higher capacity to afford an additional child (though this is debatable) and better and easier access to abortion. We do not really have data on class differentials in abortion because most upper class abortions are performed in private health facilities and no reliable records exist of their numbers. What we do know is that once services are available, there is hardly any moral or religious or even health-related opposition to abortion in India. In all classes of women, the overwhelming majority see nothing wrong with an abortion if circumstances do not favor a birth.

But these are all classic “demographic” explanations. And while they are certainly plausible, they need not be complete explanations at all. From a reading of the anthropological and psychological literature on women’s attitudes towards their bodies, I am tempted to speculate on another kind of differentiation between upper and lower more than such categories are a convenient shorthand for other kinds of markers, such as education, income, urban-rural resources, all variables that differentiate the “modern” from the “traditional woman” class women that may account for this dichotomy in contraceptive preferences. I think these different groups of women differ in what they define as “normal” in their reproductive and sexual bodies.

To articulate these speculations is a large undertaking, given the great paucity of the kind of research literature one would need to make a strong case, but in the following paragraphs I attempt such an articulation centered around the concept of the “medicalization” of the female body. I identify three stages of such medicalization (or its absence) and suggest that these three levels of medicalization combine with (and often contribute to) other kinds of socioeconomic variation/change to produce three broad categories of women defined in terms of what they consider normal. One can look at these degrees of medicalization as a progression that accompanies development, but it is also possible to consider the matter cross-sectionally. I identify three categories of women, who face, respectively, the three regimes that I call premedicalization, medicalization and post-medicalization of the female body.

### **PREMEDICALIZATION AND THE “NORMAL BODY”: “NORMAL” IS WHAT OTHERS THINK**

In countries with strong family planning programs, it is increasingly difficult to find poor, rural, nonliterate women who actively resist modern contraception, but they do exist. The demographic literature on these women and on those who, in larger numbers in the past, were wary of contraception even when they wished to have fewer children offers us some useful hints as to what constitutes the “normal” sexual and reproductive body in their discourse. Two kinds of data are helpful in this respect: those reasons for not using a modern method of contraception and those on reasons for discontinuing use after it has been begun. Aside from the question of those who stop because they want a pregnancy, the most frequent dissatisfaction with modern birth control relates to its negative impact on health in general and in particular to the menstrual problems and irregularities it was believed to cause (for

example, see the reasons for discontinuation cited in the two national level family planning surveys of 1970 and 1980 in India (Khan and Prasad 1983).

At first glance, it might appear that what matters just the personal experience of the disruption in menstrual regularity. On a closer look at the meaning of menstruation in the lives of traditional women in India, however, we are confronted with other possibilities. Most of this literature stresses the public nature of the menstrual experience; from the public (meaning family or kin or community) celebration of menarche to the various menstrual taboos that make the menstruating woman visible through her invisibility. That is, the menstruating woman is not supposed to do a variety of things that involve interaction with others. In a life that is otherwise so interactive, these monthly periods of isolation are naturally well noted (Uberoi 2001).

At the same time, in spite of the embarrassment and “shame” attached to the bodily function associated with such public knowledge, menstruation is “*not* seen as an illness or a pathology...on the contrary, as long as it occurs at the proper time in life and regularly, it is seen as a link between the human world and the cosmic order” (Uberoi 2001; Das 1988; Ram 1998). What is seen as awkward and needing explanation is precisely the opposite—irregular or infrequent or delayed or too heavy menses—all consequences cited in the literature as being caused by modern contraception in cases where women have decided to abandon the contraceptive involved. This is the case even when the change in menstrual patterns is not otherwise medically harmful and may even make life easier for the woman, as discussed in the next sub-section.

For these women, whose assurance of “normal” bodily function depends on the endorsement of others, an unmet need for family planning cannot be met merely with more modern contraceptive services.<sup>2</sup> It can be met with help in using traditional methods of birth control more effectively (not at all an easy prospect given the kind of cooperation and personal motivation and knowledge required) or with the social change that makes public knowledge and approval less important in self-representations of the healthy body as well as with a medicalization of the body that is conducive to accepting benign changes in bodily function. The last two sets of circumstances have promoted the much higher prevalence of modern contraception in urban areas and among educated women and women who have faced the full brunt of a typical family planning program’s persuasive artillery. I discuss this second set of women next.

### **MEDICALIZATION AND THE “NORMAL BODY”: “NORMAL” IS WHAT SUITS MY OWN CONVENIENCE**

An emerging body of anthropological work on the changing circumstances of women comments on the giving up of many of the ritual practices of traditional life with socioeconomic change. One of the most easily discarded seems to be the menstrual taboo, at least in its older all-pervasive form. Several studies of urban slums in particular comment on the finding that these women now seem to practice only the most basic form of menstrual isolation—that of staying away from any religious rituals. Otherwise, the menstruating day is like any other in the lives of these women, albeit more uncomfortable and painful. In the words of Puri (1999), menstruation now enters “an individualized, privatized domain of experience and concern.” If concepts of pollution still exist, there has been a shift from the

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<sup>2</sup> In addition, it is quite likely that this endorsement by others will be withheld if the body is represented as sexual but non-reproductive, even if its menstruating functions are intact. That is, overt contraceptive use itself may also constitute an abnormality. But this has decreased, with the spread of an aggressive and highly visible family planning program in India that has brought the idea of birth control very firmly into people’s consciousness.

idea of ritual purity to that of personal hygiene, a shift that is nurtured by the medical and popular-medical information that is now available to these women, for example, the advice columns of magazines and the marketing of products to aid in personal hygiene.

Not surprisingly, change in the public demonstration of menstrual status and the new stress on its individualized experience seems to be connected with a sea change in the attitude to menstruation. Now it is less likely to be regarded as something whose regularity and intensity are to be preserved at all costs. Indeed, as long as “modern medicine” and its practitioners can convince women that amenorrhoea and lighter bleeding have no other significance for health, such a lessening of the menstrual burden is actually welcomed and even sought out. Thus, for example, George (1994) reports that many poor urban women describe menstruation as a “bother” and a “vexation.” In particular, once they have attained their desired family size, these women are emphatic in wishing that menstruation would cease: “If there is a magic to stop periods, that magician should be brought here” (respondent cited in George 1994; see also, Rajadhyaksha 1995; Geetha 1999; Vatuk 1980; Lamb 1999; Uberoi 2001; Jacobson 1977; Patel 1994).<sup>4</sup>

From this perspective, modern contraceptives (especially the oral pill and female sterilization) are seen as welcome medical interventions because they come with so many additional advantages. Not only do they prevent pregnancy, the logistics of their use are so much more convenient and practical, and they also often lessen the hassle of monthly periods, either by greatly decreasing their intensity, or in the case of the IUD, by increasing menstrual flow.<sup>5</sup> Such interference with the menstrual period, unusually early menopause too (as long as desired family sizes have been obtained) are not seen as something “abnormal.” Instead they are welcomed and seen as contributing to the betterment of the physical self.<sup>6</sup> Thus there is little emotional distress associated with menopause, as long as the woman is not barren.

The bureaucratic nature of the family planning program, in a perverse way, aids this process because it is seen to promote a medical, scientific, rational approach to the body. Indeed, as Rele and Kanitkar (1980) discuss with reference to the great popularity of sterilizations among lower middle-class women in urban areas in the 1970s and 1980s, even the terminology of modern contraception seems to give these women a sense of well-being and control. Sterilizations are not called sterilizations or tubectomies or vasectomies; instead they are referred to by the generic English word “operation” whatever the language of discourse, and are seen as belonging to the world of modern medicine and rational behavior which the modern individual aspires to. Moreover, talk of these operations is safe because it

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<sup>4</sup> Incidentally, it is interesting that one of the few good things that the women had to say about menstruation once its reproductive role was over was that it provided them with one of the few legitimate reasons to avoid sexual relations.

<sup>5</sup> This kind of finding also underscores the complexity of the decision to adopt modern contraception and the fair amount of agency involved. That is, there is a reasoning behind acceptance of even those methods of birth control that have menstrual side-effects; it is not merely a demonstration of the coercive powers of the programs as many commentators simplistically assume.

<sup>6</sup> Indeed, they may be seen as contributing to the betterment of the psychological self as well. According to some observers (see, for example, Saavala [1999] on rural South India), public knowledge about effective contraceptive practice by the contemporary poor woman, especially when the method is as effective as sterilization, can increase her freedom of movement and general autonomy because there is less fear of her shaming family honor by an extramarital pregnancy. Therefore the young sterilized woman often gets previously privileges accorded only to the much older non-sexual woman. Both these categories are seen to be non-reproductive and that is what finally matters.

does not require any mention of sexual or reproductive parts or activities in the way that “traditional” methods such as withdrawal or rhythm do.

An attitude that views the female body in such functional as well as “scientific” terms is naturally more conducive to family planning program interventions than is a world-view that defines the “normal” body in terms of how others see it. To that extent, low levels of modern contraceptive use in a population may indeed reflect a greater traditionalism in that population. But at some point on this move to modernity, the linearity seems to disappear and we get what may be called post-modern women. But in a paper that stresses the need for more attention to semantics, perhaps “post-modern” is not the right way to describe the “new woman,” given the specific connotations that are now attached to that word. Perhaps “neo-modern” expresses more neutrally what I am trying to convey here. The attitude of the well-educated, upper-class autonomous woman whose modernism has gone far enough to question long-entrenched notions of scientific, rational, westernized behavior. So “neo-modern” is the term that I will use in the rest of the text; however in the title of the paper, I retain “post-modern” because it may convey more aptly the “flavor” if not the substance of my argument.

### **POST-MEDICALIZATION AND THE “NORMAL” BODY: “NORMAL” IS WHAT “NATURE” INTENDED**

For women in developing countries, the definition of what constitutes a “normal” reproductive and sexual body becomes what I call neo-modern. As they acquire more education and money, medicalization tells women to trust unhesitatingly western modern modes of treatment, whether of illness or of unwanted fecundity. Instead, the female body is regarded a temple to be nurtured and saved from the worst ravages of modern life, including modern medicine (except in the immediate short-term; for example, to treat an acute infection or to abort a second female pregnancy, western technologies are very handy). For more chronic conditions birth control is seen as a viable treatment and it makes much more sense to rely on noninvasive, “natural” therapies that require more effort but do not harm bodily integrity. If this approach becomes burdensome, there is always the option of a one-step procedure such as an irreversible sterilization with all its attendant assaults on the normal body.

The high levels of use of traditional methods of birth control among educated women and among urban women are not surprising in this framework. They are also consistent with what we know about the determinants of alternative therapies in general. These tend to be adopted most easily for chronic conditions by the higher educated or by the economically better-off all over the world (for example, Eisenberg et al., 1993, 1998; Thomas et al. 1991; Astin 1998).<sup>7</sup> One of the greatest factors promoting such “traditional” methods of prevention and treatment is not the perceived ineffectiveness of modern methods but the their unwholesome side-effects, a finding consistent with the most common reason given for discontinuing contraception in family planning surveys (Bongaarts and Bruce 1996).

In the Indian context, this change in what constitutes normality in upper class women and the greater “body-consciousness” (see Uberoi 2001) is reflected in the booming interest in the beauty industry. But here too, the greatest emphasis is on beauty products that

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<sup>7</sup> They are also associated with a greater tendency to eat organic foods in general and to be environmentally conscious. Seen in this larger framework, perhaps the great resort to ‘traditional’ birth control in Western Europe is also not surprising and perhaps we may be misinterpreting the causes by focussing so greatly on the religious reasons for eschewing modern contraception.

are in some way “natural”—virtually every street in the large cities of India now boasts an “herbal” beauty parlor. A recent book on herbal remedies for women which was produced by an NGO to help “traditional” women surprised its producers by being sold out in the cities in no time (Shodhini 1997). According to newspaper reports, traditional sex experts in the country (who base their medication on ayurvedic medicine) are unperturbed by the advent of Viagra in India, they believe (probably rightly) that their customers will remain loyal to their “safer” technologies.

As several sociologists have pointed out, this heightened interest in “nature” is not really an outcome of a straightforward Westernization. Indeed, it may be the women in category two above who are more simply Westernized in this sense. Instead it may well be seen as a growing nationalism in the post-modern Indian woman for much publicity is now given to all the Indian origins of these herbal and other systems of beauty and medicine (Uberoi 2001; Puri 1999). The ‘holistic’ approach to health and beauty is believed to be the scaffolding on which traditional systems of medicine in India are built. Curiously, the back-to-nature attitude to the reproductive and sexual self in upper class women breaks down when it comes to menopause (Uberoi 2001). Increasingly, menopause is viewed as a problem rather than a welcome stage of life as it is for the women in the last category and is medicalized in the same way as it is in the West. Hormone replacement therapy is becoming increasingly popular and there is less patience with the idea that the menopausal woman is also a non-sexual being. Perhaps, it is the post-neomodern Indian woman who will find her traditional roots in this area of life.

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## **WHAT CONSTITUTES A VALID MEASURE OF REPRODUCTIVE MORBIDITY?: CLINICAL TESTS VS. WOMEN'S PERCEPTION**

*El Daw A. Suliman*

### **BACKGROUND**

For several reasons, including time and cost constraints, health policy makers and researchers tend to rely on health surveys in determining the prevalence of diseases, learning about health problems, and designing health interventions. One of the most widely used instruments in health surveys is the module of women's self-report of symptoms of diseases, particularly diseases with symptoms that are presumed to be recognizable to respondents. This approach is usually described as an alternative or substitute for medical examinations.

The self-report of symptoms is relatively inexpensive to conduct, easy to administer, and generally achieves higher response rates than other methods. But respondent failure to recall symptoms and variation in the degree of awareness of disease symptoms are well known weaknesses of this method. Medical examinations, on the other hand, are expensive, require a high degree of organization, and require medical personnel, which is usually scarce in developing countries. The strength of medical examination, however, stems from the fact that it is more objective and applies more scientific and rigorous screening of diseases compared to women's self-report of symptoms. This is not to say that medical examination necessarily provides the most reliable and valid measure of reproductive morbidity. Several factors could weaken its sensitivity and specificity in detecting a disease, including the type of the instrument used and the competence of the person operating it.

Empirical evidence from the literature casts serious doubts on the accuracy of self-report of the occurrence of disease and disease symptoms. Murray and Chen (1992) refer to studies that show a large discrepancy between self-reported morbidity and clinical examination (Krueger 1957; Belcher et al. 1976). They conclude that self-reported and observed morbidity correspond poorly and probably measure different aspects of illness and disease. By contrast, studies of chronic diseases show that self-reporting corresponds closely to medical diagnosis when the diagnostic criteria are clear (Colditz et al. 1987; Bush et al. 1989; Halabi et al. 1992; Midthjell et al. 1992). Zurayk (1995) refers to a study in the Philippines (Kalter et al. 1991) that shows "mothers are able to retrospectively report (sic) the signs and symptoms of their children's recent illnesses with sufficient accuracy for interview-based diagnosis." The study recognizes three criteria for diseases to be amendable to interview-based diagnosis: (1) conditions with a characteristic clinical picture in which the key symptoms are recognizable to a lay observer; (2) conditions of public health

importance; and (3) conditions that occur with sufficient frequency to be detectable by population based surveys of moderate size.

### **OBJECTIVE**

This paper aims to assess the extent of correspondence between women's self-report of symptoms and medical examinations in regard to reproductive morbidity. As an empirical test the paper will focus on prolapse among women from two rural villages in Khartoum, Sudan and two rural villages in Giza, Egypt. Prolapse, particularly in its severe forms, can have serious medical consequences, including urinary retention and stress incontinence, and may be psychologically disturbing (Zurayk et al. 1995).

### **DATA**

The paper will use data collected by surveys in the two areas mentioned above. The two surveys use the same methodology and the same instruments. Both were designed with the objective of collecting specific information on reproductive morbidity so that major reproductive health problems could be identified, priorities established, and changes in prevalence over time detected. The final samples included 188 women in Khartoum, Sudan and 508 women in Giza, Egypt. The response rate for the women of the Khartoum villages is relatively low, 78.9 percent (50 women refused to do the medical examination), while the response rate is 91.4 percent for women of the Giza villages, after a major effort by the research team to convince substantial numbers of women who had initially refused to participate in the medical examination. Among the reasons for refusal given by the 50 women of Khartoum were fear of finding a serious health problem and objection to being examined by a male physician.

### **METHODS**

The survey instruments include women's self-report of disease symptoms and medical examination. The women's self-report of disease symptoms is a subjective measure and depends on women's own perceptions about their health condition, elicited through a set of questions in the survey interview. The questions concerning symptoms of prolapse included in the questionnaire are: (1) do you have a feeling of heaviness below?; (2) do you have a feeling of protrusion of your reproductive organs?; and (3) how continuously do you have this feeling?. When a woman reports a feeling of heaviness below or of protrusion of the reproductive organs, the feeling is regarded as a symptom of prolapse (Zurayk et al. 1995). The same definition is adopted in this study. Medical examinations were done in clinics by physicians.

Women's self-report of symptoms and medical examinations will be compared using indicators such as sensitivity, specificity, positive predictive value, negative predictive value, percentages of agreement of the two, and the Kappa statistic (mathematical formula and the meaning/definition of these indicators are presented in Table 6.1). It should be noted that the cutoff point selected to indicate a woman's positive report of a symptom affects sensitivity and specificity. Changing the cutoffs for prolapse as specified above would change both of them. For reports to be valid, both sensitivity and specificity must be high, but usually for any cutoff point sensitivity is sacrificed for specificity and vice-versa (Galen 1979). The predictive value of reported symptoms is important because it provides information about the relative magnitude of accurate positive and negative predications from women's reports. The

percentage of agreement indicates overall efficiency in representing agreement between women’s reports and medical diagnosis. The Kappa statistic is also used as a summary measure of agreement because it improves upon the later measure by discounting the proportion of agreement that is to be expected according to chance (Maclure and Willett 1987).

**Table 6.1**  
**Comparisons of Women’s Report of Symptoms with Medical Diagnosis of Presence of Disease and Evaluation of Women’s Reports.**

(a)

<i>Women’s Report of Symptoms of Prolapse</i>	<i>Medical Diagnosis of Presence of Disease</i>		
	Yes	No	total
Yes	A	b	a+b
No	C	d	c+d
Total	a+c	b+d	n

(b)

<i>Appraisal</i>	<i>Formula</i>	<i>Meaning/Definition</i>
Sensitivity	$a/(a+c)$	Ability of a symptom to lead to detection of disease if present
Specificity	$d/(b+d)$	Ability of a symptom to cause the ruling out of disease if not present
Positive predictive value	$a/(a+b)$	proportion of those who reported a symptom and for whom the disease is present
Negative predictive value	$d/(c+d)$	proportion of those who did not report a symptom and for whom the disease is not present
Agreement	$(a+d)/n$	proportion of those whose reporting of a symptom is consistent with the presence of disease
Kappa*	$(P0-Pe)/(1-Pe)$	Proportion of agreement discounting the proportion of agreement that is to be expected according to chance alone

*Note:* P0=Observed percentage of agreement.  
 Pe= Expected percentage of agreement.  
 A Kappa value above 0.75 represents excellent agreement beyond chance,  
 0.40-0.75 represents intermediate to good agreement  
 A kappa value below 0.40 represents poor agreement (Gordis 1996).

*Source:* Zurayk et al. (1995).

**RESULTS**

Table 6.2 shows the prevalence of prolapse as determined by reports of symptoms and medical examination. As shown, 64 percent of women in the two villages of Khartoum and 67 percent of women in the two villages of Giza have prolapse (according to either or both sources of diagnosis). The bulk of prevalence among women in villages of Khartoum is self-reported (62 percent), compared to only 11 percent reported by women of Giza villages. Medical examination shows only two percent of women of the Khartoum villages having

prolapse compared to 36 percent for women of the Giza villages. The two diagnoses poorly correlate for the women of the Khartoum villages (one percent) and barely match for women of the Giza villages (20 percent). This obvious discordance between the report of symptoms and medical examination in both areas under study is worth examining in detail.

**Table 6.2**  
**Prevalence of Prolapse by Reports of Symptoms and Medical Examination, Khartoum, Sudan 1996 and Giza, Egypt, 1989-90.**

	<i>Reports Only</i>	<i>Medical Exam</i>	<i>Reports &amp; Medical Exam</i>	<i>None</i>	<i>Total</i>
Giza, Egypt **	11.0	36.0	20.0	33.0	100.0
Khartoum, Sudan *	61.0	2.0	1.0	36.0	100.0

*Note:* \* Computed from the data file  
 \*\* From Zurayk et al. (1995).

Table 6.3 shows women's reports of symptoms of prolapse tabulated against clinical examination and the evaluation of women's reports. The table shows low sensitivity of women's reports for both the Khartoum (33 percent) and the Giza (36 percent) villages and low specificity for the Khartoum villages, but relatively high specificity for the Giza villages (76 percent). The positive predictive value for the Khartoum villages is extremely low (2 percent) compared to the Giza villages (66 percent). The negative predictive value for the Khartoum villages is high (94 percent) as compared to the Giza villages (48 percent), indicating that women of Khartoum villages tend to predict more accurately the absence of prolapse. Agreement between women's reports and medical examination is very poor in both the Khartoum (37 percent) and the Giza (54 percent) villages, with the women of the Giza villages showing better agreement. The Kappa statistic shows that in both Khartoum and Giza the extent of agreement (net of agreement by chance alone) is very poor (-0.03 and 0.11 respectively).

It is worth mentioning that Zurayk et al. (1995) did a similar analysis for the Giza villages, stratifying by socioeconomic and other sample characteristics. The extent of agreement between women's reports and medical examination was compared for educated and uneducated women, for women 40 years of age and older versus younger women, and for women who have had five or more childbirths versus women of low parity. These analyses did not improve the level of agreement significantly.

## **DISCUSSION**

The results of agreement and Kappa statistics reveal that women's self-report of symptoms of prolapse differs from medical examination in both areas under study. Thus, it is obvious that the two methods are not perfect substitutes for each other. In particular, the reports of symptoms by the women of the Khartoum villages vary a great deal. The relatively high level of non-response to medical examination among the women of the Khartoum villages raises suspicion about the credibility of the observed prevalence of prolapse, as evidence by the clinical tests, particularly if the 50 women, who refused to do the medical examination, are a group with relatively higher prevalence of prolapse. This group gave fear of finding a serious health problem as one of their main reasons for refusing medical examination. This, however, does not necessarily mean that they actually had a higher incidence of prolapse.

**Table 6.3**  
**Women's Reports of Symptoms of Prolapse by Physician's Diagnosis of Prolapse, and Evaluation of Women's Reports, Khartoum Sudan, 1996 and Giza, Egypt 1989-90.**

(a)

<i>Prolapse (Physician Diagnosis)</i>					
Khartoum, Sudan*			Giza, Egypt**		
Yes	No	Total	Yes	No	Total
2	114	116	104	54	158
4	68	72	182	168	350
6	182	188	286	222	508

(b)

<i>Women's Report of Symptoms of Prolapse</i>		<i>Evaluation of Women's Reports (Percent)</i>	
Sensitivity		33	36
Specificity		37	76
Positive predictive value		2	66
Negative predictive value		94	48
Agreement		37	54
Kappa		-.03	0.11

Note: \* Computed from the data file  
 \*\* From Zurayk et al. (1995).

Zurayk et al. (1995) argue that women in Giza are socialized to endure pain and discomfort, particularly if these result from conditions related to their reproductive functions. Moreover, women may internalize symptoms or pain associated with reproduction as a normal part of their lives. This internalization is likely a result of the strict cultural constraints placed on women by the society and may reflect a certain style of communication between men and women and wives and their husbands regarding reproductive issues in general.

The high percentage of women who reported symptoms of prolapse but clinically tested negative raises worry about possible discrepancy between the concept of disease as perceived by women under study and the medical diagnosis. At least for their physiological well-being those women should know the medical diagnosis of their health status. The question that arises here is whether it is a matter of lack of knowledge about the symptoms of the disease or a matter of the perception of the disease within the women's social and cultural context. I would say that it is possible that the issue here is partially lack of knowledge. Further research is needed concerning medical examinations for prolapse and self-reporting of symptoms to ascertain the true situation.

## RECOMMENDATIONS

- ? Employ small scale medical examination surveys with rigorous screening tools and competent medical personnel, which can provide morbidity information that health planning and intervention evaluation for their programs.
- ? Raise women's awareness of these alternative ways of seeing health and disease symptoms that may differ from their prior ways of seeing but still may be consonant with the cultural context of the society.



- ? Launch interventions that could bridge the gap between men and women in discussing women's health problems.
- ? Provide the option of a female physician for women in culturally sensitive settings, particularly in rural areas.

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## **BADU GUAN: A CELEBRATION OF HIGH FERTILITY AMONG THE AKAN PEOPLE OF SOUTHERN GHANA**

*Samuel Kweku Enos*

Among the Akan People of the south of Ghana each birth is a celebration. Before the Ghana stock exchange opened, and still today for the majority of Ghanaians, the best investment to make during your lifetime is to have a large number of children, so that in your old age they will *look after* you. In fact I am not aware of the existence of any old peoples' homes in Ghana, because the old generally live with their children. There is a proverb in the Akan language that translates to something like "*if I have taken care of you for your teeth to appear, respond by taking care of me till my teeth disappear.*" Folk songs, patterns of inheritance, traditional music, local theatre and oral tradition of history instill in the mentality of women that the normal thing to do is to have a large family. That is why women who do not have children form the greatest part of depressed patients in Ghana. Barrenness is considered to be the greatest curse that can be "hung on the neck" of a woman.

The festivities surrounding each birth in Ghana are joyous. Among the Akan each place in the birth order is given a name (not to be confused with the day name of the child, as every day has its name. The first-born is the *Abakan*, the literal translation being the "opener" or the "beginner." The very name connotes an expectation of more to follow. The third child is a *mansa*, or *mensah* if the gender of the preceding children is the same. The fourth is *annan* (Kofi Annan was therefore born on a Friday, and is the fourth born to his parents) the fifth *enum*, the sixth *essia*, the seventh *esson*, the eight *awotwe*, the ninth *ackon*, and the tenth *Badu* (*anglicized to Baidoo*). The very fact of the existence of the special birth order names should convey the importance given to the categorization of the birth order, and the premium attached to increasing birth orders, as well as the sense of the normality of high birth orders for Ghanaians, especially the rural Ghanaian.

Traditionally, somewhat akin to wedding anniversary celebrations in Western countries (with gifts of paper, wood, silver, gold, etc., corresponding to successive anniversaries) each birth order has its own festivities, rites and customs. In the past, the eleventh child was referred to by a term literally meaning "*left in the bush*" because its parents either killed it outright at birth or abandoned in the forest, a practice that has been abandoned among the Akan except in very "culturally resistant" communities like Nzenma land where the tradition is still secretly practiced. The reasons for the alleged murder of the eleventh child are unknown to me, but I speculate that it was society's way of telling a couple to end their reproductive duties. It definitely has religious significance attached to it.

Of all the birth order celebrations, none is so elaborately celebrated as that of the *badu*, the tenth born. That is when the husband is supposed to sacrifice a ram, called the *badu guan*, for the wife. This is to thank her for making him a hero in the community. It is in fact considered the greatest honor a woman can earn in her life from her husband. A party is

thrown and all relatives are invited from far and wide. The mother is dressed in white and white clay is smeared on her (white clay smeared on the body is a symbol of victory). The husband buys her 10 pieces of cloth and his family sends her ten wide basins of foodstuffs, a basin each of yam, tomatoes, onions and other kinds of food. In present day Ghana the range of gifts have expanded to precious beads, expensive jewelry, farmland, cars, and landed property and other estates.

For a whole week visitors bring presents to the woman in multiples of ten as a sign of appreciation of her accomplishment and her bravery in childbirth, and to thank God and the gods for her survival. On the seventh day, amidst drumming and dancing, the community gathers and there is eating and merry-making. The woman sits in state to receive her presents. There is no other time in an Akan woman's life when she is praised more and receives more attention than during this period of her life. Perhaps the only thing which even comes close is her puberty initiation rites, (which, incidentally, advertise to men that she is ready to be married, ready to *start* her reproductive cycle.)

The *badu-guan* ceremony signifies the community's agreement that the woman has *finished* her normal reproductive duties. The implication is that the community in which she lives does not consider any woman who has not finished her reproductive career a woman of any substance. She is by this celebration allowed to refuse to deliver any more children. That is why the eleventh child is "sent away," killed or left in bush, because it is a taboo child, or a spirit child. After this ceremony the role of the woman in the community changes dramatically. She is counted among the accomplished women, and is considered a leader in the community. Her husband is expected to accord her more respect and difference, and she is supposed to have acquired some spiritual powers. After this ceremony, a man who wants to have more children is usually "allowed" by the wife to take a younger wife to do the reproductive duties and to take care of and serve the older wife.

This is a practice of the Akan tribe of Ghana, which comprises about 12 million out of Ghana's 19 million people. This sense of what is normal in the reproductive life of the Akan woman is probably not unique to the Akan of Ghana, but may be seen in other tribes along the West coast of Africa, and may actually contribute to the particular resistance of women South of the Sahara to adopt family planning to limit the number of children they bear in their lifetime. This practice obviously affects the decision of women among the Akan whether or not to have more children, and affects their attitudes toward family planning uptake and use. A woman is not considered to have done her husband honor if she has not had the tenth child. And a man who fails to do the *badu guan* ceremonies for his wife and the mother of his children is considered one of the most worthless people of the tribe. He is likely to lose any traditional position he holds. He loses his seat on the elders' committee, his respect in the community, his social status; he loses face.

For the West African woman, who many would say is highly oppressed and overworked, this ceremony is something to aspire to. It is like a wonderful vacation from a lifetime of troubles. Its necessity and its normality are built into the consciousness of women of child-bearing age, as they silently bear all the burdens and continue to have child after child, despite risks of death, poverty, hunger and deprivation. Their hope is that their day of glory will come when their golden day of the *Badu-guan* ceremony will be celebrated. They will earn the respect of the whole community, including their fellow women, recognition from their husbands, and property for their children in the form of buildings, farmland or family treasures. They will have "arrived."

Childbirth is generally considered by the medical community to be a physiological process and not a pathological one, and the risk of dying in childbirth in developed countries is extremely small. But the risk of dying in childbirth in the developing world continues to be very high. The risk of complications related to pregnancy remains much higher for the

sub-Saharan African woman than for her counterparts in the developed world because of pre-pregnancy illness, poor diet, lack of access to quality health care services and especially reproductive health care services, a deficiency of emergency obstetric care, unsupervised delivery, overwork, illiteracy and poverty.

As the birth order increases certain risk factors also increase. It becomes more and more risky for a woman to bear more children. Hypertension causing eclampsia, the risk of bigger and bigger babies leading to obstruction of labor, the higher risk of antepartum and post partum bleeding, cord prolapse, premature rupture of membranes, spontaneous abortions, *abruptio* placenta, *placenta previa*, and birth defects like Downs Syndrome at older maternal ages, and a weakened uterine wall—all make higher order deliveries more and more dangerous. As the birth order increases, so does the risk of problems like vesico-vaginal fistula and uterine prolapse. With each birth the uterine wall becomes thinner and thinner, in fact to the width of paper, only weaker. Maternal mortality is high at the beginning of a woman's reproductive life and rises with increasing birth order, because of the aforementioned reasons, among many others. Ghanaian women are aware of the dangers associated with childbirth and with increasing parity –births. That is why the greeting for women after birth is “*mema wotsir nkwa*,” meaning “*I am greeting you, lucky one, who has escaped from death.*”

The fate of unlucky ones who die or are maimed by childbirth, however, is often attributed to witchcraft by a jealous sister, an unhappy mother in-law or “one of the old ladies in the village”, or it might be attributed to a broken oath, infidelity, or some other unfounded reason. The death of a woman is rarely blamed on the negligence of medical personnel, lack of geographical or financial access to health services or some of the other real reasons why 33 out of every 1000 women who deliver do not live.

One would imagine that a life of pregnancy and delivery, every other year, from age eighteen to the early forties, would leave the bodies of most of these women drained of all energy and zest for life. While I could not find any scientific papers on the relation between multi-parity and body shape, strength or form in my search, I will describe my personal observations of such women in the ten years I worked as a general practitioner in Ghana. After October 1996, after training as a provider of voluntary surgical contraception in the form of mini-laparotomy and Norplant to women, I came across a few of these “grand multips” who had come to seek contraception. To me it was like killing a snake after it had bitten you. However, what I found out in interviewing them with the intention of pre-service counseling and in the process of provision of service was that these often believed that they had been doing their required duties to their husbands, in providing them the children they wanted. They thought that under no circumstances should they refuse their husbands sex. They were often illiterate, or semi illiterate, living in rural areas. They were often aware of the existence of family planning services, but blamed their husbands for not using it.

Their bodies were often, surprisingly, very firm looking, which I attribute to the “unintended workout” they do daily—grinding, pounding, weeding, walking long distances from their farms looking for water and firewood and generally overworking themselves in the care of their large families. Obesity among these women appeared rare to me. The striae of their multiple pregnancies were often a telltale sign on their abdomen, which was often heavily wrinkled and rather loose. Their breasts were another telltale sign. The severely flattened breasts indicated a history of heavy breastfeeding. On vaginal examination, the one differential sign is the look of the cervix. Women who have never given birth have a circular opening to their cervix, and the cervical opening is a pinhole, very small. However as birth order increases, the os of the cervix changes from a pinhole and becomes a slit, whose size increases with each birth order by a very small margin.

Contrary to the fears of many women of their vagina becoming bigger and bigger with each birth, the size of the vagina does not really increase in the long run. The muscle that the walls are made up of has the ability to expand, and like an elastic band, contracts to its original size because of its elasticity. This unfounded fear makes many women choose to have Caesarian section over normal vaginal delivery, putting themselves at risk of anesthetic and surgical complications. The same fear leads women to indulge in a practice that has been nicknamed “regular maintenance”, in which various chemicals, herbs and concoctions are inserted into the vagina, ostensibly to make it tighter for the enjoyment of their men. In my opinion this is yet another facet of the psychological oppression that men have indirectly put on women, as some of the chemicals have seriously injured women and may be contributing to the increasing incidence of cervical cancer in Africa. Internally during caesarian sections, the uterine walls of these women were extremely thin

Despite the outward impression of tenacity, an underlying sense of frailty in such women was clear to me. These women did not consider themselves to have been made abnormal by their multi-parity, or their bodies to be abnormal in any way. The cultural context surrounding breasts, for instance, although changing, has been traditionally that of *no big deal*. Neither is a firm abdomen a societal craze, as it seems to be in some other areas. Women young and old expose their breasts in Ghana and all over Africa without any qualms. However, these factors do not deter women from striving to achieve the Badu-guan. Studying the custom clearly contributes to the psychological understanding of what is a normal reproductive career for many West African women. The compulsion for women to go on to deliver a tenth child so they can have the Badu-guan ceremony done for them, just because of the concept of normality—that is, the ideal achievement—of the tenth birth, is interesting. It is hard to understand whether the women who go on to deliver so many children have the knowledge about the risks of multiple deliveries or not. Although the percentage of women who have ten births has decreased over the period between the two demographic and health surveys of 1990 and 2000, 14 percent of women under 49 continue to have ten children, a figure that is still very high in terms of national reproductive norms. The conception of every birth being an investment in their future is an overwhelming desire for many women, who, despite the high risks, continue to have more children, who they hope will grow up to look after them. In my opinion, cultural context will continue to shape the reproductive behavior of Africans for a long time to come despite rapid Westernization and so called civilization that is taking place at such speed all over the continent.

## DEBATING THE IMPACT OF FEMALE EXCISION ON CHILDBIRTH IN COLONIAL KENYA<sup>1</sup>

*Lynn M. Thomas*

During the 1920s and 1930s, Protestant missionaries, colonial officials, politicians, parents, and young people in central Kenya debated whether female excision should be regulated, banned, or left alone. Usually referred to as the Kenyan “female circumcision controversy,” these debates extended from rural households and mission stations to government headquarters in Nairobi to the House of Commons in London. Historians have usually viewed these events as the most significant period of anticolonial resistance in central Kenya prior to the Mau Mau rebellion of the 1950s (Rosberg and Nottingham 1970, ch. 4; Murray 1974; Lonsdale 1992). In this paper, I will examine the “female circumcision controversy” not as a proto-nationalist struggle but as a conflict over what constituted normal and healthy childbirth. One of the main reasons why female excision roused such deep sentiments and virulent protests was because Protestant missionaries believed that it confounded proper reproduction while many others in central Kenya were convinced that excision, as a part of adolescent initiation, enabled disciplined fertility and facilitated childbirth. Elsewhere, I have argued that colonial campaigns targeting female initiation contributed to the elaboration of new political hierarchies and challenged older women’s ability to control sexual and reproductive relations (Thomas 1996, 1998, forthcoming). In the following pages, I will examine how debates over female initiation entailed competing perspectives on normal and pathological childbirth and suggest how some medical practitioners and colonial officials sought to negotiate a middle ground.

From their first years of activity in central Kenya, Protestant missionaries confronted the practice of female initiation. As early as 1906, Church of Scotland (Presbyterian) missionaries preached against excision together with its attendant celebrations, dances, and teachings as “barbaric” and “indecent.” On a couple of occasions, missionaries allowed girl students to be initiated on the mission station, under the guidance of local Christian women and away from ceremonies that placed “undue emphasis on sexual life.” These female initiations followed the model of “purified” male initiations which had been taking place at mission stations after 1909. Jomo Kenyatta himself was circumcised on a mission station. Unlike the male procedures that were performed by hospital staff, however, the female ones were carried out by the “usual Kikuyu woman circumciser.” These procedures soon proved to be too much for the missionaries to handle. Following the performance of one such procedure at the Tumutumu mission station in 1915, the senior doctor decided that because “the cruelty shown by the old woman was so great...

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he would *never* allow anything of the kind again” (Church of Scotland, December 1, 1931a, Colonial Office [hereafter CO]/533/418/2, Public Record Office [hereafter PRO]; Rosberg and Nottingham 1970: 114; Murray-Brown 1972: 51-52). “Cruelty,” in this context, probably referred to the severity of the cutting involved and the apparent pain endured by the initiate.

While Protestant missionaries might refuse to condone female initiation, they were compelled to accommodate it if they wanted to have girl students and Christian brides for their male students. For example, Methodist missionaries in Meru, a rural area located in the northeastern region of central Kenya, taught young, uninitiated girls, together with boys, realizing that they would stop attending classes once their time for initiation approached.<sup>2</sup> The Methodists held separate classes for initiated girls who were betrothed to mission boys. Following their initiations, such girls were brought by their fiancés to the mission station where they were taught “mothercraft and the Christian ideal of marriage” (Jones 1985: 1-14; Hopkins, January 1, 1934, KD/B/1, Archives of the Methodist Church of Kenya Offices, Nairobi [hereafter MON]). In their efforts to educate boys and girls and to create Christian households, Protestant missionaries were impelled to engage a social world ordered by female initiation.

As Protestant medical work expanded during the 1920s, missionaries began to ground their opposition to female initiation in health concerns. While they obliquely referred to the potential sexual consequences of excision by describing it as “sexual mutilation” and occasionally suggesting that the practice aimed to decrease “sexual passion,” Protestant missionaries emphasized the medical consequences. They insisted that, in the short-term, excision often lead to hemorrhaging and infection. Differentiating between a “minor” form which entailed the removal of the clitoris alone and a “major” form which involved the removal of the clitoris, *labia minora*, and part of the *labia majora*, Presbyterian doctors argued that the “major” form produced scar tissue that lead to impaired urination, menstruation, intercourse, and, most importantly, complications during childbirth. According to this perspective, excision scar tissue, by prolonging or impeding childbirth, resulted in stillbirths, infections, vesico-vaginal fistulas, and maternal deaths (Philp 1924, 1925, 1927; Gillan 1929; Church of Scotland, December 1, 1931a, CO/533/418/2, PRO).<sup>3</sup> Male genital cutting, however, was not unknown in contemporary medical circles in Britain and America. Medical doctors on occasion performed clitoridectomies to cure epilepsy and hysteria and to curb masturbation in female patients (Sheehan 1981; Jalland and Hooper 1986: 250-265; Masson 1986:137-138). But Protestant missionaries saw nothing therapeutic about excision as practiced in central Kenya. Instead, they charged it with confounding reproduction.

Opposition to female initiation grounded in arguments about infant and maternal mortality resonated with colonial officials' concern with low population growth rates in East Africa. In a 1930 circular to the governors of the East African dependencies, Lord Passfield, the secretary of state for the colonies, squarely located excision amid these demographic concerns (Passfield, March 8, 1930, CO/822/27/10. PRO). He asked the governors to comment on whether the “slow increase of population” was “in large measure” attributable to female “initiation rites.” Arguments about excision complicating childbirth and adversely affecting population growth

<sup>2</sup> Demarcated as an administrative district by colonial officials in 1910, Meru covered over 9,900 square kilometers including the eastern slopes of Mt. Kenya, the equally verdant Nyambene hills, and the drier surrounding plains, and, by 1948, encompassed over 320,000 people. Kikuyu intellectuals and politicians including Jomo Kenyatta have often considered Meru as part of Kikuyuland. People in Meru do share with Kikuyus as well as Embus, their neighbors to the south, strong cultural and linguistic similarities as well as an uneven history of political alliance. They speak closely related Bantu languages and, in the pre-colonial period, they lived in similarly organized small agricultural communities that interacted with each other through trade and marriage as well as cattle raiding and warfare. During the colonial period, however, Meru intellectuals and leaders together with British officials and missionaries worked to establish Meru as a distinct language and “tribe.” Much of my book focuses on this area of central Kenya.

<sup>3</sup> In a rare effort to quantify the aftereffects of excision, one doctor estimated that ten per cent of excised women suffered complications later in life (Gilks, March 15, 1930, CO/533/394/11, Public Record Office [PRO]).



captured official attention, if not official resources. The Kenyan government was especially sensitive to accusations that it was neglecting the health and welfare of African populations. During the 1920s, metropolitan and local critics of colonialism repeatedly accused it of placing settler profits before African betterment by enforcing coercive labor policies and using African tax money to subsidize settler agriculture (Wylie 1977; Berman 1990: ch. 4).

The debate over excision in Kenya came to a head in 1929-31 with Protestant mission societies urging their adherents to renounce the practice, and the Kikuyu Central Association (KCA), a black political organization critical of colonial policies, defending it. Thousands of young men and women protested antiexcision efforts through performance of the *Muthirigu*, a dance-song which denounced those opposed to the practice and accused them of corrupting custom, seducing girls, and stealing land. Administrators in Nairobi moved quickly to prohibit performance of this critique of colonial authority (Murray 1974: 136-44). During the first half of 1930, they also seriously considered complying with missionary requests and instituting a colony-wide ban on the "major" form. But in September 1930, the results of a central board of health investigation revealed the difficulties of instituting such a ban. The investigation found that the "major" form was far more pervasive in central Kenya than the "minor" form. Of the 374 Kikuyu women examined by medical doctors, only three had undergone the removal of the clitoris alone and only four were unexcised (Gilks, September 6, 1930, Health2/164, Kenya National Archives [hereafter KNA]).<sup>4</sup> In light of this revelation, the acting governor concluded that it would be politically impossible, given the strength of the previous KCA and *Muthirigu* protests, to enforce a ban. A well-publicized but unenforceable law could only damage colonial prestige (Cashmore 1992). Instead of instituting a ban, the acting governor recommended and the secretary of state for the colonies accepted that excision be combated through "education and propaganda and such administrative action as can be undertaken with the assistance of the native authorities themselves" (Shiels, January 1, 1931, CO/533/394/11, PRO). Over the next few years, local native councils passed a series of resolutions aimed at restricting the severity of excision on a district by district basis.

Protestant missionaries were partially successful in engaging London-based humanitarian and feminist groups in their campaign. Female parliamentarians and women's rights organizations argued before the House of Commons that excision should be banned because of the dangers it posed to infants and mothers during childbirth. Historian Susan Pedersen (1991) has argued that while such maternalist rhetoric enabled a wide range of women from the conservative Duchess of Atholl to women's rights advocate Eleanor Rathbone to support a prohibition on excision, it limited their condemnation to the "major" form, as the removal of the clitoris alone was not found to produce scar tissue. Like Protestant missionaries, women activists only obliquely addressed the potential sexual consequences of the procedure. Pedersen describes how the Duchess of Atholl alone was brave enough to challenge the notion that the "minor" form, entailing the removal of the clitoris alone, was "trivial." Pedersen reveals how women activists lacked a "forthright (and anatomically explicit) public rhetoric" through which to define the clitoris as a sexual organ and "minor" form of excision as an assault on female sexual pleasure. Ultimately, the reproductive framing of excision prevailed as it was easier to defend women as mothers than as sexual beings.

Many black central Kenyans also linked female excision to childbirth and reproduction. But rather than viewing excision as frustrating these processes, they believed that it facilitated them. Verses from the *Muthirigu* dance-song described uninitiated women as ill-mannered and incapable of reproduction. In the following verse translated from the original Kikuyu, *Muthirigu* performers sang that a church leader's daughter who had not undergone initiation would be unable to give birth to a proper human being: "*Elder of the Church, your uncircumcised daughter*

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<sup>4</sup> For responses to the committee's findings, see Moore, November 6, 1930, CO/533/394, PRO; and Colonial Office, December 1930, CO/533/407, PRO.

*is pregnant and she will give birth to dogs*”.<sup>5</sup> Ruth Mukiira, the first Methodist convert in Meru District to renounce and successfully avoid excision, faced similar denunciations. On January 26, 1934, missionary Muriel Martin wrote a letter to a colleague in London explaining that when Ruth married Kornelio Mukiira—a Methodist evangelist, teacher, and, later, minister—without being excised, she was “cut off and cursed by her people, the curse being, she should be childless.” Many black central Kenyans believed that a child conceived by an uninitiated female endangered the lives of kin and neighbors, bringing misfortune and even death, especially to children. Such pregnancies were a problem because they occurred within bodies that had not been prepared for procreation. Pregnancy and birth did not belong to children but to those who had become women through initiation. Ancestors demonstrated their disapproval of such pregnancies by ensuring that they brought ill-fortune (Lambert, January 1, 1934 and December 25, 1941, Lambert Papers, 1/7/1, Jomo Kenyatta Memorial Library [hereafter JKML]; Holding 1942; Interviews with Tabitha Maigene, October 17, 1990; Maliceral Igoki, 18 October, 1990).<sup>6</sup> By cursing Ruth with infertility, people expressed their anger with her renunciation of excision and probably sought to protect their own lives by preventing a dangerous creature from being born. When Ruth gave birth to a healthy baby boy in July 1934, Muriel Martin and other missionaries rejoiced. They hoped that the successful birth would convince others that proper reproduction did not depend upon excision.

Black central Kenyans also linked female excision to reproduction by arguing that initiation prepared women for childbirth and by insisting that both initiation and childbirth needed to be carefully controlled by senior women. They believed that excision and initiation strengthened women for the challenges of childbirth, particularly the pain, and curbed excessive sexual desire (Nyaga 1997: ch. 8; Nelson 1987: 221; Interviews with Sara Mwari, April 22, 1995; Beatrice Tiira, March 30, 1995; Margaret Karoki, April 5, 1995; Nancy Adams, June 26, 1995). Ethnographies from elsewhere in Africa, most notably Janice Boddy’s (1989: ch. 2; see also, Brett-Smith 1994; Ahmadu 2000: 297-298) work in northern Sudan, have explored how people instill genital cutting with the power to purify the female body, specifically the womb, making it fertile and ready for childbirth. Within central Kenya, initiation and childbirth powerfully contributed to the construction of relations of authority among girls and women. Whereas initiation situated a girl-turned-woman within the female hierarchies of her natal home, childbirth—particularly with a woman’s mother-in-law serving as midwife—located women in the female hierarchies of their marriage homes. The older women who presided over initiation and childbirth possessed the necessary knowledge and skill to facilitate reproduction, a process viewed as potent and potentially dangerous (Interviews with Margaret Karoki, April 5, 1995; Rael Kanini, May 18, 1995; Elizabeth M’Iringo, August 4, 1995; Holding 1940, n.d.).<sup>7</sup> For much of the colonial period, one of greatest obstacles to mission and government maternity work was women’s fear that if they gave birth in a hospital, they would be assisted by young women who had yet to give birth themselves and who were probably not uninitiated (Interviews with Elizabeth Kabita, May 3, 1995; Madeline Muthoni, April 3, 1995; Catherine Mutiria, June 12, 1995).<sup>8</sup> Most colonial officers, nurses, and doctors believed that single and school-educated girls

<sup>5</sup> This *Muthirigu* verse was drawn from T.H.R. Cashmore’s notes on S.H. Fazan’s [District Commissioner, Kiambu], report on female circumcision and performance of *Muthirigu*, 12 January 1930, ADM/15/3/5, KNA. For other *Muthirigu* verses, see Church of Scotland, “Memorandum prepared by the Kikuyu Mission Council on Female Circumcision, Appendix V -- The Muthirigu Dance-Song,” 1 Dec. 1931b CO/533/418, PRO.

<sup>6</sup> For such beliefs elsewhere in colonial Kenya and Africa, see Dobbs, January 12, 1930, MSS/Afr/s/665/1, Rhodes House, Oxford; Richards, 1982: 33-4; and McKittrick 1999: 268.

<sup>7</sup> For the power of older women in relation to reproduction in Kikuyu-speaking areas of central Kenya, see Kenyatta 1965: chs. 5-6; Clark 1980; Wipper 1989; Ahlberg 1991: 6, 62; Presley 1992: 27-28; 181; and Robertson 1996: 617.

<sup>8</sup> Women’s fears that hospital workers and midwives were unexcised were probably unfounded. While hospital staff, particularly Presbyterian missionaries, preferred to employ unexcised women, oral evidence suggests that this

or young women, aged between 16 and 25 years, made the best hospital midwives because they had the language and literacy skills to undertake coursework in Swahili and were free of family ties (Lady Grigg Welfare League 1946, File 16, Archives of the Methodist Missionary Society, Meru [hereafter MOM]).<sup>9</sup> But according to local reproductive logic, young, potentially unexcised, school graduates were exactly the wrong kind of women to be assisting in childbirth. For many black central Kenyans, separating excision from childbirth or eliminating it altogether meant introducing, rather than reducing, reproductive pathologies.

Confronted with these two very different understandings of the relationship between excision and childbirth, some medical practitioners and colonial officials, both white and black, worked not to eliminate the practice but to reform it. Within colonial Kenya, white medical opinion on the practice had always been divided. As discussed above, Presbyterian mission doctors strongly condemned it. Others, however, questioned whether the sequelae were so severe. For instance, one private practitioner who worked with black women in Nairobi considered that “the after effects of circumcision are negligible” (Gilks, March 15, 1930, CO/533/394/11, PRO). Similarly, an Italian doctor who worked at Catholic mission hospitals in central Kenya during the 1930s and 1940s concluded that “clitoridectomy does not deprive the local muscular tissue of the necessary elasticity as to hamper childbirth.” Privately, he noted that arguments against the practice that emphasized complications during childbirth left people “indifferent and suspicious” because they do not accord with “everyday experience” (quoted in Pick 1961: 165). Dr. J.L. Gilks (March 15, 1930, CO/533/394/11, PRO), the director of medical and sanitary services in Kenya during the “female circumcision controversy,” recognized that it was impossible to base an assessment of the practice on hospital admissions as women who had suffered complications from excision were much more likely than those who had not to seek care at hospitals. While Gilks (September 6, 1930, Health2/164, KNA) had hoped that the central board of health investigation would clarify the connections between excision and complications during childbirth, the board simply concluded that there was “considerable variation in the effects.” Divergent medical opinion combined with a delicate political situation to prevent a more precise conclusion (Moore, November 6, 1930, CO/533/394, PRO; Colonial Office, December 1930, CO/533/407, PRO).<sup>10</sup>

Within this context, some medical practitioners quietly worked to lessen the severity of the practice and prevent health complications. On October 16, 1931, Dr. H.W. Brassington, a Methodist missionary working in Meru District, wrote to Gilks asking whether it would be a breach of medical ethics for him to lend a scalpel to a local woman employed as a hospital assistant in order for her to perform a modified form of excision, entailing the removal of just part of the clitoris, on an assistant trainee. Brassington explained that the trainee’s father had requested the hospital assistant to perform the procedure so that his daughter could maintain “her tribal rites” while being assured of receiving a more modest and hygienic procedure (Health/BY/1/61, KNA). Gilks (October 29, 1931, Health/BY/1/61, KNA) responded by assuring Brassington that it would not be a violation of medical ethics “to assist either by instructing an unqualified person how modification could be introduced or even by lending a scalpel in order to enable an innocuous and clean ceremony to be performed” (Health/BY/1/61, KNA).

This effort by a father, hospital assistant, and medical missionary to develop a less severe form of the procedure was not unique. In his letter to Gilks, Brassington (October 16, 1931, Health/BY/1/61, KNA) mentioned that an African independent church that had broken off from the Church Missionary Society (Anglican) had already developed “a very modified form of the

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preference was rarely satisfied in Meru (Interviews with Nancy Adams, June 26, 1995; Muriel Chalkley, December 2, 1995).

<sup>9</sup> While the rules stipulated that married women were eligible, the medical officers’ emphasis was always on recruiting single women.

<sup>10</sup> For correspondence between Gilks and other medical doctors on excision and childbirth, see Health 2/164, KNA.

rite, which is less than clitoridectomy” (Health/BY/1/61, KNA). Resolutions passed by district-based local native councils (LNCs)—bodies comprised of local male officials and British colonial officers—also aimed to limit the amount of cutting involved. In 1925 and 1927, the Meru LNC passed resolutions forbidding the removal of more than the clitoris and requiring all “circumcision operators” to register with the council (Minutes, October 12, 1925 and June 1-3, 1927, LNC/1, Meru County Council Offices [hereafter MCC]). In 1932, the Meru LNC, under the guidance of district commissioner H.E. Lambert, passed a further resolution restricting excision to the removal of no “more than the tip of the clitoris and the small dark ridges of skin along the free edges of the *labia minora*” (Minutes, January 1932, LNC/1, MCC).<sup>11</sup> Together with LNC members, local headmen and police, and his wife who was a nurse, H.E. Lambert (May 14, 1931; July 7, 1931, PC/CP/8/1/2, KNA) sought to enforce these resolutions by training “registered operators” in the new guidelines and fining or imprisoning the mothers of initiates whose excisions violated the resolutions (Fadiman 1969).

The success of these efforts varied. In an interview conducted in 1990, Esther M’Ithinji and Julia Simion (Interview, October 14, 1990) recalled how during the late 1930s and early 1940s, *atani* (the women who performed excisions) carried permits on their walking sticks, certifying that they had undergone training in the new guidelines. In 1936, Clive Irvine, a Presbyterian doctor and staunch opponent of excision, reported that based on “his experience with women patients,” he believed that the less severe form was almost universal in the southern areas of the district. The government medical officer noted a similar decrease in the severity of excision in the northern areas (Meru District Annual Report 1936, 1939). Yet, Grace Lambert, H.E.’s wife and a trained nurse, recalled in a 1969 interview that thirty out of every one hundred initiates that she examined in the Chuka area had received an illegal form of excision (Fadiman 1969). Moreover, Methodist women missionaries recorded witnessing the severe procedure at two initiations in 1938 and 1939 near Meru town (Holding n.d.(a), MSS/7, KNA; Jones 1995: 22-25). By 1940, Lambert himself doubted the efficacy of the LNC resolutions. He was particularly dismayed to learn that older women were secretly performing second excisions, often just after childbirth, on young women who had undergone the legal procedure (Meru District Annual Report 1940). Although the LNC resolutions proved quite difficult to enforce, they represent the most ambitious colonial effort to situate excision as something between a pathological practice and an immutable and indispensable tradition.

Another initiative undertaken in Meru sought to minimize the impact of excision on childbirth. In an interview conducted in 1995, Muriel Chalkley, a British nurse who worked at the Methodist hospital during the 1950s, remembered how she instructed nursing and midwifery trainees to handle cases of obstructed labor caused by excision scar tissue. She taught them that when a baby’s head was stuck in the birth canal, they should make a small incision or “knick” on the scar, thereby loosening the tissue. This procedure, according to Chalkley, proved remarkably successful in preventing the need for episiotomies in that and all subsequent deliveries.<sup>12</sup> Chalkley’s development and teaching of this technique attests to how colonial medicine adapted to excision. Within hospitals, quiet accommodation often made more sense than obstinate

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<sup>11</sup> In 1934, Lambert convinced the Meru LNC to amend the 1932 resolution to limit excision to the removal of the *glans clitoridi* (Meru LNC, Minutes, August 8, 1934, LNC/2, MCC). For more on these LNC resolutions, see Thomas 1988 and Hetherington 1998.

<sup>12</sup> During the “female circumcision controversy,” Presbyterian doctors argued that excision made episiotomies or perineum tears unavoidable, particularly with first births. These doctors did not categorically oppose episiotomies. With the medicalization of childbirth, episiotomies had become increasingly common in inter-war England. Rather, they decried the “very crude and ineffective manner” way in which “old women in the village” performed them (Philp 1927; Gillan, February 23, 1930, Health/2/164, KNA; Braimbridge, June 10, 1935, Health/BY/1/61, KNA). On episiotomies in inter-war England, see Lewis 1980: 126).

condemnation.<sup>13</sup> Examination of debates over female excision in mid twentieth-century Kenya reveals how very different notions of pathological and normal reproduction could develop and become entangled within a colonial context. Much of the reason why female excision excited such controversy in colonial Kenya was because all involved linked the practice to the important but potentially dangerous process of childbirth. By the 1920s, Protestant missionaries and their allies recognized arguments about stillbirths, infections, vesicovaginal fistulas, and maternal deaths as the most persuasive grounds for opposing excision. From their perspective, excision confounded healthy reproduction by producing scar tissue and making the female body less pliable. But according to the reproductive logic that held sway in central Kenya, excision, as a crucial part of adolescent initiation, prepared female bodies for childbirth by disciplining them and forging links between young women and those—both living and dead—who could ensure their fertility. For many black central Kenyans, initiation transformed the female body into a reproductive body. Protestant missionaries had a very difficult time displacing this local understanding of the relationship between excision and childbirth. Ultimately, the most wide-ranging colonial initiatives aimed to reform rather than end excision. By seeking to make excision less severe and more hygienic, white and black medical practitioners and colonial officials blended reproductive paradigms. In the process, they reworked their own definitions of the normal and the pathological.

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<sup>13</sup> For other cases in the past and present in which health professionals have chosen either to accommodate or medicalize female genital cutting, see Bella 1984; Bell 1999; and Shell-Duncan and Hernlund 2000b; Orubuloye, Caldwell, and Caldwell 2000; Mandara 2000; Shell-Duncan, Obiero, and Muruli 2000; Gosselin 2000)

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## **ENDANGERING SAFE MOTHERHOOD IN MOZAMBIQUE: PRENATAL CARE AS PREGNANCY RISK**

*Rachel R. Chapman*

### **INTRODUCTION**

After decades of externally funded civil war and underdevelopment, Mozambique remains one of the poorest African nations. This plight is reflected in the high rate of maternal mortality at 1000 to 1500 per 100,000 live births, child mortality at 250 per 1,000, and infant mortality at 147 per 1,000 live births (Ministry of Health, Mozambique 1997). The estimated lifetime risk of maternal death in Mozambique is one in nine women (World Health Organization/United Nations/United Nations International Children's Emergency Fund 1996). Yet despite extensive public health campaigns promoting early initiation of prenatal care, women with access to prenatal services routinely delay consultations until late in pregnancy, thus limiting opportunity for early detection and treatment of preventable complications (Murata et al. 1992). To determine why women delay prenatal care, this study examined women's reproductive vulnerability and pregnancy management strategies in Central Mozambique. Specifically this paper explores the relationship between pregnant women's perceptions and experiences of reproductive vulnerability and their "under-utilization" of clinic-based prenatal care services.

Over the past decade, global awareness of maternal and infant mortality in the developing world and the importance of prenatal care has increased dramatically (Rosenfield 1989; Morsy 1995). Until recently few studies focused on local experiences of reproductive vulnerability and directly addressed prenatal care strategies of women in developing countries from an ethnographic perspective (Adetunji 1996). The processes by which poor women in developing countries make reproductive health care choices during pregnancy have been largely unexamined (Chapman 1998).

Despite the dearth of information about pregnancy management strategies of poor women, standard discourse on maternal mortality in developing countries often reveals underlying assumptions that poor women are incompetent and somehow undeserving health "consumers" (Marshall 1988). Such assumptions inform attitudes prevalent among biomedical health workers, health policy makers, and international aid donor agencies. The following remarks of a UNICEF spokesperson presenting a paper at a conference on maternal mortality and safe motherhood in Bangladesh capture this perspective: "Who is it that dies most from maternal mortality most often? People who do not listen to the doctors, are neither educated nor motivated, without time or money, and so forth. In other words, those less likely to have sought prenatal care" (Rohde 1995, S5).

It is on the "and so forth" of the above quotation that this paper aims to shed light. This paper proposes that women are responding to social and economic pressures they think

constitute the greatest threats to their reproductive health and unborn children. As a result, during early pregnancy women avoid the maternity clinic and instead seek protective and curative therapies from alternative health care providers in the informal sector who address their experiences of reproductive vulnerability rooted in ruptured social relations. For women in Mucessua, silence and hiding are the first expressions of prenatal caring.

## **BACKGROUND**

Research was conducted from June 1993 to May 1995 in Mucessua, a peri-urban neighborhood of Vila Gondola in Manica Province, Central Mozambique. Follow up research was implemented between January and June 1998. When the study was initiated in 1993, a fifteen-year, externally funded war had recently ended with a cease-fire, followed by multi-party elections in 1994. Peace and democracy, however, had not brought prospects of meeting even basic needs of the majority of Mozambicans. On the contrary, in 1995 it was estimated that for most Mozambicans, poverty had increased since the end of the war (Hanlon 1997, 17). Continued impoverishment of Mozambique's population is reflected in the high rate of maternal and infant mortality, a "most immediate and visible index of scarcity and unmet needs" (Scheper-Hughes 1992). Pregnancy and birth-related morbidity and mortality among Mozambican women and children are products of poverty and lack of health services that are the legacy not only of warfare but also of colonial exploitation, natural disaster, state planning failures, and harsh economic stabilization programs (Hanlon 1997, 15).

In response to this continuing health crisis, Mozambique joined the World Health Organization (WHO) Safe Motherhood Initiative (SMI) in the early 1990's (Povey 1990). Safe Motherhood Initiative is an international program to reduce the numbers of women injured, incapacitated, or killed by preventable and treatable complications during pregnancy or childbirth through provision of high-quality maternal health services.<sup>1</sup> Safe Motherhood campaigns for employ posters, radio announcements, and community health mobilizations with health care workers, local leaders, and village elders. They all promote initiation of prenatal consultations in the first trimester and monthly visits until delivery by a trained midwife or in a health facility. While many aspects of this upgrading process remain unrealized due to resource limitations, state maternity clinics provide several services demonstrated to reduce maternal and infant disability and death. These include folic acid and iron supplementation, detection and treatment of tuberculosis and malaria, tetanus immunization, detection and care of pre-eclampsia, and screening for and treatment of syphilis.<sup>2</sup> Nutritional counseling for pregnant mothers and weaning infants is also provided. Officially all maternal and infant health services are free of charge. This system ideally identifies women at high risk for pregnancy and/or obstetric complications in order to refer them to the appropriate level of care for treatment.<sup>3</sup> Early detection of pregnancy or obstetric

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<sup>1</sup> The SMI strategy adopted in Mozambique encompasses short and long-term goals of upgrading all levels of care within maternal health services including: domiciliary deliveries by traditional birth attendants, primary care, family planning, post-partum consultations, maternity deliveries, secondary care, communication and transport, waiting hostels, surgically equipped hospitals, and epidemiologic monitoring (Povey 1990).

<sup>2</sup> Although the scope of benefits accrued by routine prenatal care for all women is currently being debated, both researchers and health care providers agree that various components of prenatal care services have been associated with positive pregnancy outcomes for both mother and infant. No prenatal care, late initiation, and inadequate number of prenatal care visits are all associated with negative pregnancy outcomes in some cases, including increased maternal and infant mortality.

<sup>3</sup> This core element of the Mozambican Safe Motherhood Program is based on the WHO's "risk approach" (WHO 1978, WHO/UNICEF 1980). Beginning in 1980, a pregnancy control form for health personnel to fill out during initial prenatal examinations was introduced in antenatal clinics throughout the country "to monitor pregnancies and to help direct specialist care to mothers at greatest risk" (Jelley and Madley 1983, 111).

complication, however, depends on early initiation of prenatal exams and presentation at adequately equipped health facilities to give birth.

Despite public health messages and Ministry of Health (MOH) guidelines, most pregnant women in Manica Province delay prenatal care until after the first trimester. In 1994, a study of 1,016 women utilizing state prenatal care services reported that an estimated sixty-nine percent of all pregnant women in the district of Gondola initiated prenatal care in a state clinic at some point during pregnancy (Lafort 1994). The mean time for initiating prenatal care was six months. An estimated forty-four percent of women in the district who initiated prenatal care did not return to give birth in a health facility. Even when distance was not a factor, these patterns were the same for women throughout the area. The author of this study further asserted that no parallel prenatal care system existed in the region. Health care providers in the formal sector were frequently exasperated by this “noncompliance.” Why weren’t women coming into the clinics when they were told to come in?

### **UNDERSTANDING BARRIERS TO PRENATAL CARE**

A sizeable literature has demonstrated that both maternal and child health are strongly related to the adequacy of prenatal care (Fiscella 1995; Kogan et al. 1998; Villar and Bergsjö 1997). Less is known, however, about factors influencing adequate prenatal care utilization. Most research relies on institutional data from developed countries and focuses primarily on maternal demographic characteristics. Consistent patterns in findings from such studies facilitate construction of profiles of women who are more or less likely to get adequate prenatal care (St. John and Winston 1989). As St. John and Winston point out such profiles do not fully explain why some women get adequate prenatal care while others do not (p. 81). Increasingly, researchers are attempting to identify factors other than demographic characteristics that explain variations in pregnancy management strategies (Winston and Oths 2000; Joyce et al. 1983; Pagnini and Reichman 2000; Laken and Ager 1995; Lazarus 1990; Casper and Hogan 1990; Lopez 1988; Browner and Press 1996; Poland 1989; Albrecht 1996; Johnsen 1987; Sokoloski 1995; Corbin, 1987 St. John and Winston 1989; Whiteford 1996; Zambrana et al. 1997).

Studies of women in the developing world suggest that beyond structural access barriers such as distance, lack of services and transport, poor treatment by care providers, and ability to pay for services (Floriano et al. 2001), a constellation of demographic, psychosocial, cultural and socio-economic factors further mediate prenatal care seeking. Such factors as pregnancy timing and “wantedness” (Eggleston 2000), cultural preferences for alternative treatment (Adetunji 1996; Jirojwong 1996), pregnancy risk perceptions (Asowa-Omorodion 1997), and differences between local physiological and anatomical concepts of reproduction and biomedical models are believed to influence prenatal care use (Sesia 1997). These studies tend to emphasize the contrast between local cultural and biomedical explanatory models. This emphasis may reinforce an assumption that under-utilization of prenatal care is due to problematic traditional beliefs and lead to conclusions that cultural re-education of noncompliant communities will boost prenatal care use.

Other studies of prenatal care seeking have focused on the context of local explanatory models and the processes by which local perceptions of risk influence pregnancy strategies. When the political economic context of social and culturally patterned pregnancy management strategies is explored, researchers have found that explanatory models interact with broader social and economic forces. Class relations and economic decline (Sargent and Rawlins 1991), gendered work and reproductive labor expectations (Avotri and Walters 1999; Browner 1985), low status of women (Obermeyer 1993), women’s socio-economic circumstances, the structure and practices of the health system (Atkinson and Farias 1994), and gender-specific social and economic vulnerability (Chapman

1998) are equally important factors shaping explanatory models and mediating prenatal health seeking behavior.

There is little research that helps explain the pattern of delayed prenatal care in Mozambique specifically. One study conducted three years following the 1980 implementation of the risk strategy in maternal health clinics in Mozambique's capital, Maputo, found that the women most at risk for pregnancy and obstetric complications were not the greatest users of state prenatal services. The authors conclude that women identified as high-risk obstetric cases underused prenatal services in comparison to those identified as lower risk (Jelley and Madley 1983, 111). This study exposes a gap between service provision and utilization by women categorized as most in need of prenatal care, suggesting that barriers to prenatal care seeking exist that precede the limitations of the medical system. Much more information was needed about the communities at whom the Safe Motherhood Initiative in Mozambique has been aimed. Who seeks prenatal care services and who does not? When do they seek it, where and why? This paper examines the context and process by which socio-economic and cultural factors influence pregnancy management strategies and prenatal care decision-making from women's perspectives.

### **THE ETHNOGRAPIC SETTING**

Research was conducted in a *bairro* or neighborhood called Mucessua of approximately 5,000 inhabitants on the outskirts of Vila Gondola, a town located in the center of Mozambique in Manica Province. The District of Gondola is an appropriate site for this research. The maternal mortality rate is higher than the national average and maternal health service utilization is low and late. Bairro Mucessua was chosen for three primary reasons: safety considerations during the cease-fire, the author's rapport in the community, and distance of less than five kilometers between Mucessua and the Maternity Clinic. Residence further than five kilometers from a health facility was shown in earlier studies to create barriers to health facility utilization (Laforte 1994).

The majority of residents of Mucessua speak Shona-related languages, predominantly Chitewe and Chimanica. The area is devoted to private agricultural estates and subsistence agriculture. The parastatal Mozambique Railway Company, a private poultry factory, government service, and small-scale retailing, employ a small percentage of the local male population in wage labor. Most residents are engaged in subsistence agriculture and some in informal sector sale of produce, household necessities, home-made alcohol and used clothing. Male unemployment in Mucessua is estimated at eighty-five percent (Instituto Nacional de Estatística 1999). People survive primarily on maize and other grains grown in household fields called *machambas* and vegetables from individual riverbed plots called *matoros* along the Mucessua River. Mucessua is a rambling and crowded squatter community of poor, peri-urban small-holder farmers, many of whom moved to the town during the war for safety and stayed. Though a few families inhabit brick houses abandoned by the Portuguese at Independence, most live in small mud and pole homes with thatched or tin sheeting roofs and gather water from one of four communal boreholes or traditional wells. Only two homes in the sample of eighty-three had electricity, and only one had running water.

### **MATERNITY SERVICES**

Government health services in the District of Gondola include a district health center (DHC), a district maternity ward (DMW) and nine rural health posts (RHP) to serve an estimated population of 40,000. The DHC is equipped to examine blood for hemoglobin levels, screen for malaria and syphilis, and examine stool samples for hookworm infestation. The maternity ward, located one kilometer away from the DHC in a separate facility, and two of the nine district RHPs provide formal maternity services. Services offered at the maternity

ward include routine child delivery services, a well-baby clinic, prenatal and post-natal care, pregnancy and weaning nutrition counseling, family planning information, and limited contraception services. If complications occur during delivery that the maternity nurses cannot resolve, there is one district doctor, frequently a medical student doing a mandatory two-year rural residency, who can be summoned from the district health center one kilometer away. The two RHPs with maternity services are staffed by a maternal and infant trained nurse who conducts routine prenatal examinations, provides tetanus toxoid immunization and iron folic acid supplements, routine delivery services, and referral support for pregnant women. All nine of the RHPs are responsible for registering pregnant women and referring them to the DMW.

## **METHODS AND RESEARCH DESIGN**

In order to answer the specific question: Why do women routinely initiate prenatal care consultations in the formal biomedical health sector late (second or third trimester) in their pregnancies? The following research objectives were established to operationalize the research question: (1) provide an ethnography of pregnancy that contextualizes community knowledge, attitudes, beliefs about pregnancy, and practices related to prenatal health care; (2) identify and analyze patterns of prenatal health care-seeking of a representative sample of pregnant women; (3) identify and describe the range of health care facilities and providers utilized by women during pregnancy and childbirth; and (4) elaborate a taxonomy of problems, risks, and treatments during pregnancy.

Data were gathered using formal and informal interviews with eighty-three pregnant women during pregnancy and after birth, structured reproductive health history questionnaires, the collection of life histories from fifteen women in the pregnancy case study group, participant observation, and community focus groups. Women self-reported the number of months they were pregnant and the number of months pregnant at initiation of prenatal care. Data on health care alternatives in Mucessua were collected through in-depth interviews and observations of formal and informal sector health care providers at their sites of practice: doctors, nurses, midwives, healers, church prophets and pastors, herbalists, pharmacists, and health administrators. Key informant interviews and life histories were analyzed to identify themes, concepts, and explanations as well as to construct a taxonomy and explanatory model of possible threats to reproductive health and health seeking during pregnancy.

### ***Sampling Methods***

Aspects of the culture surrounding pregnancy presented challenges to selecting a random sample. It was quickly discovered that pregnant women in Mucessua do not like to talk about being pregnant. Initially, participants were recruited from each tenth compound across the *bairro* until one hundred pregnant women were enrolled in the study. This approach was met with great distrust and fear, and proved counterproductive. Instead, a snowball sampling method was used to recruit pregnant women who voluntarily attended research focus groups. This strategy gave women the option of exposing their pregnancy to family and neighbors only if they desired. Most preferred to come alone to the house of my research assistant, herself a resident of Mucessua, and put their name on the list to work with the *estrangeira* (foreigner). As the research progressed, more women heard about the project and volunteered. Using this method eighty-three pregnant women were recruited for the case study group.

There are several potential biases in this recruitment process. It may have selected women more likely to use the formal health care services, women who saw themselves or were seen by others as more educated or *assimilada* (Europeanized), and/or women with stronger social networks within the *bairro*. And yet, what was lost in random selection was gained in trust. Access to pregnant women and their *segredos* (secrets) was only possible

through trustworthy, grassroots networks of locally respected women. Based on socio-economic data gathered, the resulting sample was nonetheless representative of the range of cultural and economic variation in Mucessua. Using standard epidemiological calculations of the number of pregnant women in the Mucessua population of 5,000, the eighty-three case study sample represented one third of the estimated pregnancies in the *bairro*.

### ***Characteristics of the Sample***

Women in the sample ranged in age from fifteen to forty-nine, with a mean of twenty-six years. Most were non-literate, averaging 2.6 years of education. These women had little access to cash. Only two were formally employed, both as domestics in government offices, and only 35 percent reported earning cash that remained in their control from informal sector labor, mostly selling extra produce. Although there was some variation within the sample, most household incomes were low, sporadic, and fluctuated seasonally. The majority of households were extremely economically vulnerable. The mean estimated household income of 91,000 meticais (US \$9) was less than a third of what the government estimated would be needed to feed a family of seven for a month in addition to adequate subsistence food crops (Ministry of Health 1993). Eighty percent of these women had access to machambas, parcels of land cultivated with staple crops for family consumption and sale. Thirty-five percent had access to matoros, small vegetable gardens along riverbeds where they cultivate vegetables and fruits for consumption and sale.

## **FINDINGS**

Findings are presented from the eighty-three case studies of how women identify, categorize, and address problems during pregnancy and how they choose prenatal care. Data from the case studies are organized in relation to three dimensions of women's experiences of reproductive vulnerability. First, in order to illustrate women's physiological reproductive vulnerability, data are presented on morbidity and treatment seeking during pregnancy and frequency and types of reproductive loss among the case study group. Second, the influences on women's initiation of prenatal care in the formal biomedical sector are reported. The experience of reproductive vulnerability is examined by observing local reproductive health beliefs and perceptions of reproductive threats. A taxonomy of pregnancy complaints is delineated. Lastly, patterns of pregnancy illness episodes (defined below) and use of health care options for pregnancy management and prenatal protection in a medically plural health system are presented.

### ***Initiation of Prenatal Consultations in Government Clinics***

The majority of case study women reported initiating prenatal consultations after the first trimester. Nearly eighty percent initiated after the first trimester, compared to seven percent who initiated in the first trimester and six percent who did not seek clinical prenatal care. The majority of women initiated prenatal care between the fifth and seventh month when pregnancy is hard to hide and many women report fetal movement, but late, for example to prevent fetal damage from syphilis. The mean time for initiation was sixth months.

### ***Pregnancy and Reproductive Loss***

To understand why women with access to prenatal services delayed consultations, it was necessary to discover what motivated women to seek prenatal care at all. What were women's experiences of reproductive loss, and what problems did women experience and perceive as threats during pregnancy? Taking into account that losses may be under-reported due to the stigma placed on women who have repeated reproductive losses, data suggest that



women in Mucessua are extremely vulnerable to reproductive morbidity and loss throughout their reproductive years.<sup>4</sup>

Women in this sample had good reason to fear losing their pregnancy or infant before its first year. The number of previous pregnancies per case study women ranged from zero to eleven with a mean of four pregnancies. Nineteen women were pregnant for the first time. However, sixty-seven (77 percent) of the case study women with previous pregnancies had already had at least one pregnancy end in reproductive loss, slightly more than half of the case study women. The term reproductive loss refers to miscarriage, perinatal deaths (28 weeks gestation to one week post live birth), and infant deaths (one week post live birth to one year). Deaths of infants up to the age of one are included in this category because women believed that the death of nursing or weaning age children had a negative impact on one's future fertility, and as such, were considered a threat to reproduction. Past reproductive losses reported by the sample group were primarily infant deaths. Thirty-four percent of case study women reported losing an infant less than one year, thirteen percent had miscarriages, and nine percent had perinatal deaths. Twenty-six women had experienced one loss, nine women had two losses, three women had three reproductive losses, and five had four to six pregnancies end in loss.

Of the eighty-three case study pregnancies for which eighty-two outcomes were reported, three pregnancies resulted in miscarriages after the first trimester, five in perinatal deaths (four stillbirths, one neonatal), and three in infant death. No mother in the sample died from pregnancy or birth-related causes. In total then, eleven, or 13.3 percent of the case study pregnancies resulted in some form of reproductive loss.

### ***Health Seeking and Illness Episodes***

Women were asked to report all health seeking during pregnancy. Over the course of their pregnancies, the eighty-three women in the sample reported a total of 459 health seeking episodes. Eighty-seven additional episodes were estimated from maternal anti-tetanus vaccinations (VAT) records, making the total number of health seeking episodes for the group 546. Women were also asked to report all health problems and perceived threats to health during pregnancy, termed pregnancy illness episodes. Pregnancy illness episodes ranged from problems of the reproductive system and genitals to headaches, fevers, stomach problems, lack of blood, pains in bones and teeth, problems with chest, lungs, and heart, and fear of witchcraft. A total of 380 illness episodes were reported. The number of reported illness episodes during pregnancy per individual ranged from a high of eleven episodes to a low of two episodes with a mean of 6.5. A total of two episodes were recorded in only two of the eighty-three pregnancy cases. Women sought some kind of intervention for all but forty-three of the total reported illness episodes.

### ***Taxonomy of Reproductive Threats***

Women were asked to give the etiology of each reported pregnancy illness episode. Women described their illness episodes during pregnancy as falling into one of three broad etiologic domains. The first category of episodes included illnesses considered unrelated or coincidental to pregnancy. Malaria, colds, and non-ceremonially caused tuberculosis, for example, were regarded as naturally occurring "illnesses of the world" (*doenças do mundo*), often called "God-given" or "God-sent illnesses" (*doenças do Deus, doenças mandados por*

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<sup>4</sup> Any woman who has frequent miscarriage, still births or whose children do not survive is suspected of being a spirit wife, as is a woman who has difficulty in delivery except when she gives birth within the confines of her father's compound. Spirit wives and their offspring are threatened by spirit intervention if her social, especially sexual, behavior is knowingly or unknowingly in contradiction with her status as a *mukadzi we mudzimo* (wife of spirit elder or spirit of a dead relative, Shona.; *mulher d'espírito*: spirit's wife).

*Deus*). Such illness episodes were reportedly caused by natural agents such as mosquitoes causing malaria, contaminated food or water resulting in diarrhea, or contact with an infectious person. These episodes were most frequently self-treated with pharmaceuticals or at the district health center.

A second category of pregnancy illness episodes were referred to as “symptoms of pregnancy” (*sintomas da gravidez*), health problems caused by pregnancy itself resulting in discomfort or severe symptoms. Symptoms of pregnancy were considered routine, though often debilitating, physical manifestations of the normal process of pregnancy, for example tooth aches, sore legs, back pain, or varicose veins. Women sought treatment for symptoms of pregnancy from many sources including indigenous healers, *curandeiro*, churches, pharmacists, the maternity clinic, and the health center.

The third category of pregnancy illness episodes was considered the most serious reproductive problems. These included difficulty conceiving, hemorrhaging, threatened miscarriage, constant illness, lactating during pregnancy, previous reproductive loss of any kind, and all birth complications. They were most frequently diagnosed as being caused by witchcraft or sorcery, *uroya* in Chitewe or *fetiço* in Portuguese, or by intervention of *mal espirito* (bad spirit). Once diagnosed as a personalistic illness, a problem caused by a human or spirit agent directing harm at a specific individual (Foster 1983), these serious conditions were always treated outside of the biomedical sector.

Significantly, of all the reported illness episodes for which pregnant women sought treatment, almost one fourth were reportedly caused by witchcraft or bad spirits. Under certain conditions, diagnoses for an illness shifted from one of the first two domains—natural or symptoms of pregnancy—to a diagnosis of personalistic harm caused by witchcraft. This occurred when one or more of the following conditions applied to the symptoms experienced: inability of biomedical analysis to detect any problem, extreme severity, long duration, unfamiliar combinations of symptoms, or failure to respond to common treatment.

### ***Illness Etiology and Patterns of Resort***

The perceived cause of illnesses during pregnancy strongly influenced where women sought preventive and curative treatments. Contrary to the assertion that no parallel prenatal care system exists in Manica Province (Laforte 1994), a significant informal sector of popular healing options offering prenatal and other reproductive care exists. Women sought prenatal care from an array of sources outside the biomedical sector. They self-treated with local plants and pharmaceuticals bought in the only private pharmacy and in the open market stalls. They went to churches offering healing through prayer, fasting, laying on of hands; patronized faith healing prophets who cast out demons and used holy water in porridge, teas, baths, enemas, and purgatives; sought *curandeiros*, indigenous healer diviners, who consulted spirits through possession as well as used plant and non-plant preparations. They also visited herbalists using only plant preparations, patronized traveling nurses and mobile drug vendors; and attended a mission-run clinic twenty kilometers away.

Perceptions of the etiology of reproductive threats influenced women’s health seeking during pregnancy in several ways as they moved back and forth between providers and services in this medically plural setting. Three principal characteristics describe broad patterns of health seeking among the case study group: (1) fluid movement between formal and informal health care providers; (2) early prenatal care seeking from alternative sources outside of the maternity prenatal clinic; and (3) increased use of alternative sources of prenatal care as pregnancy continues.

### ***A Case Study of Fluidity of Resort and Layering of Treatment***

The first characteristic—fluid movement between formal and informal health providers—refers to women utilizing formal and informal sector health care options in succession and simultaneously without experiencing any cognitive barriers to this pluralism. The result is a layering of protection and treatment from different sources. This fluidity in reproductive health seeking is illustrated by a case study of Rosinha’s search for a cure for syphilis. At five months gestation Rosinha suffered from intense vaginal itching and pain when she urinated. Following a routine clinic consultation, the nurses at the district maternity clinic sent her for a blood screening to confirm clinical diagnosis of a sexually transmitted infection. She tested positive to syphilis, and was given a prescription for twelve antibiotic tablets that cost twelve contos (±US\$1.20, half a week’s salary at minimum government wages). After paying five contos for an under-the-table payment to get her results at the laboratory, Rosinha had only seven contos left, so she was given half her prescription at the pharmacy. The six white pills did not reduce her pain and itching.

The next month, Rosinha proceeded to a *curandeiro* who gave her an infusion of roots for another five contos. The itching diminished but did not stop completely. She continued taking the infusion for three months, but also bought six injections from a traveling “nurse” who charged 30 contos. This “nurse” administered the injections to Rosinha and her husband once a week over three weeks. The injections seemed to overcome the itching. Still, to make sure it would not return, Rosinha went in her seventh month to a Zion City Church prophet, who gave her a blessing and sacred water in which to drink and bathe. The treatment was free, but Rosinha left the prophet five contos as an “offering” (*chipo* [Shona]). In Rosinha’s own words, the layers of treatments had all played a part in her ultimate cure:

They all treat [sexually transmitted diseases], but it depends on the luck of where you go to be cured. Three treatments are the limit, though— the Father, Son, and the Holy Spirit! The hospital is really better because at the hospital they do analysis. So first, I finished the hospital’s pills. But, everything helped. The *curandeiro* cleaned inside me for the baby not to get infected, but he didn’t cure the illness. It was only diminished. The injections attacked the bridge of the illness (*tsine ye nhenda* [Chitewe]), where the illness is fixed inside you. Like a tree [the illness] already had deep roots. The prophet’s treatment was to cleanse my body and to not have more bad luck (Rosinha, age 27, 8 pregnancies, 3 reproductive losses, 5 living children).

### ***Prenatal Care Health Seeking by Trimester***

A second general characteristic of women’s reproductive health strategies during pregnancy is that many sought prenatal health care early in pregnancy, but not at the maternity clinic. In the first trimester, more women seek prenatal health care from alternative sources than attend the maternity clinic. Twenty-five reported seeking prenatal care in the first trimester from alternative health options while only six went to the maternity clinic.

The third general characteristic observed is an increase in alternative prenatal treatment for personalistic threats to reproduction as pregnancy progresses. Alternative prenatal care use is similar in frequency to clinical prenatal care service use in the second trimester. Alternative care use then overtakes biomedical prenatal care use in the third trimester. This pattern might be accounted for by three factors. First, in the third trimester, many women begin preparing for birth using local plant preparations and other substances both internally and for massage of the birth canal and perineum. A second factor might be that shifts occur over time in the diagnosis of chronic problems during pregnancy from natural to personalistic causes. Lastly, all illnesses late in pregnancy were seen as more serious reproductive threats. The “bigger” the pregnancy, the more vulnerable the mother and unborn child were to harm. By the third trimester nearly the entire sample was seeking alternative prenatal health care.

***Barriers to Biomedical Prenatal Care***

In addition to characteristics of prenatal patterns of resort, three categories of barriers were found to prevent women seeking early prenatal care in the maternity clinic. First, women's domestic and agricultural work burdens were not reduced during pregnancy, and eight women (9.6 percent) reported they did not have time or energy to go to the clinic. Second, rude treatment and being sent away by maternity clinic staff also created a barrier to using the prenatal care services in four cases (5 percent). It was the overwhelming fear, however, of personalistic reproductive threats posed by *fetiço* and *mal espirito* that women reported to be the strongest influence on their prenatal health seeking strategies. A majority of case study women (57 percent) reported utilizing alternative and additional sources of reproductive health care to defend against personalistic reproductive threats.

Fears of witchcraft and bad spirits were so strong that women hid their pregnancies and avoided going to the maternity clinic until they could no longer conceal their physical transformation. Insecurity about whether a pregnancy will “hold” (*kubata* [Shona]) leads a woman to hide her status from all but the most intimately involved, in most cases partner and mother or mother-in-law, and to do as little as possible to give any evidence of her suspected condition. For example, women commonly bind their bodies under traditional cloth wraps in an attempt to diminish the protrusion of their abdomens. Going to the maternity clinic is an open act of confidence akin to bragging that might draw unwanted attention. The first trip to the maternity clinic for prenatal services is also an investment of valuable time in a high-stakes gamble. This lack of public acknowledgment of pregnancy, however, like the waiting period of as much as a year before naming a child, is not a sign of maternal disinterest or detachment, as might be presumed. On the contrary, it is a precautionary measure done in an effort to move the poor odds of maternal and child survival closer to one's favor. The Shona word for a woman whose pregnancy is apparent from the swelling of her body is *chikotsa*, the one who *kotsa*, meaning alternately the one who sees *or* hides in order to conceal, save or keep. For women in Mucessua, prenatal care is a process of layering protection against the various impending reproductive threats they perceive around them. The combined tactics of layering prenatal care from different sources and adhering to a local code of behavior for pregnant women involving secrecy and late disclosure of pregnancy are elements of “safe passage”—a survival strategy from pre-conception through childbirth.

**PERSONALISTIC REPRODUCTIVE THREATS DURING PREGNANCY*****Witchcraft and Reproductive Vulnerability***

Women's articulation of anxiety about reproductive risks, and the way reproductive threats during pregnancy are perceived, categorized, and addressed at the individual and collective levels reveal connections between fear of reproductive loss and broader configurations of social, economic, and political vulnerability. These fears and experiences of personalistic reproductive threats during pregnancy were described in terms of witchcraft, sorcery and bad spirits. Jealousy and envy are most frequently cited as the main reasons for witchcraft and sorcery in the *bairro*. There was general agreement that people are suspicious of and hostile to neighbors and family members who do better materially than others. In the local economy in which goods are available but few can buy them, and the distorted international aid economy in which a few individuals in the community suddenly gain access to jobs that pay salaries disproportionate to government salaries and even pay foreign currency, social inequality is aggravated (Pfeiffer 2001). As pregnancy is itself a sign of good fortune and impending wealth in Mucessua, it has the potential to arouse jealousy and distrust between neighbors and competition between women already sharing the attention and resources of cash earning men under a variety of formal and informal polygamous arrangements.

### ***Ruptures in Kin Relationship***

In Mucessua, it was a widely held belief that witchcraft and sorcery of any sort can cause harm unless the victim is indeed guilty of a crime against the person using witchcraft or unless a family member of the victim is involved. Ancestral spirits called *wadzimu* in Chitewe can operate against members of their own family, for example, the spirit of a parent who was abused or struck by a child who seeks revenge after death. When angered, kin spirits can cause illness and misfortune among their descendants by withdrawing their protective powers. When this occurs, an unprotected person, a person outside of the correct relations with dead and/or living kin, can become the target of all sorts of harm. Threatening the next generation by targeting reproductive health is a good way for angered ancestors to get the attention of living lineage members. By virtue of her vulnerability, a pregnant woman is a prime target for this kind of spirit-induced illness. If a woman arouses the anger of her maternal ancestors, she can expect to be punished through withdrawal of protection of her reproductive capacity (Gelfand 1992, 110-126).

### ***Non-payments of Respect or Paying Disrespect***

Breeches of traditional payments of respect and duty by children to their parents are also believed to pose a threat to reproduction. For example, in cases of a child's unsanctioned union or unsanctioned pregnancy, parents may threaten to withdraw material and spiritual protection, an act that symbolizes the strain created by interruptions of intergenerational cycles of social and economic indebtedness. Tension over unpaid, insufficient or improper appropriation of *lobolo* (brideprice) or *massungiro* (seduction fee) payments that ensure the distribution of social and material wealth between generations of lineage and marriage-related kin frequently leads to family disharmony.<sup>5</sup> This imbalance in social wellbeing is communicated between generations by ruptures in good health, especially the reproductive health of living female kin.

In one case study, nineteen-year-old Sandra privately accused a spiteful aunt of using witchcraft to cause problems in her second pregnancy. In her eighth month, Sandra began to have severe pains in the bottom of her abdomen. She went to the maternity clinic, but was not offered any treatment, only told to come back the next month to give birth. Her husband took her to a prophet. The prophet brought forth a spirit from Sandra's body and speaking through Sandra's mother, pointed out tensions between family members gathered for the ceremony. One aunt in particular became especially agitated and expressed a wish to die. Sandra believed that same aunt had sent a spirit to harm her:

My mother's sister sent this spirit. She has a crazy daughter and a crazy son. She has hate. The spirit told me that it does not want me to give birth. This aunt is bad. She is also a *curandeira*. This sister of my mother had an eldest daughter. Her mother sent a spirit to make her go crazy (*kupenga*, [Shona]). She stayed crazy. Up to today she is still in her mother's house. (I asked for more explanation here).

[The daughter] had married a soldier and moved into his house. But when [my aunt] drank she arrived at the house and insulted her daughter and son-in-law. She said, "You are showing off. You did not pay me my *lobolo* money. You already have a husband, but you do not want to see me, do not want to give me any money to buy *capulana* (traditional cloth), stew. As it is with my mother and father, I also want [*lobolo*]." (As a result of her mother's insults and curses, the daughter became crazy forever). After this, the husband said that, "Now that you made your daughter go crazy, I no longer need her," and sent the girl home without *lobolo*.

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<sup>5</sup> Bride price (*lobolo*) is a transfer of goods and or cash from a man's lineage to the lineage of his wife in payment rights to her sexual and domestic labor and rights to children. A seduction fee (*massungiro*) is the payment made to the parents of a woman by her first sexual partner as a token of intention to pay the rest of *lobolo* for marriage or payment for "damages" acknowledging a lowering in the brideprice to be drawn for a woman who is no longer a virgin (Steward, et al. 1990: 194).

Sandra believed that out of bitterness of having been cheated out of her own daughter's *lobolo*, her aunt was trying to ruin her (Sandra's) reproductive health. Sandra's father-in-law has paid a seduction fee to Sandra's parents, but her young husband has not yet earned enough to pay bridewealth. Because of this unpaid sum, Sandra worried about her ability to protect her three-year-old first son's health from witchcraft attack:

My husband is trying to arrange *lobolo*. But, at times [my son] Jaimecito is not well at night. At night his body heats, and he cries. As soon as morning arrives, it stops. *Curandeiros* are accustomed to keeping the lights burning until morning. I don't know if it will come again at night. I'm usually afraid.

The pregnancy beliefs and practices of women in Mucessua reflect their own and others' attempts to assert control over the experience and outcome of procreation under conditions of uncertainty and vulnerability at multiple levels, as well as the high level of reproductive risk and loss they experience. This vulnerability is related to poverty and the intense burden, placed especially on peri-urban women, for family subsistence and high fertility in a period of economic austerity and social conflict. Folk epidemiologies trace the distribution of reproductive crises not in terms of medical risk categories, but in terms of embodied dangerous social encounters.

## DISCUSSION

### *Reproductive Threats as Social Conflicts and Economic Tensions*

The explanatory models and practices described above must be viewed within a broader social, political, and economic context. Women's perceptions that personalistic reproductive threats derive primarily from the transformation of social networks and kin relationships are reinforced by local social and economic dynamics. Drawing from Shona ethnography, local oral history, and women's life histories in which they compared their current household and compound composition, work responsibilities, and social support networks to that of their childhood and their mothers', it is proposed that the following changes in social organization, relations of social reproduction, and economic basis of subsistence over the past ten to twenty years impact Mucessuan women's reproductive choices.

### *Changing Social Organization*

Comparisons of women's current living situation with that of their mothers suggest that the size of households and nature of domestic organization has shifted significantly over the past fifteen years. Due to colonial policies and then the war's dislocation of populations and forcing rural villagers to crowd into peri-urban squatter conditions, women have gone from living in large, extended, multi-generation, patrilocal, patrilineal households, and compounds of fathers, uncles, brothers, and husbands, to living in small, nuclear, single or two generation households. Thus they have established new patterns of neolocal residence. In this new setting women are experiencing great social vulnerability. They bemoan not having the agricultural and domestic help that their mothers had from sisters-in-law, aunts, and even co-wives, especially during pregnancy.

A further shift in domestic social organization is the decreasing number of formal polygynous marriages and compounds, while many men establish several, but geographically separate, nuclear households with *mulheres d'esquina* (around the corner women, the "other woman"). Shrinking household size and the increasingly informal nature of polygamy in which men's multiple female partners are not guaranteed sufficient land to support themselves and their children through patrilineal land allocation, have reduced important sources of women's social support and material subsistence.

### ***Changing Relations of Social Reproduction***

Women in the case study group reported that, in general, there were increasingly fewer traditionally sanctioned marriage unions bringing two lineages in formal contract with each other through payment of *lobolo*. At the same time, *lobolo* payments have inflated in the current austerity program economy and, when paid, are paid in large sums of cash quickly spent or *comedo* (eaten) by in-laws. Under this arrangement women feel they are under more pressure to give birth to as many children as possible to pay off this cash debt that cannot usually be returned by their parents who have often “consumed” it immediately, in the case that the marriage proves unsatisfactory. Every woman in the sample argued that although they felt personally burdened by *lobolo*, they would insist on *lobolo* being paid for their daughters. *Lobolo* was one of the few socially sanctioned ways women envisioned themselves getting cash they would control. As one woman mused, “We pray for one boy to take the father’s name, and then a whole train of girls following behind for *lobolo*.”

The social institutions of seduction fees (*massungiro*) and bride price (*lobolo*), which have been long-standing means of controlling men’s and women’s sexuality and female reproductive labor are both distorted and reinforced in the current commoditized social economy. This has increased reproductive pressures on women while overall economic security has declined. The health consequences of this pattern is that a cycle of maternal depletion is set in motion in which women experience frequent pregnancy and obstetric complications and reproductive loss and increasing pressure to bear more and more children who survive.

### ***Changing Economic Basis of Subsistence***

In addition to increased social and reproductive vulnerability, women are also extremely economically vulnerable. They need cash to survive, and yet have few means of generating cash that they control. In the current cash economy, even land that was traditionally distributed through lineage males to wives and daughters on a need basis is now increasingly bought and sold in formal and informal land markets. While land shortages for the fast growing peri-urban populations like Mucessua are increasing, women, without cash capital, cannot compete. Further, former traditions of cooperative, community-based labor exchanges, and labor rotation schemes, utilized especially by women to expand or intensify crop production, have become extinct as individuals will only sell their labor for cash. No women in the study reported helping another woman in her fields and no women received agricultural labor assistance from anyone outside of her husband and children during pregnancy. Yet only eight of eighty-three families (9.6 percent) had harvested sufficient staple grains to last through to the next harvest without purchasing grain.

In this environment of economic insecurity, exacerbated by congested living conditions, people feel they are competing for scarce resources with strangers who might patronize or themselves be witches or sorcerers. In the tight quarters of the *bairro*, arguments, fights, and conflicts—for example over theft, adultery, or land appropriation—can escalate to the point at which one party will insult or accuse the other, and a kind of curse will be made. Revenge often takes the form of a verbal oath by the offended party that something will go wrong, that someone will suffer or die. As the most vulnerable member of the family, the pregnant wife and her future child are immediately feared to be the target. Anxiety about these personalistic reproductive threats steers women toward costly preventative and curative folk treatments in the informal health sector.

In contrast to the multiple layers of social meaning expressed in women’s responses to reproductive risks, formal biomedical services reflect a narrow concern with the control of women’s fertility and a medical definition of pregnancy and obstetric risk factors. Women in Mucessua view these services as inadequate to respond to threats on their reproductive and pregnancy health needs. Under these circumstances, delaying initiation of consultations in

the maternity clinic until late in pregnancy is frequently a conscious and conscientious tactic in prenatal health care strategies. Ironically, avoiding the prenatal clinic early in pregnancy can be interpreted as a preventive and protective health activity within the context of women's conceptions of their own reproductive vulnerability. They purposefully delay entering the biomedical system in an attempt to reduce reproductive vulnerability that they perceive stems from public knowledge of their pregnant condition. By initiating clinic-based prenatal consultations late in their pregnancies, women circumvent national norms and relegate formal biomedical services to a marginal role in safeguarding or guaranteeing community continuity through children. Popular providers of reproductive health care are privileged as sources of authoritative reproductive knowledge and therapeutic processes that address meaningful aspects of women's experiences, in this case, reproductive vulnerability.

## **CONCLUSION**

Three concluding points can be drawn from this study. First, the Gondola data challenge the characterization of high-risk women in developing countries as unmotivated and/or non-compliant victims. On the contrary, under conditions of extreme reproductive vulnerability, little access to cash, immense domestic and agricultural work burdens, and limited routes to female social and economic self-determination, women demonstrate significant initiative in mobilizing the resources necessary to wrest control of their own reproductive labor and outcomes. It is not argued here that women's options for prenatal health care outside of the biomedical sector are necessarily beneficial or more capable of treating pregnancy and obstetric complications. Further research is needed to evaluate the reproductive health impact of the alternative therapeutic procedures identified by women in the study.

The biomedical system could more effectively promote prenatal service use by integrating local idioms of protection into health messages. Activities of the prenatal care health clinic such as anti-tetanus vaccinations, vitamin supplementation, blood screening, and treatment for sexually transmitted infections are all compatible with women's desire to protect their unborn child from harm and need to be advertised as such. More importantly, however, health care givers in the formal sector must recognize the sensitive nature of pregnancy and reorganize the delivery of services to provide confidential prenatal care.

Second, explanatory models were found to be significant influences on women's perceptions of reproductive health risks. Ethnomedical beliefs, however, alone are not sufficient to explain the patterns of women's prenatal health-seeking behavior. Analysis should not stop at the level of explanatory models without attempting to link culturally shared beliefs to the political economic context of the social actors. This would leave out crucial aspects of social relations of production and reproduction in the region that inform women's health behavior. A political economic analytical model that takes into account individual experiences, socio-economic conditions and the structure and practices of the health system not only allows for greater insight into the formation of explanatory models and their influence on health strategies but begins to reveal the mechanisms by which both risk perceptions and health strategies might change over time (Atkinson and Farias 1994).

Finally, prenatal services based on assumptions that the greatest threats to reproduction are physiological processes, and not social and economic relationships, are inadequate to address women's needs for social safety in an environment of rapidly intensifying social inequality and increasing pressure to bear children. These data suggest that the mere provision of prenatal care services may be insufficient to reduce reproductive risks for the most socially and economically marginalized since this vulnerability prevents women using available services. While key modifications in maternal health care programs are essential to improving Safe Motherhood in Mozambique, women's reproductive vulnerability ultimately lies beyond the scope of medical or even public health solutions alone (Turshen 1991). The project of ensuring Safe Motherhood to women in Mozambique



cannot be undertaken without providing women with greater economic security, education and access to services that reduce their social and economic marginality. The current trend toward privatization and removal of safety nets endangers Safe Motherhood in Mozambique.

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## **NORMALITY AND A “DISEASE OF CIVILIZATION:” ECLAMPSIA AND RACE IN THE CONGO AND THE SOUTHERN UNITED STATES**

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The denial of an ontological conception of disease, a negative corollary of the assertion of a quantitative identity between the normal and the pathological, is first, perhaps, the deeper refusal to confirm evil (Canguilhem 1991, 104).

I first began research on the United States South as an “eclampsia” belt because a Belgian colonial obstetrician (and eclampsia expert) anticipated and then witnessed a rise in eclampsia rates in Leopoldville in the 1950s and took a study tour to the U.S. South to try to better understand what he was witnessing. “A disease of civilization” was the reigning academic theory about eclampsia in the 1940s; it tended not to be found among “untouched natives” in various parts of the world, though inadequate prenatal care, poverty, and nutrition were common explanations for the high rates among blacks by southern obstetricians at the time. By 1957, the Leopoldville-based obstetrician was witnessing calamitous eclampsia rates in this burgeoning African city. Could this have been an artifact of soaring hospital attendance and the associated technologies of statistic keeping alone? Or, could the numbers have been an artifact of the doctor’s own interest in eclamptic patients? Or, might there be something worth reconsidering in the notion that eclampsia was a disease of maladaptation to the conditions of modernity?

Perhaps Georges Canguilhem’s work on the normal and the pathological might help us in sorting out this enigma. Caroline Bledsoe and her colleagues have suggested two definitions of the abnormal for our consideration: “One view sees any notable deviation from the mean as being abnormal. Another sees abnormal as being only those conditions that contribute to decline or pathology” (Bledsoe 2001, introduction). Canguilhem distinguishes these two meanings of normal as quantitative and qualitative, that is, normal as a measured average and normal as what is good, right, just, or invested with value. One is the descriptive sense: the average. It is a concept of statistical reality. The other is the therapeutic, normative sense: that which has value attached to it, that which should be. It is a concept of value, and Canguilhem insists that this concept comes from life itself, not from the situation of therapeutic expertise: “It is life itself, through its differentiation between its propulsive and repulsive behavior, which introduces the categories of health and disease into human consciousness. These categories are biologically technical and subjective, not biologically scientific and objective. Living beings prefer health to disease” (Canguilhem 1991: 222).

Reports that the incidence of convulsive eclampsia was greater among the “Negro woman” than the “white” one were common in the pages of the *Southern Medical Journal* (Torpin 1940). In 1937 Drs. Ware and Noblin of the Medical College of Virginia were aware that the high incidence of convulsive eclampsia was due to the fact that the hospitals involved “serve a wide surrounding territory and admit a very high percentage of emergency cases.” They noted that prognosis was better in younger women, but still worse among black women. These American southern doctors did not sound unlike colonial doctors in Africa when they suggested that the “difference in both the incidence of the disease and the mortality rate for the two races” was “due to the indifference of the Negroes to prenatal care” (Ware 1937, 154).

Race and eclampsia were long linked in the minds and practices of southern physicians, and not without reason. The single most common cause of death in 1932 in the southern United States was not puerperal sepsis, as it was most everywhere else in the world at the time, but “toxemia” or eclampsia and other hypertensive disorders of pregnancy. In Virginia, toxemia accounted for 38 percent of puerperal deaths in black women, and the mortality rate was three times as high as it was for white mothers (Loudon 1992).

Increasingly, most southern physicians argued that what was at issue in terms of racial variations in the incidence of convulsive eclampsia had less to do with biology or genetics than with race as an aspect of social environment, that is, with poverty, diet, and lack of access to prenatal care. Thus, Dr. William M. Howdon of Miami argued: “In our studies, we feel that the major cause of “true eclampsia” is nutritional. When one studies [it] closely, all patients with eclampsia show signs of nutritional deficiency” (Howdon quoted in Whitacre 1951, 643). A major proponent of nutritional explanations was Robert A. Ross, of Duke University, who noted the coincidence of pellagra and eclampsia in the region (Ross 1935; Ross et al. 1938), and by 1947, had declared eclampsia “the number one obstetrical problem in the South” (Ross 1957, 723-30).

References to the practice of Dr. Joseph Lambillon, a Belgian obstetrician and gynecologist, who wrote a prize-winning thesis on eclampsia etiology at the University of Louvain in 1935 before going to work in a rural medical hospital in the Belgian Congo three years later, raised my interest in the incidence of eclampsia in central Africa. When Lambillon arrived in the Congo, he observed that eclampsia and preeclampsia rates were higher among Belgian women settled there than among those at home. Yet eclampsia seemed to be rare among Congolese women. By 1946, Lambillon was working in the rapidly growing city of Leopoldville (today's Kinshasa), directing obstetric and gynecological health care services in the colonial state's white and black hospitals. Eclampsia rates among African women were on the rise in this clamorous metropolis, as Lambillon noted in 1948 with great interest but little surprise (Lambillon 1948). By 1957, an epidemic of convulsive eclampsia was unfolding in Leopoldville's maternity hospital for African women, a colonial—we might say “charity”—hospital that witnessed some 10-12,000 deliveries a year (Lambillon 1957).

Lambillon's citations reveal that he was reading the literature on eclampsia and race published by U.S. experts, notably the classic text on toxemias of pregnancy by Dr. William Joseph Dieckmann of the University of Chicago (Dieckmann 1941; 1952). Dieckmann's 1941 textbook mapped the U.S. South as an eclampsia belt; his second edition in 1952 blackened in this region in a bold series of maps about the correlation between black women and eclampsia.

In 1954 Lambillon traveled to the American South on a colonial-sponsored study tour, meeting with eclampsia specialists in two of the most important hospitals featured in this literature, Charity Hospital in New Orleans and Grady Hospital in Atlanta. Lambillon seems to have been much less swayed by the emerging consensus among Southern U.S. physicians that eclampsia resulted from poor nutrition, poverty, and inadequate prenatal care, than he

was by Dieckmann's theory about eclampsia as a disease of "culture and civilization." Indeed the value of beginning a study of the history of eclampsia in the U.S. South from a distant central African city like Leopoldville is that it was precisely these kinds of locations in tropical colonies where American and European missionary and company doctors worked, from which Dieckmann collected the evidence he used to substantiate his theory about eclampsia as a "disease of civilization." Dieckmann argued that eclampsia was rarely found among "primitive" peoples living in tropical settings until the effects of "modernization" set in. These effects included the new diets and new stresses of urbanization, industrialization, and wage labor (Davies 1971).

Only in the early nineteenth century did statistics relative to eclampsia incidence begin to be collected; edema and albuminuria were identified as characteristics about the same time, although only florid cases of eclampsia were recognized. Routine antenatal care did not begin until the second decade of the twentieth century, when it was understood that the presence of edema, weight increase, elevated blood pressure, and albuminuria were forewarnings of "an eclamptic attack" (Dieckmann 1941, 7). Antenatal care became essential for the control of preeclampsia. Obstetricians were no longer concerned primarily with the one month puerperal period, but much more so with the entire nine months of pregnancy. When Dieckmann condensed and discussed the many eclampsia reports of the previous twelve years in 1941, he noted that "the physiology of pregnancy is almost a virgin field" (Dieckmann 1941, 9).

Dieckmann concluded: "Our data seem to indicate that toxemias of pregnancy, especially eclampsia, are diseases of culture and civilization, probably because of the mental strain and stress, and changes in diet and habit" (Dieckmann 1941, 43). He first made an argument about the geographic distribution of toxemias in 1938. Heretofore, textbook authors had argued that eclampsia was related to sudden alterations in temperature and humidity, though uncommon or rare in the tropics, which they, in turn, attributed to carbohydrate-based diets. He studied foreign journals over a five year period; collected hospital reports; and sent out 200 questionnaires — 120 to foreign hospitals and mission doctors and 80 to U.S. hospitals — asking for a five-years worth of data on toxemias. In Europe, the incidence of eclampsia ranged from 0.38 percent in Sweden to 1.63 percent in Scotland. Among "the natives of various countries," the occurrence of eclampsia ranged from zero percent, in Congo and Ethiopia, to 2.85 percent in Algiers. In U.S. cities, the incidence ranged from 0.06 percent in Lincoln, Nebraska to 7.2 percent in Charlotte, N.C., with southern cities generally having higher rates than northern ones. Dieckmann left the riddle as a question: "Are these diseases more severe in the South than the North? Do the patients have less resistance? Is prenatal care more intelligently administered? Or is the method of treatment better in some cities?" (Dieckmann 1938, 626).

He understood that his figures for hospitals in places like Africa were not comparable to hospital figures for the United States: "There is no prenatal care, and hospital beds are few in number." Thus, it was not surprising that his data suggested that nonconvulsive forms of toxemia were more rare than eclampsia itself; the latter was all anyone diagnosed, and "convulsions, pregnancy, and death are a triad which should be easily recognizable" (Dieckmann 1938, 630). He found that eclampsia was either unknown or rare among native women "whose habits and diet have not been changed by the white race" (Dieckmann 1938, 628); for Africa, this was the case for the Belgian Congo, Ethiopia, Kenya, Tanganyika, South Africa among Zulu women, and among women living in North Africa's date oases. By contrast, he found that eclampsia was common in sites like Algiers, Cape Town, Colombo, and Puerto Rico, "where the natives have adopted many, if not all, of the diet and other habits of the white." Moreover, he noted: "Eclampsia is very rare among the negroes in Africa, but has an incidence among the negroes of 0.71 percent in New Orleans and 0.92 in Atlanta. Of

course, the negro in this country is not of pure strain, but these figures do show the effect of a different diet, habits, climate, etc. Hypertension is also rare in the African negro male and female in contrast to its high frequency in the colored race in this country” (Dieckmann 1938, 628).

Dieckmann concluded that although eclampsia may occur among those with “little or no contact with modern civilization,” it was this variable itself, “modern civilization ... with its mental strain and stress, change in diets and habits,” that seemed to increase the incidence of eclampsia (Dieckmann 1938, 631). What were the implications of calling eclampsia “a disease of culture and civilization”? Before World War I, eclampsia had often been thought of as a disease of the rich, provoked by their extravagant diets. By 1938, Dieckmann believed that he had compelling evidence on its absence among “untouched natives.” Clearly he was trying to reconcile this with data that suggested eclampsia and preeclampsia were higher among Africans living in African cities, Panama, and the U.S. South. He held on to climate as an explanation, and he added ignorance, poor nutrition, and lack of expert medical care.

The concept of “diseases of civilization,” as Roy Porter (1993) explains, was first used by Enlightenment physicians in the eighteenth century “as a secularized revamping of the Christian legend of the Fall,” and was notable for “superimposing the medical and the moral” (p.589). The bad habits that accompanied the development of urban life, commerce, fashion, and luxurious lifestyles — over-eating, over-drinking, lack of exercise, and the like — had resulted in “nervousness.” This new set of disorders of the nervous system seemed to be unknown among hard-working, sturdy “noble savages” or peasants who worked hard in the open air and lived on simple diets of grains and vegetables. This psychosomatic paradigm could easily turn into a sociopathological account of the effects of “progress” and modernity. Indeed, the vision of “diseases of civilization” darkened in the nineteenth century as social Darwinist and degenerationist discourses took hold of social imaginations. What Porter calls the “eugenic sting in the tail of ‘diseases of civilization’” began with anxieties about dysgenic social effects and psychophysiological decay (p.595). If Nazi policies for perfecting a master race were one outcome of such medico-scientific thinking that linked disease and civilization, another was Freud’s work on the psychopathology of everyday life and institutionalized aggression as the costs of a modern, affluent, urban society capable of total war. Meanwhile, with the rise of “social medicine” in the 1930s and 1940s, the epidemiological study of relationships between social variables and disease trends became commonplace. Today, although it is rare to speak of “diseases of civilization,” we still assume that certain disorders are due to lifestyles or environmental and social conditions (Porter 1993, 589, 595).

Eclampsia was one of many disorders that became “attributable to pathogenic elements in modern civilization” during the interwar period (Porter 1993, 597). We must remember that this concept of “diseases of civilization,” whether applied to neurasthenia, hysteria, or eclampsia, “has proved a powerful ideological construct in shaping normative relations between nations and classes; between past, present, and future; and between peoples, the medical profession, and governments” (Porter 1993, 597, 598).

No one in the Belgian Congo was as interested in obstetrics and gynecology as Dr. Joseph Lambillon. A few other colonial doctors wrote an occasional piece on the subject, but only Lambillon claimed to make a systematic study and traveled to meetings with French-speaking tropical specialists to report on Congolese conditions. He took on a range of issues in his 35 publications, published between 1939 and 1964, but a recurring theme was the subject of his prize-winning medical thesis at Louvain, eclamptic gestosis, or eclampsia and hypertensive disorders of pregnancy.

Lambillon had been trained in the early 1930s in Belgium at a time (1930-1935) when, in his words, “eclampsia and its complications constituted the nightmare of the obstetrician in Belgium” (Lambillon 1964, 490). He arrived in the Congo in 1938, and until



the war affected drug supplies, was able to easily continue his Tonefine-related eclampsia research at the Fomulac center of Katana in the Costersmanville region of Kivu: "the native loving by principle intravenous injections, we could therefore eliminate the psychic factor of emotion or fear". He never saw a Congolese case of preeclampsia or eclampsia while in this rural and mountainous region of the Congo (1948, 2562).

It was not until 1947, when he was put in charge of Leopoldville's surgery and obstetrics and gynecology services, that he saw his first cases of eclampsia among Congolese women. In 1948 he stated: "We can say first of all that eclampsia is up to now a very rare complication of pregnancy in the native. If we refer to the information we can gather, it seems to be a very recent apparition" (Lambillon 1948, 2563). Due to lack of time and lack of personnel, it was rare to diagnose preeclampsia. Rather, he observed typical cases of eclampsia during the last period of pregnancy, during labor, after delivery or in the post-puerperal period. The number of crises varied and usually a coma state existed between seizures. Lambillon tracked the seasonal incidence of eclampsia; most cases occurred in the months August through November during the humid, rainy season.

Lambillon's racial and evolutionary logic was most salient and it went like this. Natives in their customary milieus were usually undernourished, and therefore women lacked much flesh, fetuses did not grow large, and cases of disproportion were not high *en brousse*. Women who were admitted to maternity wards to await birth often gained weight quickly, and were more likely to become an abnormal case than those who arrived directly from their villages to give birth. He was struck by the contrast of the European pregnant women who ate a rich diet and drank many fluids: "the tropical climate incites her to overuse spices, especially salt." His logic about eclampsia was partially dietary and climactic: "It's here, more than in Belgium, that we can affirm that salt and warmth are the big enemies of the pregnant woman." Preeclampsia was common among white women in the Congo; he had seen one case of death from eclampsia in Katana and several cases of serious preeclampsia (1948, 2565).

Impressed by the colony as a special form of laboratory for observing the relationships among environment, race, and normality, Lambillon observed that:

. . . we find ourselves in the Belgian Congo in the presence of representatives of two races, white and black, living in identical climactic conditions. If they behave very differently in terms of the same eclamptic syndrome, they are also distinguished by their degrees of civilization and evolution, their ways of life, and their diets. There is material here for serious investigations, especially if one keeps in mind that the endocrine system of the European woman in the Belgian Congo presents many dysfunctions. (Lambillon 1948, 2567)

Among native women, eclampsia was still in "a stage of installation." It was absent "in the bush and backward regions," just as nausea, vomiting, and painful ligament spasms were. Whereas all of these ailments were found with increasing frequency in "an evolving center like Léopoldville" (Lambillon 1948, 2568).

Lambillon imagined himself being able to undertake a vast study with attention to renal, liver, endocrine functions in this "almost virgin territory" of eclampsia, a set of disorders that "progress seemed to bring about." The researcher must have much time and patience, and even though natives "manifest a capriciousness that makes such a detailed study difficult, she compensates for this by a great docility" (Lambillon 1948, 2568).

This physician researcher seems to have thought that he was in prime terrain to study the causes of eclampsia in an "evolving" situation. Eclampsia rates rose from 1949 in Leopoldville's main native maternity hospital: from 2.5 per 1000 deliveries in 1949 to 4.3 per 1000 in 1954, to 13.6 per 1000 in 1956. In the first four months of 1957, the rate shot up to the alarming number of 67 cases per 1000 deliveries, at a time when in the convulsive

condition was a rarity Western Europe and North America. So extreme did this Leopoldville epidemic seem that it was not difficult to see at any given time in the maternity ward “one or several future mothers in an eclamptic coma or in a convulsive state” (Lambillon 1957, 1398).

Did eclampsia actually go from a virtually non-existent condition among Congolese women to a slowly increasing urban condition that suddenly exploded into epidemic proportions in 1957 in this bursting city? There are difficulties with Lambillon’s data; the 1957 figure perhaps combines eclampsia and preeclampsia cases for the first time. It seems unlikely that Lambillon’s statistics were no more than an artifact of hospital conditions; as Dieckmann pointed out: “Vital statistics are notoriously open to error, but convulsions, pregnancy, and death are a triad which should be easily recognizable” (Dieckmann 1941, 53). Yet we know far too little about the meanings of the mysterious and frightening condition of eclamptic convulsions within African societies; and the fact that an eclampsia specialist keen to witness eclampsia cases managed to have a high case load of eclamptic patients, in a context where this disease would have been especially fearsome, is suspect.

Another peculiarity of these so-called “facts” is that Lambillon predicted them. Yet another is that he used a particularly pointed colonial vocabulary to characterize them, a language centered in ideas about half-baked, half-arrived evolution in an “evolving” city. Lambillon was fond of the word *évoluant* — a developing or “evolving person,” less than an arrived *évolué*. This word insists on the liminal temporality of the so-called “civilizing processes” of colonialism. Lambillon called Leopoldville an *évoluant* city, not unlike we say developing country today. Eclamptic convulsions were a byproduct of evolution and faulty adaptation in Lambillon’s terms. He spoke of diet; he assumed its incidence was related to the modernizing diets of Congolese city women. And he directly attributed one rise in eclampsia rates to a new surge of residents and consequent problems in “feeding the city.” Yet he did not follow the logic of the social epidemiologists of his day who associated eclampsia with race as a socioeconomic rather than as a cultural category. Lambillon did not see poverty or malnutrition as causes. He never mentioned the coincidence of kwashiorkor in the region; quite unlike in the way that U.S. Southern physicians drew attention to the coincidence of eclampsia and pellagra. Rather, Lambillon’s thinking was in line with the major American textbook writer of his time, Dieckmann, who had crafted his argument about eclampsia as a “disease of cultur[e] and civilization” from dubious hospital reports and letters provided by mission doctors working throughout the world. Lambillon seems almost to have waited for his eclampsia epidemic and then read it as “normal” — that is, as expected for this transitional society.

Did Lambillon believe eclampsia was preventable? Not enough so, it appears, to become a proponent of the technologies of prenatal care. Instead, he seems to have seen eclampsia as an expected, “normal” stage of development — of psychosomatic disturbance — in the “evolution” (and modernization) of a group of “natives.” As a result, he was unable to see eclampsia as a consequence of inadequate normalization, of faulty colonial hygiene. In 1948, he stated: “It is rare that one can demonstrate preeclampsia. This stage exists no doubt; we have observed here and there a case in Leo’s Maternity, but we do not have time or personnel required for such a diagnostic check. Crises are typical, and a variation of the Stroganoff method gives good results.” In 1957, he suggested that there was a “need to start some true prenatal consultations.” Yet he seems to have been more worried about the danger of home births: “An intensive propaganda must be undertaken against attempting childbirth at home . . . each commune, at least in the cities, should be provided with ambulances or other means of transport.”

Only from Lambillon do we have evidence of the arresting image of a woman a day convulsing with eclampsia in Leopoldville’s bursting, native maternity ward. Why was this

happening? Perhaps malnutrition and/or high salt, "modernizing" diets were partly responsible. Perhaps the pace and stress of the city might be blamed or the very conditions of medicalized childbearing. Perhaps Lambillon's fascination itself operated as a draw. But, regardless, a major source of this social problem lay in the fact that most women — 10 to 12 thousand women a year — received no systematic prenatal care. Preeclampsia was going almost entirely undiagnosed. That was the stark reality of this maternity hospital, which was handling as many deliveries a year as in any hospital in the United States at the time. Leopoldville had one of the highest standards of living in sub-Saharan Africa at the time, and the colony had one of the best, most comprehensive maternity and infant care programs on the continent (Hunt 1999). Yet at least until 1957, there was little or no system of triage for preeclampsia in Leopoldville.

This history, therefore, opens up a key failure of maternal and child health in the Belgian Congo, while pointing to the problematic situation of big city hospitals and the struggles between professional obstetricians and primary health care advocates. Still, what impresses me most is how tracing Lambillon and his thinking about eclampsia has taken me from central Africa's low fertility and kwashiorkor belts to the U.S. South. Lambillon saw a parallel for Leopoldville in New Orleans, and more generally of urban Congo with the American South. The parallel remains a compelling one. Meanwhile, the logic and research of Lambillon and Dieckmann combined tell about how obstetric pathophysiology developed in an era of empire, when doctors used social evolutionary language, thought of civilizing processes as pathogenic, and compared anomalies from various geographic fields.

When we turn to a disease entity like eclampsia, we are dealing neither with the "normal" or the "commonsensical." Has convulsive eclampsia not been an ominous — whether monstrous or pathological — condition "in all times, places, and social arenas?" Yet in 1957 Leopoldville, within the native maternity ward administered by Lambillon, it was "typical" to find a woman a day suffering from eclamptic convulsions. And in the U.S. South, from the 1930s through the 1940s, a patient with convulsive eclampsia tended to be a young black woman who had had no or inadequate prenatal care.

If we follow the logic of Canguilhem, there is no normal without the pathological, and the pathological has increasingly defined the normal since the quantification of "normality" became a norm. This has been particularly true for eclampsia. The pathophysiology of eclampsia aided in defining the pathophysiology of its precursor, a syndrome named preeclampsia. Each has worked to define a baseline, "normal," pregnant body. The normal was defined in relation to the dangerous; and this process was massively accelerated once prenatal care became medicalized and routine, so successfully that in many parts of the world eclampsia itself has become a rarity. Indeed, it might be fair to state that the development of the major diagnostic technologies of pathology in pregnancy were focused on preventing this most frightening of conditions: a pregnant woman in a life-threatening condition of convulsions and/or coma, with only one way to cure her, deliver the placenta. These technologies include testing for high blood pressure, testing for protein in the urine, and assessing edema. Each of these three now has measures for "health," ranges of what is normal and abnormal.

The history that I have shared here takes us back to a time when clinicians and physiologists were not so quick to ascribe a genetic basis to human variation in convulsive eclampsia. All kinds of environmental theories were at play: climate, nutrition, "modernization," and the absence or presence of a laboratory-like environment for medical surveillance and care. Whether variation was genetic or environmental did matter, especially since the medical "fixes" were not yet clear; and even those technologies once developed were more diagnostic than preventive in nature. A key impetus behind prenatal care was to create a newly medicalized environment for pregnancy such that the condition of preeclampsia could

be diagnosed and forestalled from developing into eclampsia. The debates over what kind of “support for the body” (Bledsoe et al. 2001) should be produced were fierce; and some argued that the production of prenatal charts and modified Stroganoff methods in a pinch were not enough. Vitamins, magnesium sulfate, aspirin, and wholesome, low fat meals all had their advocates.

As much as the diagnostic technologies of prenatal care have “become sedimented into our common sense,” preeclampsia perhaps keeps “the childbearing body” from being imagined “as a constant, regardless of parity, injury, or disease.” If there are “cultural generalizations about a human physical baseline” in relation to preeclampsia, it is that the pregnant body will be measured in these ways, that the necessary triage will take place. Thus, “the factors that weigh so heavily in other . . . places” — the high incidence of convulsive eclampsia among young (poor, stressed, and malnourished?) primiparas in Africa without easy access to prenatal care — may be too easily reduced by us to the latter issue alone: participation in prenatal care. Nutritional research has gone out of style in eclampsia research, as has tracing the effects of the trauma of war and civil strife. So, too, has the notion that eclampsia is a “disease of culture and civilization” (Program of African Studies, Northwestern University 2001).

How has the virtual elimination of eclampsia in the West altered our ideas about the normal pregnant and childbearing body? Prenatal care is a classic case of a systematic form of triage that does “route people and their projected ailments into different pathways of risk” (Bledsoe et al. 2001), while assuming a baseline body. As far as I know, what has been defined as biologically normal in eclampsia has been defined in the West, though differently so in Britain, the United States, and the Netherlands, but not modified much for a place like South Africa. What is different in Africa today, as it was in the U.S. South in the 1930s and 1940s, is the clinical expectation that many women will enter prenatal care late or not at all. Florid eclampsia can be seen, and medical staff must know how to contain it as quickly as possible.

Eclampsia studies do not tend to report racial differences, as they did in the United States in the 1930s and 1940s. And though there may be arguments for a genetic basis to higher hypertension rates among blacks than whites, socioeconomic status is glossed by a West-vs.-the-Rest contrast and too easily conflated with access to, and eagerness to participate in, what has become a Western cultural ideal, prenatal care. Dieckmann’s book makes clear that the course of normal reproduction became associated with constant measurement; his patients were even given scales with which to weigh their daily food.

Birth in the clinic coincided, in a sense, with the quasi-experimental, diagnostic case method first offered up by the birth of the clinic or modern hospital as a counterpart to the scientific laboratory. The birth of the technologies of prenatal care as a linked set of technologies of triage were a much later invention; it coincided with the generalized fondness for positive eugenics: health promotion. I have not been able to fully “peel the onion” of medical normality “backwards” in this working paper, though I have taken us back in time to two contexts, in roughly the same period, where clinical “beliefs about medical normality” assumed that what was average for white women was not the same as average for black women, and that some pregnant women, especially black women, would not present for medical care unless in an urgent situation. They also constituted two contexts where the normalization of health promotion was extended unequally to white and black women.

As important as it is to distinguish between the average and the normative senses of normal, Canguilhem insists that we must disentangle the meanings of anomaly and the abnormal. Like the average anomaly “points to a fact, and is a descriptive term, while ‘abnormal’ implies reference to a value and is an evaluative, normative term” (Canguilhem

1991, 132). Likewise, he notes that the former is a geographic, demographic category, while the latter is applicable at the level of an individual: "An anomaly manifests itself in spatial multiplicity, disease, in chronological succession" (138).

Canguilhem insists: "the concepts of norm and average must be considered as two different concepts" (1991, 177). His 1943 essay compares "the ontological conception of disease, in which disease is portrayed as the qualitative opposite of health, with the positivist conception, which derives it quantitatively from the normal state" (p. 275). The former is ancient; the latter emerged with "the scientific study of pathological cases . . . an indispensable phase in the overall search for the laws of the normal state" (p. 51). The ontological conception is one of opposites: disease is opposed to health. The positivist is one of continuous measures, which are quantitatively related; the normal is the average. The result is a bell curve. Yet this norm does not just exist; it is a technology that acts, that is normative, "a manifestation of an attachment to some value" (pp. 56-57):

Strictly speaking a norm does not exist, it plays its role which is to devalue existence by allowing its correction . . . the concept of health is not one of an existence, but of a norm whose function and value is to be brought into contact with existence in order to stimulate modification. This does not mean that health is an empty concept (1991, 77).

Canguilhem also insists that we distinguish the normal from the experimental. The second, positivist definition of normal emerged with the laboratory. This paper has made an argument about the colony as a form of laboratory.

Canguilhem does not ignore environment. He discusses it in relation to the "concept of adaptation and that of psychosomatic relation to which its analysis leads." He also makes us wonder more deeply about Lambillon and his laboratory: "Adaptation is thus considered as the physiological function par excellence. . . . But perhaps human physiology is always more or less applied physiology . . . that is, the biological study of man in cultural situations which generate varied aggressions" (1991, 270-71).

With this concept of normalization — his insistence that we see the continuing interrelation between the positivist and ontological concepts of the normal — Canguilhem (1991, 253) shows how the notion of the normal human organism is extended to the realm of the social: "Social organization is, above all, the invention of organs . . . normalization summons up planning which, in its turn, requires the establishment of statistics of all kinds". Is it possible that Lambillon's inertia over prenatal care was related to his not wanting to contaminate his laboratory of adaptation with the production of facts based on the normalization of the "so-called civilized white man's" body (p. 165)? As Canguilhem noted: "We definitely think that if the European can serve as a norm, it is only to the extent that his kind of life will be able to pass as normative" (p. 172).

Lambillon's supposed epidemic of eclampsia in Leopoldville did not change his beliefs about cultural variation, evolution, and normality; it confirmed them. He predicted, in a sense, that this "disease of civilization" would erupt due to the — in his mind, inevitable — encounter between the modernizing city life and the native body. His vision of this encounter perhaps remained more that of a scientist in a laboratory than that of a doctor practicing therapeutics, a practice that by its very nature is normative. His thinking was oriented toward cultural anomaly within global space rather than toward individual illness in experienced time. Health, in this context, bordered on "an empty concept." Canguilhem might name this "evil."

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## HOW CAN MY YOUNGER SISTER BE OLDER THAN ME?: THE SPLINTERING OF OLD AGE IN SOUTHEASTERN BOTSWANA<sup>1</sup>

*Julie Livingston*

Over the past three and a half decades the aging process itself and the experiences of *botsofe* (old age) in southeastern Botswana have undergone a series of changes, splintering and reconfiguring the meanings of aging in ways that are confusing and contested by both the elderly and their juniors.<sup>2</sup> Part of the confusion stems from the inherent complexity of *botsofe*, in which physical and social markers are read against one another. Botswana historically understood *botsofe* as a complex state in which physical decrepitude, spiritual potency, and aggregated knowledge and experiences of striving converged in an individual near the end of a long life.<sup>3</sup> Physiology triggered definition. Wrinkled skin, grey hair, failing eye sight, and “walking on sticks” (the use of canes) all signaled to observers the onset of *botsofe*.<sup>4</sup> But physiology itself was never the total measure of age. Instead, it reminded the observer of the *motsofe*'s (elderly person's) potential for specialized discursive practices (such as the mastery or use of deep Setswana), wisdom and spiritual transcendence, proximity to the ancestors, and position within a family. In the past as now, an individual's entry into elderhood was a gradual process, the contours of which were negotiated among families, neighbors, and increasingly regional and national programs.

Yet in recent decades both the physical and social markers that anchor meanings have shifted in complicated ways. Thus current local debates and rhetoric about *botsofe* are responding to a changing demography in which the population of older persons is growing,

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<sup>1</sup> I am grateful to Caroline Bledsoe for comments on an earlier draft of this paper. I would also like to thank Dikeledi Moloi, Tshepiso Moremi and Condril Mosala, who assisted me in interviewing informants.

<sup>2</sup> Most of my data comes from southeastern Botswana where I did my fieldwork between 1997 and 1999. The majority of the population of Botswana is concentrated along the eastern corridor of the country and I expect that these conclusions can be generalized to the central district in eastern Botswana as well. I would, however, expect departures and divergences in the more sparsely populated and impoverished areas of western Botswana.

<sup>3</sup> For more elaboration on the complexity of *botsofe*, see Guilette 1992, especially chapter 5.

<sup>4</sup> In his research on aging among the Meru, anthropologist Samuel Thomas (1996, 238) has suggested that a decline in age sets as a primary means of social organization has encouraged the rise of physiological markers in definitions and perceptions of old age. In my own oral research in Botswana I found elderly people of today referring to physiological markers in their perceptions of *botsofe* as children when age sets, though declining in importance were nonetheless still mobilized for various types of work and community organization. Still, I cannot be sure whether such recollections reflect contemporary perceptions of aging in the 1930s and 1940s, presentist interpretations of aging in the 1990s grafted onto memory, or something specific to intergenerational perceptions in which children perceived the elderly in primarily physiological terms, while adults relied on the social manifestations of elderhood to define *botsofe*.



and a shifting epidemiologic context in which those elderly people are increasingly frail, sick, and debilitated. Such debates also represent ongoing attempts by seniors to negotiate a changing socio-economic and moral landscape in which only the residue of the gerontocratic hierarchies of earlier times remain amidst a reconfiguring sense of community and family. In these debates, idealized or normative historical understandings and experiences of elderhood constitute a morally imagined trove of images and ideas from which people today make sense of *botsofe* as they continually determine its forms.

Below I will review a few aspects of the contemporary history of *botsofe* in Botswana to suggest some of the ways in which physical and socio-cultural change repeatedly intersect and reshape the images of “normal” old age.<sup>5</sup> Epidemiologic and demographic transitions, increasing pressures on lay nursing care, changes in work, and the introduction of pensions have together led to a current fracturing of old age, such that over recent decades the various elements of *botsofe*: *tsfetse* (chronological age, senescence), *godile* (spiritual transcendence), and *bogolo* (elderhood) have each shifted at different times and in different directions in historically contingent ways. Thus, the experiences of the elderly, their daily physical realities, their positions within family and society and ability to negotiate care, their control over labor and monetary resources, and their spiritual lives are all rooted in a set of historical transformations that have reconfigured and redefined the aging process itself. In this paper, therefore, I am suggesting that the “normal” physiology and the social position of seniors have simultaneously changed so that chronic illness is increasingly seen as part of “normal” old age, just as the elderly lack much of the socio-economic and cultural power to command care that they once had.

Much of what follows relies on oral evidence collected during field work in Southeastern Botswana between 1997 and 1999. In their conversations elderly people regularly reconstructed a nostalgic past in which they fused these diverging elements of *botsofe* back together, into what they considered to be a proper balance.<sup>6</sup> Thus they juxtaposed seemingly contradictory images of “strong” (physically and spiritually), productive, and frail and debilitated elderly who regularly required and received care in earlier times.<sup>7</sup> These idealized or normative images that seniors presented were constructed through a complex process of remembering in which several factors combined: the desire to

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<sup>5</sup> Here I am embracing Margaret Lock’s notion of “local biology” in which “[not only do] cultural beliefs influence the construction, experience, and interpretation of aging and other biological processes but that biological difference—sometimes obvious, at other times very subtle—molds and contains the subjective experience of individuals and the creation of cultural interpretations. A dialectic of this kind between culture and biology implies that we must contextualize interpretations about the body as products of local histories, knowledge, and politics, but also as local biologies.” But I seek to apply these insights to an historical epidemiology focusing on collective transformations in biological and socio-cultural aging experiences (Lock 1993, 39).

<sup>6</sup> For more on seniors’ construction of a nostalgic past that emphasizes the colonial period as a time of physical health and well being (despite considerable evidence to the contrary), and the reasons why independence in particular is chosen as the watershed moment, see Livingston 2001.

<sup>7</sup> The picture seniors present of *botsofe* in the mid to late colonial period is overly rosy. Beginning in the 1930s and increasing greatly from the post World War II period onwards, many seniors struggled to retain control over their juniors’ labor. Nevertheless tax records from this period indicate that they succeeded in doing so much more effectively than in recent decades. See Botswana National Archives [hereafter BNA] DCK 13/7 Exemptions from tax 1947 – 1956; BNA 2 DC-Mol/22 Bakwena Tribal Administration Court Cases (especially tax exemption cases 1936 –1964); BNA 2DC-Mol/21 Bakwena Tribal Administration Court Cases 1930-1949, tax exemption cases; BNA 2 DC Mol 2/23 Bakwena Tribal Administration Court Cases 1932-1938, tax exemption cases. There are too many relevant cases in each of these files to list each one separately, but the point is that elderly men by and large could count on their juniors to continue to hand over their wages and to pay tax on their behalf well into the 1960s. See also interviews with Mosito Makwapeng, March. 27, 1999; Basejane Motlhalamme, March 31, 1999; Konobule Kobue, March. 27, 1999; Maiketso Momokgwe, March. 24, 1999.

manipulate a changing moral economy to access care and respect, the teller's own shifting vantage point through the life-course, and an explicit local analysis of larger historical transformations. Thus, the elderly used these historical images in which senescence represented social and spiritual power rather than precariousness and marginality to make moral commentary to their juniors on the relationship between physical and cultural decay, and to express their confusion and anxieties over both their current loss of social power and their experiences of an epidemiological transition in which a rising tide of chronic illness and an AIDS epidemic exist side by side.

Botswana has a unique contemporary history. Thus, my selection of it as a case is not necessarily meant as representative or emblematic of a larger "African" context. Rather, I have chosen Botswana because the remarkable pace of post-independence development there has generated compressed or rapid epidemiologic transitions and sociocultural transformations that have forced a set of complicated conversations among Batswana over the normative meanings and experiences of age.

Following the mineral boom beginning in the early 1970's, Botswana enjoyed an unprecedented period of post-independence economic growth. Opportunities for upward mobility were rife and the government invested heavily in infrastructure and social welfare, providing food transfers as well as medical and educational services. Though over half the population continues to live in relative poverty, the rise in the general standard of living, the success of vaccination and other public health campaigns, and the provision of regular food aid and clean water in every village had a collective impact on the general health of the population.<sup>8</sup> Mortality rates for infants and children under five dropped substantially in the post-independence period, and life expectancy in Botswana rose from 55.5 years in 1971 to 67.6 years in 1999.<sup>9</sup> More importantly, the census figures show that the population of persons over age sixty doubled between 1971 and 1991.<sup>10</sup>

However, the decline in infectious disease and malnutrition following the developments noted above has also meant a rise in chronic illnesses including the increased prevalence of several conditions such as stroke, diabetes, and cancer that affect older people disproportionately.<sup>11</sup> Likewise, crippling arthritis resulting from a lifetime of agricultural and mine work are common, confining many elderly people to wheelchairs and beds.<sup>12</sup> At the

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<sup>8</sup> For the debate over causes of epidemiological transition, see, for example, McKeown 1979 and Szreter 1988.

<sup>9</sup> We should, of course, approach such figures with caution as they are not age adjusted and so at least partially reflect the drop in the mortality rate for children under five. Moreover, it is unclear at present how the high AIDS mortality rate is evidenced in these statistics. Nonetheless, such statistics when balanced against the census figures show that indeed the population of persons over age sixty doubled between 1971 and 1991.

<sup>10</sup> The total population of the country also doubled between 1971 and 1991, so I am not suggesting that the proportion of older people grew, only their raw numbers. Nonetheless, popular experiences of an aging population through a rise in the total numbers of elderly in any given family or community—contribute to perceptions that there are many more elderly people now than there were long ago (Botswana Government, Central Statistics Office, 2000).

<sup>11</sup> Here I am bracketing the question of HIV/AIDS, which in the artificial schism between infectious and chronic illness is neither fish nor fowl. Though the ongoing AIDS epidemic has seriously impacted the lives of the elderly, they have suffered from infection in much lower numbers than their juniors. This is not to diminish, however, the experiences of the many elderly who have HIV/AIDS, nor to ignore the role of the elderly as a group in disease transmission. For an excellent discussion of some of the relevant issues concerning elderly Batswana and AIDS, see Ingstad, Bruun, and Tlou 1997.

<sup>12</sup> Though we don't know where the line between "disabled" and "chronically ill" was drawn, the 1991 census classified 17 percent of the elderly population as disabled, and most of these people suffered from muscular and skeletal complaints or blindness "particularly associated with the physically demanding lifestyles" that many lead (Coombs, Khulumani, and Ngome 1993). This high prevalence of disability, and the pervasiveness of debilitating chronic illness among the elderly is also born out by my impressions gleaned while working with a community based rehabilitation program in southeastern Botswana between 1997 and 1999, and conversations with clinic

same time, certain physical conditions or impairments that had historically signaled the onset of old age, such as blindness or deafness are now subject to potential amelioration or even reversal by biomedical technology. Since independence, medical developments have made eye glasses, cataract surgery, and hearing aids increasingly accessible to older Batswana providing the potential for multi-directional movement over the physical boundaries that mark *botsofe*. Still, the current overlapping of chronic illness and old age have remade the normative images of the elderly. Increasingly, people recognize that *botsofe* has begun when chronic and debilitating illness has taken hold, as evidenced in the following comment by Makotu Tsiane who was close to 100 years old at the time we talked:

During our lifetime in the olden days, being an old person it was better than nowadays, because you would find an old person being very strong, going to the lands working for themselves, but while they were very, very old maybe using some sticks (canes), maybe with their head already very white. Unlike today, whereby somebody is 60 or maybe 50 something, and they will consider themselves to be very old. Nowadays *botsofe* is combined with very many diseases, with some other diseases unlike in the olden days. Nowadays *botsofe* and *bolwetsi* [illness] they are going together. (Interviews with Makotu Tsiane, January 29, 1999; Dumbrall Tshukudu, January 15, 1999)

The epidemiologic transition hasn't gone unnoticed, as another elderly woman explained, "Long ago we old people were not sick as we are today. We didn't know about stroke and sugar diabetes, and heart attack" (Interview with Mrs. Pule, Rra Molatthwa and friend, February 17, 1999). Despite these nostalgic memories of "strong" and healthy seniors, there were many bedridden elderly in the colonial period; however, such people were confined in huts that children (today's seniors) were barred from entering (Interviews with Mma Leburu, October 15, 1997; Mma Rabasimane January 22, 1999). Thus, part of the contrast between past and present that seniors describe stems from an attempt to make sense of their own shift in vantage points on *botsofe*, from the external view of childhood in which they rarely saw debilitated elderly people, to their current insider perspective as seniors in which many of their friends and neighbors or even they themselves are bedridden. Yet, they see this contrast as a product of historical change rather than as a shift in vantage points, even when directly questioned about such a possibility. Nonetheless, despite this caveat, there appears to be more truth than fiction to the idea that the post-independence period has been one of increasing illness and debility among older Batswana.<sup>13</sup>

Chronic illness among seniors, as Mrs. Tsiane suggested, has also meant a lowering of the normal biological age for entry into *botsofe*. In other words, chronic illness has remade senescence for many debilitated adults in their 50's and 60's, as such illnesses precipitate an early movement into old age. The normalization of debility in older adults has brought a socially disruptive, physically manifested inversion of age-based or generational hierarchies in many cases. Many robust elderly people find their younger siblings or even

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staff and doctors who have worked in Botswana since the colonial period, not reliable statistics. (see The Cheshire Foundation of Botswana case notes 1991-1997; Livinstone field notes; Interviews with Dr. A. Merriweather, October 8, 1997; Dr. K. Seligmann, August 3, 1999; Merriweather 1982). Of course, mapping epidemiological transitions in developing country settings presents certain methodological dilemmas since the ability to diagnose certain ailments (for example many forms of cancer) and the desire to count certain conditions in nosological tables and statistical returns are historically contingent and based on a range of factors including the perceived prevalence of a given disease. Preliminary results from a study ongoing in the early 1990s of 450 people over aged 60 in a single village in southeastern Botswana suggest that "hypertension seems to be a major problem" (Ingstad, Sandberg, and Tlou 1992, 397n. 7).

<sup>13</sup> At the workshop, Alaka Basu raised the very astute point that the current generation of elderly are the product of a unique set of historical circumstances, in that they aged just as the factors creating the epidemiologic transition were occurring. Thus it remains to be seen whether the next generation of seniors will have the same epidemiologic profile as the current generation.

their own children are more frail than they. In the early to mid-twentieth century *botsofe* still implied tremendous spiritual and social power manifested in ancestral cults and gerontocratic control of family resources and decisions. With the collapse of both these routes to elderly power in the face of migrant labor and the growing presence of Christianity beginning roughly in the 1930's, however, only the vestiges of the spiritual and social significance of *botsofe* remain. Yet seniors cling to the identity of *motsofe* (old person) in morally powerful ways that preserve a significant place for them within their family. Now chronic illness threatens that place yet further as the potential for members of two generations to occupy *botsofe* simultaneously promises to strip the state of some of its remaining moral power, peeling *bogolo* (elderhood) off of the normative images of *botsofe*.

Nonetheless, some older women use their senior position within the family to argue against diagnoses that define their juniors' frailties as *bolwetsi* (illness) or *bogole* (disability). Instead they argue that the problem is indeed evidence of *botsofe* (for example, the cases of O. S., D. T., and K. T. in my field notes; Interview with Ponyane Masie and friend November 8, 1998).<sup>14</sup> In several cases that I observed, people in their early sixties suffering from chronic illnesses found their mothers and aunts pushing them across the gateway into old age, even as their children tried to hold them back, generating much debate among family members and medical practitioners about the physical definitions of *botsofe*.

These are not abstract debates. Something very real is at stake in women's negotiations of the physical definitions of *botsofe* care. Tswana daughters are expected to nurse their mothers in their old age, while Tswana mothers are expected also to nurse their sick and disabled adult daughters, often moving compounds to do so. Thus, when the sixty-year-old daughter of an eighty-two-year-old mother becomes debilitated through stroke, arthritis, cataracts, or cancer her mother may attempt to ensure that her daughter's condition is defined as *botsofe* rather than *bolwetsi* (illness). This frees the older woman from the potentially overwhelming responsibilities of caring for her daughter, displacing that responsibility onto the patient's own daughters. In the current context of the AIDS epidemic, and with many younger women leaving rural communities to pursue wages in town, nursing care is at a premium. Therefore, senior women, who are often caring for grandchildren as well as sick adults, might in turn try to resist the responsibilities of caring for their mothers, and thereby attempt to define their parents' frailties as *bolwetsi*. Thus, even as the physical markers of *botsofe* are reflecting changing epidemiological realities, their meanings are negotiated in the context of a larger set of pragmatic and social concerns.

I did not pursue the ways in which older men participated in such diagnostic negotiations in my research, though the question begs investigation.<sup>15</sup> It does seem, however, that older women's ability to successfully define their children's ailments as *botsofe* is not without its price. In cases I knew where stroke precipitated an early transition into *botsofe* for adults whose mothers took part in the illness negotiations, tensions were rife between mother and child. In several cases mothers even refused to visit their adult hemiplegic children though they lived in the same village. Though I found it difficult to get the older women to discuss this with me, the few who expressed their anger or dissatisfaction pointed to their own more minor ailments and debility, upset that a younger person should be receiving more care than they themselves who had earned the privilege of receiving care through age (Interviews with N. S., June 24, 1999; G. T., August 9, 1999).

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<sup>14</sup> This observation is based on a relatively small sample, since I only got to know well four cases in which two generations simultaneously occupied *botsofe*—though I heard of or witnessed many others.

<sup>15</sup> While women stake their position in the definitions of physical debility through their morally powerful roles as care-givers, it seems that men negotiate the process through socio-political practices and various other forms of resource allocation and control.

Care giving, though critical for physical and emotional reasons, is also central to the moral economy of aging in Botswana. Models of “independent lifestyles” for the elderly are not popular in Botswana as they are in the United States.<sup>16</sup> Familial care-giving provides both public and private evidence of respect for parents and grandparents as much as comfort for the elderly. Older Batswana today remember that in their youth they demonstrated respect and love for their aged relatives and neighbors by cleaning their clothes, bringing them fire wood and water, and cooking their meals (Interviews with Kedibone Mothota, December 3, 1998; Mma Mosala, December 1, 1998; Mma Leburu, October 15, 1998, Mmantho (great-grandmother of Motswedi), December 9, 1998). With so many debilitated *batsofe* though, just as the population of caregivers (adult women) is overwhelmed on the one hand by their responsibilities, and diminished on the other through the rise of women’s urban labor migration, lay nursing is giving way in many instances to either cash gifts, paid nursing care, compromised care, or at its worst outright abandonment. The desire of older women to control a set of physical markers that define themselves and others as *batsofe* is part of a larger project in which people attempt to position themselves as particularly deserving of care and assistance (see Mutongi 1999). Furthermore, the presence of so many younger *batsofe* who haven’t reached the spiritual transcendence and wisdom associated with the very old, has further diluted the socio-cultural power of the category itself. Yet, the potential for stacking up of two generations in *batsofe* simultaneously is only one of several factors causing the detachment of *bogolo* from *tsotsetse*. Structural changes in the economy and in the meanings of productivity have also marginalized the elderly by positioning normative physical aging within an industrial model of declining capacity. Elderly people complete with their physical limitations historically had participated fully in productive life as they stood atop and directed a gerontocratic hierarchy mobilized for agro-pastoral, political, spiritual, and domestic pursuits. The following typical description of old age in the 1950’s and 1960’s illustrates how even the need to use a cane as an elderly woman did not mean the end to participation in farming. According to Mma Buenda (Interview January 5, 1999), “[i]n the olden days my mother, their ages, were growing very, very, very old, dying with many wrinkles... I mean our mothers they were growing to an extent that they wound up using sticks yet they were still very, very strong and plowing.”<sup>17</sup>

But productivity and output were not standardized in Tswana endeavors, so that physical decline did not necessarily impede the Tswana ideal of ‘*go dira*’ or continual striving.<sup>18</sup> Elderly people continued to work, and thus were perceived as robust even in the face of some obvious physical frailties. As Nana Apt (1993, 303) has described for Ghana, “under the traditional system, the aged are respected because they never cease to be productive.” Historically, trying and doing in and of themselves were more important than

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<sup>16</sup> Anthropologist Elizabeth Guillelte (1992, 245) argues for a particular model of elderly self-sufficiency among the Tswana in contrast to that in the West. She writes, “Self-sufficiency is a process of participating in behavior that has value. Behavior that involves family carries the most value. Behavior that involves coping with adversity is also valued. Adversity is expected with achieving. Achieving, in turn, is valued in relation to one’s present abilities. Caring for one’s body is the most fundamental aspect of “doing” for achieving for self-sufficiency, as the body is the source of all other valuable behavior”. I am not certain that I agree with all aspects of this characterization. For the elderly, being cared for *is* participating in behavior that involves family and thus carries the most value. I think inter-generational cooperative contention with adversity through nursing of aging bodies continually reaffirms the personhood of the elderly care recipient in ways that transcends or deny the characterization of “the body as the source of all other valuable behavior.”

<sup>17</sup> Also see interviews with Joyce Setlhabi and her mother January 15, 1999; Ponyane Masie, November 8, 1998; and the group interview with family of Mojaboswa Molaabatho, January 22, 1999.

<sup>18</sup> For a lengthy and valuable discussion of the role of *go dira* or striving in Tswana notions of personhood, see Alverson 1978.

quantifiable output as one woman's recollection of an elderly neighbor from her childhood in the 1940's illustrates:

I remember someone who was old, an old lady. She was blind...but still plowing. So this old woman was farming, but not herself exactly. Her children were doing the plowing because she couldn't move around so she was always seated. She was kind of supervising because she couldn't move around so the children would do it (Interview with Ponyane Masie, November 8, 1998).

This understanding of work and the generational division of labor gradually began to change over the course of the twentieth century in the face of new forms of work and new models of productivity. Age-related abilities to work that had helped to define *botsofe* have changed in recent decades (though staggered by gender) as the structure and meanings of production have. Throughout the late nineteenth and early twentieth centuries, young men and women were placed into age-grades or regiments for collective work on behalf of the commonwealth, even after the demise of initiation rites in the face of Christian conversion. Siblings could not be initiated into the same regiment, and so birth order was publicly spaced by regimental membership, as regiments were only formed every four to six years. Local chiefs determined regimental labor duties, pacing the type and vigor of work required so that older regiments were responsible for less rigorous physical requirements than younger ones, until eventually the chief would release the oldest regiment from their physical obligations altogether, signaling a collective movement into *botsofe* (Interview with Rra Molathwa, March 24, 1999).

The growth of the South African mines and subsequently the local migrant labor economy that began in the late nineteenth century and expanded greatly in the 1930's was an important factor in altering male notions of age-based productivity previously embodied in regimental labor. Mine work was organized according to industrial hierarchies of race and expertise and did not provide a role for seniors to supervise their juniors at work. In fact, older men (those with grey hair or those thought to be over the age of fifty) were deemed physically unfit by mine medical examiners who separated potential wage earners from non-wage earners (Livingston forthcoming). Thus, the physical body of a younger man had an industrial value and provided access to a wage, while older men could only obtain such wages through control over their juniors. Initially, this system was accommodated by the gerontocracy who continued to control the earnings of junior men. Soon, however, intergenerational tensions emerged as more and more young men attempted to wrest control of their wages from their seniors. Those whose physical identity neither signified *botsofe* nor industrially valued able-bodiedness were trapped at the margins of a social system in flux (Livingston forthcoming).

Women's work and thus their physical identity may well have been impacted by these changes wrought by male industrial experience, but certainly not to the degree of their male relatives, given that Tswana women, for the most part, were not employed in industrial settings in the colonial period.<sup>19</sup> It was not until the 1970's and 1980's that women begin migrating to the industrial centers and major towns within Botswana. This experience combined with that of the long term drought in the 1980's to threaten popular perceptions of the viability of agriculture and to push many women into work on "drought relief programs." Elderly women were and are excluded from such programs, thus women's work in the post-independence period has undergone some of the substantive changes that tied men's

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<sup>19</sup> Most Tswana women who migrated for work in the colonial period performed agricultural or domestic work on white owned farms or in white households in the Transvaal.

productivity to physical identity beginning in the 1930's.<sup>20</sup> These days elderly women, even many of those who are frail or sick, continue to work mainly in caring for small grandchildren and great-grandchildren whose mothers are off in town. This work, however, does not bring in cash or food, increasingly the most important index of social power. Instead it merely enables local employers to shift part of the burden of reproducing the labor force onto the rural elderly.

In addition to changes in epidemiology, care giving, and work, there is one more key factor that has rapidly and radically splintered the meanings and experiences of *botsofe* in post-independence Botswana: pensions.<sup>21</sup> In 1997 the Botswana government introduced an old age pension scheme. Those Botswana aged 65 and older became eligible for a monthly payment of 100 pula (roughly U.S.\$23) with occasional cost of living increases (the current pension is now 110 pula per month). The eligibility threshold at 65 was presumably modeled on other such pension programs in South Africa, Europe, and America that set similar chronological age for entry. Nonetheless, the implementation of the scheme set into place a new and concrete marker for old age that reflected shifting ideas about aging, at the same time that it reshaped practices and attitudes directed toward the elderly.<sup>22</sup> As the following typical remarks by Kabelo Sekgoma (aged 64) illustrate, 65 now means old age.

*Botsofe* of today and *botsofe* of long ago is quite different in the sense that these days you would find that one would be old but he hasn't reached that 70 yet, and he's sick. So it's always accompanied by illness (*bolwetsi*). Whereas before you would see someone being old, maybe close to 100 years but still not being sick. Old but not being sick ... The old age of today is only when you are 65 and getting this 100 pula they consider that to be old, and long time ago we considered old to be when you are not able to do things like because you have lost strength, even your skin showing with wrinkles. You don't have that power any more; you are walking on a stick. (Interview with Kabelo Sekgoma (pseudonym), December 9, 1998).

But if 65 is old, who is 65? Elderly people demonstrated that they qualified for the pension by producing their Omang identity cards at the local social welfare office. But the age printed on the Omang cards of most elderly people represented the outcome of a negotiated process that was inexact and controversial at best. Seniors, most of whom lacked proof of their birth date, were usually certified by their local chief who referred to their past regimental membership and/or other experiential criteria in certifying age. This served to collapse gradations in age that had previously been determined by factors such as birth order and age at puberty into a concrete and specific figure.

The pegging of *botsofe* at 65 also violated in many cases the physiological definitions of *botsofe* in ways that many people tried to challenge. The wife of Mr. Sekgoma (quoted above) returned from the social welfare office frustrated at the continual denial of a pension to her husband who was 64, but confined to a wheelchair with a collapsed tubercular spine. Thus, she considered him *botsofe* even if the government did not. In explaining the injustice she made a sweeping gesture towards her husband and said, "Just look at him. He is

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<sup>20</sup> I should note that elderly women are excluded from drought relief jobs on a different basis than elderly men were from mining. Elderly women complained bitterly about local social welfare officers who regularly rejected elderly women from drought relief jobs saying that they had adult children who should care for them, not the state.

<sup>21</sup> Though below I discuss some of the unintended ramifications of the pension system, and some of the difficulties in the initial implementation of such a widespread system, I do not mean to diminish the aims of the policy, nor the value that such redistributive payments have for individuals.

<sup>22</sup> This differs from the experience in South Africa where the instigation of old age pensions for Africans beginning in the late 1940s did not generate of new chronological marker for old age, rather it consolidated the development of a new social institution of "retirement" that dovetailed with pensionable ages (Sagner 2000, 551).

useless.” Moreover, bureaucratic errors in the process were quite common, and some elderly people found themselves denied pensions even as their juniors received them. Even when pensions were given to an entire set of siblings, the incorrect dating of the birth order was a source of virulent debate, and often held up by the elderly as a symbol of the decay of contemporary society. As one frustrated man remarked, “How can my younger sister be older than me?” By collapsing all those over 65 into *botsofe* and denying it to those who are younger the pension program has contributed to the splintering of old age and its meanings.

Above I have tried to present a starting point for a discussion of the shifting and negotiated processes of old age definition in post-independence Botswana. As the various elements of *botsofe*: chronological age, physical decline (senescence), social position (elderhood), and spiritual power have changed in relation to larger historical transformations, the elderly find themselves navigating a *botsofe* that does not meet their past expectations of aging. Epidemiologic transitions, demographic change, pressures on care givers, changes in work, and the introduction of pensions all point to ways in which physical and sociocultural change have intersected and reshaped one another to continually remake *botsofe*. They also remind us of the very real ramifications that definitions and ideas about normative physiology play in the increasingly contested and fraught experiences of the elderly themselves.

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## FRONTIERS OF “NORMALIZATION”: CONCEPTUAL CHALLENGES OF THE MEDICALIZATION OF SEXUALITY

*Stacy Leigh Pigg*

Sexuality has been the last domain (trailing even gender) to have its natural, biologized status called into question (Carole Vance 1991, 880).

Worldwide health development programs dealing with fertility regulation, reproductive health, and HIV/STD prevention are based on, and actively promulgate, a particular set of ideas about the sexual and reproductive body. Planned by experts in public health and development, set up in the context of national governments and relations between donor-government and nongovernmental organizations (NGOs), these programs eventually take concrete form in the often mundane activities of education and service delivery. Some of these activities involve concrete alterations in the body (getting Norplant into arms, condoms onto penises, penicillin into bloodstreams, iron supplements into gestating women, etc.), but many others intervene in the social sphere (increasing the age of marriage for women, encouraging child spacing, and urging husbands and wives to communicate about sexual and reproductive decisions) and involve complicated mixtures of education and persuasion. Together, these activities constitute a major frontier of medical normalization.

Consider this example: “African AIDS Epidemic Fueled by Sexual Ignorance,” states a recent headline. The news article sums up the case made within international public health agencies for sex education as a strategy for AIDS prevention:

WESTPORT, CT (Reuters Health) May 16, 2001: Sex and sexuality is at the core of the AIDS pandemic in sub-Saharan Africa and, according to a leading South African health official, researchers and politicians must involve the African public in a much more frank and open discussion of human behavior if they hope to successfully combat the disease. . . “Sex is regarded as a taboo in Africa — you don’t speak openly about it,” said Dr. Malegapuru William Makgoba, president of the Medical Research Council of South Africa [in an address to the National Institute of Allergy and Infectious Diseases in Bethesda Maryland]. “We all know that this is a sexually transmitted disease and that’s the bottom line,” he said. “We’re doing everything except focusing on the real major factor that determines whether or not you get the disease.” . . .Research into the particular cultural backgrounds and sexual practices of Africans is almost nonexistent, he continued, with no focus being placed on combating the sexual mythologies, taboos, and ignorance that inform the sexual behavior of many African men and women. . .” The whole subject of human sexuality in Africa is...based on hearsay,” Dr. Makgoba told Reuters Health. Addressing sexuality scientifically, “will make a lot of difference to people, both in the developed and the developing countries.”

Many social scientists and AIDS experts (myself included) share Dr. Makgoba’s conviction that attention to sexuality is a crucial factor for understandings patterns of transmission and

conditions of vulnerability to infection. We thus face two interrelated questions: how to understand sexuality in various social contexts and how to deploy scientific knowledge about the physiological possibilities of sexual transmission in interventions. In Dr. Makgoba's statements, "science" figures as the sole window onto the truth about sexuality, while varied African understandings are rendered as "hearsay," "mythologies," and "ignorance" to be corrected with factual information. Social scientists might wish to argue for more nuanced research on sexual meanings and practices so that addressing sexuality in public health will be more likely to "make a difference."

International public health is a highly pragmatic field, focused on medium-range questions: what to do; how best to do it; how to assess results; and what to do next. But other kinds of questions about these same processes of attempted health transformation are also possible: we might, for instance, take a broader historical view of the social transformations in which they are embedded, or, alternatively, zoom in on the everyday activities of the people (such as family planning motivators, AIDS outreach workers, trainers for traditional birth attendants [TBAs]) who actually carry out the plans in interactions by dealing with real people in various rural backwaters, small clinics, branch offices, etc. What are the wider implications of sex education carried out under the imprimatur of science for public health purposes? What are the effects of this medicalization of sexuality in new contexts? How do field workers in actual programs combat (in Dr. Makgoba's terms) "sexual mythologies, taboos, and ignorance" and what kinds of meanings and practices emerge from these efforts? I find it useful to think about the conversations, misunderstandings, hopes, complaints, and frustrations that occur in the day-to-day work of international health as guides to the "big picture." The interactions occurring now, today, this minute, in Irian Jaya or Nepal or Uganda under the auspices of a public health program are part of a much larger historical phenomenon, one in which institutional networks internationalize biomedically-based knowledge and technology.

This is the cusp at which medical knowledge changes. One way to think "backwards" about medical normality (especially from an international perspective) would be to think "forward" about the still-unfolding effects of reproductive and sexual health activities occurring through health development channels. How might we understand these incomplete processes of modernization and medicalization as they cross-cut a diversity of real life situations around the world? What are their effects on bodies, social relations, and consciousness?

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In this essay, I focus specifically on the internationalization of certain ideas about the sexual body. The sexual body is, of course, related to the reproductive body, though not coterminous with it. We know that there is cultural and historical variation in the ways societies approach the sexual and procreative capacities of bodies. I am interested in the ways that a modern, scientific frame for understanding the sexual body takes root in contexts where it was, until recently, unfamiliar. I address a particular example, AIDS/STD prevention programs in Nepal, because it raises some important theoretical questions about how we think about what is "social" and what is "biological" in an account of sexuality. We are accustomed to thinking of the "social" dimension as variable, and "biological" dimension as stable, but the medicalization of sexuality through sexual health programs confounds this way of thinking. At the end of this essay, I tentatively address some larger theoretical issues in how we think about scientific knowledge in relation to society and nature.

One effect of HIV/AIDS and STD prevention programs worldwide has been to put "sexuality" on the public health agenda in new and more visible ways. This is one site we

might investigate to understand the formation and dissolution of baselines of medical normality. The push to launch AIDS prevention programs in Nepal (where I have researched emergent public representations of AIDS in the 1990s) has generated new forms of institutional attention to sex. This new attention to the sexual activities and sexual consciousness of Nepalis in the name of disease prevention takes concrete form in: (1) the focus on the prevalence and treatment of STDs; (2) attempts to conduct research on sexual behaviors and practices; and (3) the promotion of sex education (including training health personnel to deal sensitively with sexual issues). This newly legitimated (but controversial) official public attention to sexuality was the cutting edge where Nepali health educators, outreach workers, and program planners struggled with what it meant to do this work. Donor interest in AIDS prevention had thrust them into programs that required them to speak to people about STDs, sexual intercourse, condoms, and to think of sexuality in terms of disease and public health. These activities were seen by planners as the scaffolding necessary to reach the material goals of reducing transmission of STDs and HIV and increasing rates of treatment for STDs; in other words, the guiding view was that more open interpersonal and societal discussion of sexual issues, together with more fact-based sexual and reproductive knowledge, were essential steps in accomplishing the public health goal.

To formulate and carry out these programs and to produce public education materials, Nepali AIDS workers used template materials from donors and technical assistance agencies. Manuals, curricula, and guidelines in use elsewhere in the world provided models for questions for KAP surveys, outlines for AIDS and sex education lessons, messages for AIDS awareness posters and pamphlets as well as group exercises to “desensitize” participants to enable them to talk about sex, and to explore “myths and misconceptions” about sex. The curricular materials included role-playing exercises to “develop assertiveness skills,” drawings of the internal reproductive organs, step-by-step directions (verbal and graphic) on “how to use a condom,” and the four “steps to behavior change.” These materials were used in various combinations in “training for trainers” and in actual educational workshops for targeted groups.<sup>1</sup> The templates always include a statement about adapting materials to local cultural circumstances but this injunction implicitly emphasizes the universality of the frameworks and the information they contain by relegating cultural difference to a problem of fine-tuning information delivery. For Nepali health workers, these models of what to do and how to do it came not only as a package, but also as an orthodoxy. They were backed by the institutional authority of donors but also carried, more subtly, the imprimatur of science and modernity.

The AIDS prevention workers whose work I followed ethnographically in 1997 often noted that there is no word in Nepali that corresponds to the word “sex” in English. AIDS workers felt that many of the words in the template materials had no equivalent in Nepali. You can speak—bluntly or euphemistically, fluently or evasively—in Nepali about coitus, genitals, erotic desire, and of the different kinds of relationships between people established through these, but you cannot group all of this under a single category heading like “sex.” In mainstream international AIDS discourse, however, it is implicitly assumed that although different societies might imbue different aspects of sexuality with values about what is moral, erotic, embarrassing, desirable, normal, etc., these are values placed on what is in fact the same, recognizable thing that lies like a bedrock underneath all that cultural stuff. You can ask people to “talk about” *it* or, in training sessions, “reflect” on their “values toward” *it*, or set up a program to provide “education” about *it* or gather “baseline data” on *it*. The “it” referred to is the domain we call “sex” in late twentieth century English; “it” is

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<sup>1</sup> Much of the work involved training people to train or educate other people.

assumed to be self-evident. But for Nepali AIDS workers, establishing the self-evidence of this domain of “sex” was their first task. They were being asked to conceive of sexual practices as an object of public health interest and to persuade others to do so. This requires abstracting certain ideas and practices as “sexual.” It requires carving them out from their embedded place in social relations contemplating them not in terms of their social import but in terms of their potential “risk” with regard to HIV or STD transmission.

AIDS workers found themselves in a difficult position. Donor expectations concerning “best” approaches in AIDS education thrust them into activities that involved fairly direct discussion of sexual intercourse and sexual behaviors.<sup>2</sup> AIDS workers were expected not only to explain the mechanics of HIV transmission through semen and vaginal fluids but also to be non-judgmental in addressing the full range of sexual practices in which HIV could be transmitted, whether or not these liaisons or practices are condoned by society. Yet at the same time these workers were also charged with the job of translating AIDS information into culturally appropriate forms.

Therefore they often felt the difference between what they were supposed to say, according to the template materials in English from which they drew their information, and what seemed to make sense or be possible in Nepal. To many Nepali AIDS workers, it was not at all obvious how the discourse about “sex” used in these materials correlated with their social knowledge of sexuality. For instance, references in AIDS prevention materials to homosexual relations, or even men-who-have-sex-with-men, did not correspond with what many AIDS workers’ recognized as male-male erotic contacts in their society: “that” (homosexual practices) did not seem to be about “that.” Male-female penetrative intercourse seemed to translate obviously enough from English terms to Nepali realities. Yet even here AIDS workers found something odd about the materials, something they couldn’t quite put their finger on, something that didn’t fit into the slot left open in the curriculum for listing their culture’s values and beliefs about sexuality. What felt strange and foreign to them was the relentless stress AIDS work placed on the act, the behavior, the practice, the precise naming of body parts and desires. The excision of sexuality—as “sex”—from its imbrication in morally saturated connections among people is what AIDS workers encountered as odd and unfamiliar. To speak of “sex” in this abstract way for the purposes of AIDS education was alien. It was also variously emancipatory, useful, vulgar, pointlessly impersonal, morally dangerous, erotic, and, undoubtedly many other things, to different individuals, not entirely “Nepali.”

AIDS workers (and other health workers drawn into programs increasingly oriented around the rubrics of reproductive or sexual health) most often expressed this non-fit between the discourse of “sex” and what they identified as “Nepali” attitudes as a problem in and of Nepali society. “We are not open about sex,” AIDS prevention workers said. Nepali “society” and its “values” figured as obstacles, or at least, as deflections of an otherwise straight unfolding of a program.

But their sense of awkwardness and puzzlement led me to ask the question that they did not ask: What is the unmarked universal against which Nepali views and positions are being measured? Where does this language of “sex,” this frame for dimensions of embodied human experience, come from? Social historians of sexuality in Europe and America have traced it rather precisely. They argue that:

The separation, with industrial capitalism, of family life from work, of consumption from production, of leisure from labor, of personal life from political life, has completely reorganized the context in which we experience sexuality ... Modern consciousness permits, as earlier systems of thought did not,

<sup>2</sup> Family planning workers, in contrast, could address “husbands and wives” about “child-spacing” and could thereby refer to, without naming, the acts and desires that produce children for married couples.

the positing of ‘sex’ for perhaps the first time as having an ‘independent’ existence (Ross and Rapp 1997[1981]).

Some writers suggest that the delinking of sexual activity from procreation is the crucial turning point; others stress the commodification of sexual relations in general. Some analysts stress the displacement under industrial capitalism of the family as the main productive unit as the cause, while others give more attention to the shift in meanings around identity, individual, gender, family, and nation. Sex was politicized as an arena of social contestation in debates around gender roles, homosexuality, contraception, and eugenics (Weeks 1989; Brandt 1987; Gamson 1990). Sexual “pathologies” and desire itself became the object of medical interest and description. Foucault (1978) has argued that a more general “incitement to discourse” made sex the site for the operation of a modern form of subjectifying power.<sup>3</sup> Changes in the usage of the word sex in English show historical shifts in how we construe the bundle of things to which it refers. It was only as recently as 1975 that the Oxford English Dictionary (OED) first defined a usage of the word in terms of “pertaining to sexual instincts, desires, or their manifestations” (as quoted in Caplan 1987, 1). To speak of coitus as “sex” or “having “sex” is a usage dating only from the early twentieth century. The OED’s usage of phrases such as sex drive, sex offence, sex fiend, sex education, sex partner, and the like are dated no earlier than the late nineteenth century, although most come from the mid-twentieth century or later.<sup>4</sup>

What is clear, thanks to the work of social historians, is that the historical and cultural factors that intertwine in the formation of Euro-American societies as modern gave rise to a particular view of sex and sexuality. These profound shifts have most often been described through the lens of a “cultural constructionist” theoretical perspective that “reject[s] transhistorical and transcultural definitions of sexuality and suggest[s] instead that sexuality is mediated by historical and cultural factors” (Vance 1991, 878). “Mediated” here means more than just filtered through culture (more on this below) it means that something called “sexuality” only exists in and through cultural frameworks. The cultural constructionist approach has been quite handy for historians and anthropologists applying it to my example here—international development programs promoting sexual health—it gets tricky. The conundrum is this: for us at the turn of this century, this concept of a domain of “sex” is one of the cultural factors that *mediates* not only our sexuality (as we live it as persons) but also the obviousness of the common sense concepts on which we base many universalizing actions, including international health programs. We might say that sexuality is everywhere “constructed” through representations and social arrangements but it is not everywhere understood as “sex.”

This observation immediately suggests an avenue for investigation: do other cultures have other concepts of “sexuality?” Jeffery Clark (1997, 195) has pondered this question in relation to the Huli, a society in highland New Guinea:

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<sup>3</sup> Foucault (1978, 11) rejects the “repressive hypothesis”—the idea that modern bourgeois society has increasingly censored and controlled a natural biological instinct that was once (and could be again) free. What is taken as control and repression is actually and intensification of focus on the “sexual.”

<sup>4</sup> Interestingly, the historical and theoretical literature I have consulted uses the word, sex, to designate biological differences between male and female, and the word sexuality to discuss the broader arena of human erotic concerns. There is a gap between scholarly terminology and ordinary usage (in which we use the term “sex” to talk about things sexual and sexuality). I think this gap has the effect of obscuring the issue I address in this paper: the concept of a domain of sex, its roots in a particular social and scientific history, and its implications when internationalized.

[C]learly “sexuality” as an area of study imposes a Western framework of beliefs and analysis, which assumes that a category exists “out there” but does not ask whether this is also a category for non-western peoples like the Huli. Granted that sexuality is an undifferentiated experience for the Huli, it seems undeniable that there is a Huli discourse about sexual practices and the body. If “sexuality” is not (just) a private affair but a set of public beliefs about the practice and consequences of sexual behavior—and for the Huli these beliefs are based in and not separate from a cosmology which equates sociomoral relations with states of health—then the Huli could be said to have a concept of sexuality.

How sexuality (in this looser sense) is tied up with reproduction, aesthetics of pleasure, moralities, and regulation of behavior then becomes a question for ethnographic investigation. For anthropology, there are ethnographic techniques of asking and listening that would allow us to follow local concepts and concerns more closely and to arrive at some understanding of differences in concepts of sexuality.

Yet it is worth noting that such a study, done well, would likely be unrecognizable as a study of sexual behaviors and attitudes in the eyes of the agencies and programs seeking information about local beliefs and practices for the purposes of planning sexual health programs. This is an ethnographic fact that alerts us to another issue: there is a border zone where “nonwestern” concepts of sexuality meet, and are affected by, “western” concepts of sexuality. While we are correct to identify these as “concepts,” it is important to keep in mind that they meet at the site of actual human bodies.

The polarizing categories western/nonwestern are too crude, however, to take us very far in understanding what is going on in the gray areas created at the moving edges of the interventions themselves—the space in which transformations of knowledge are occurring. The Nepali AIDS workers I discussed earlier found odd the reified, decontextualized, and ostensibly amoral discourse on sex that was presented to them as a commonsensical “of course” in the models they followed but they did not find it completely incomprehensible. Moreover, their own actions were quickly making it more familiar, and even necessary, in Nepal. Rather than trying to sift through these transformations in order to rescue an image of a purely indigenous sexuality untainted by “outside” western influence, we need to look more closely and carefully at the actual processes through which global circulating concepts become localized. When (some) Nepalis draw on and respond to a discourse of “sex”—one way (among others) to view, discuss, and act in relation to things sexual—is to make it their own and at the same time know it as alien. These complex moves of identification and differentiation defy interpretation in terms of a monolithic process of westernization inexorably rolling toward global homogenization.

How then would we find “Nepali” notions of the sexual body? Sexuality in Nepal is experienced in social matrixes, through organizing sets of public meanings, within a history. Just as we would not want to project western folk theories of the body, gender, sexuality, and family into this reality (see Ross and Rapp 1997; 1981), neither should we pretend that this reality is an unchanging site of cultural difference unaffected by global processes. A reified concept of “sexuality” can be said to have *emerged* in the context of the unfolding European modernity; in Nepal, now, it arrives from elsewhere as a fully formed truth tacitly embedded in the programmatic assumptions of international health. What is going on in Nepal now, led largely by AIDS/STD prevention initiatives and the concept of “sexual health,” is a biologization of sexuality.<sup>5</sup>

Behind international sexual health programs lie the sexual sciences, an awkward amalgamation of reproductive biology and sexology. Since the late nineteenth century, scientific research on sexuality pursued many separate but overlapping paths, including

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<sup>5</sup> Elsewhere I argue that, in the current moment, this medicalization of sexuality is occurring together with a sexualization of an emergent consumer culture and that the two developments need to be understood together.



investigations into reproductive physiology, endocrinology, genetics, sexual functioning, orientation of desire, gender roles, and sexual pathologies. All these projects were influenced by, and had influence on, social debates around marriage, family and gender that were carried out over issues such as social hygiene, STDs, contraception, and eugenics (See Clarke 1998; Fausto-Sterling 2000; Weeks 1981). Sexuality was brought into the domain of science and medicine, and the medicalization of sexuality, while often serving moral ends, established a discourse that allowed sexuality to be discussed with clinical detachment. Beginning around 1880, knowledge about the sexual body took a new form. The sexual sciences "endeavored to escape or avoid association with pathology, individual or social" (Porter and Hall 1995, 154) and "at least in intention, however compromised, set...out to apply the rigors of scientific rationality to a highly emotive area" in a way that Porter and Hall say "provided a radically new way to make, unmake, and remake sexual knowledge" (p.177). Yet by the 1920s and 30s, reproductive scientists were striving to separate their work from that of the more psychologically oriented sexologists in order to claim an even "cleaner" and "objective" legitimacy for their basic research, "providing scientists with the proverbial ten-foot pole with which they could touch reproductive organs with propriety" (Clarke 1998, 92). Now, in the present, despite the widened space between the interests of "hard" biological sciences and the "soft" science of sexology, international sexual health programs bring them together in a singular authoritative account called the "facts of life." Explanations of gender role and sexual identity, the mechanics of reproductive physiology, and normal sexual functioning are presented as a seamless bundle that travels as a package.

This discourse of health and hygiene around sex, with its sanitizing potential and its objectifying orientation toward the body, draws on knowledge that has jumped socio-historical tracks. In the modern West, social historians tell us, the knowledge of the sexual sciences developed in tandem with (and in part because of) social attitudes and political movements, and was quickly integrated into popular attitudes and understandings.<sup>6</sup> Biologization and medicalization of sexuality was a gradual process, occurring over decades. Currently in Nepal, in contrast, a preformed package of "facts" about the sexual body is imported and applied in both educational forms (sex education, sexual health workshops for health workers, etc.) and technological interventions (e.g. Norplant, estrogen therapy for women who have had hysterectomies, etc.).

There is a cultural bias in the very foundation of these programs. The idea that "sexuality" is a discrete and definable part of body and self is what makes it possible to posit an arena of sexual health.<sup>7</sup> Sexual health programs have begun to entwine some Nepalis in a new way of seeing their own sexual and reproductive selves, a way that involves the reification of the domain of "sex." This reification of "sex" occurs not simply through western bourgeois cultural values that creep into sexual health programs but also through very basic information about "biological facts" about chromosomes, hormones, menstrual cycles, fertilization, and microorganisms. In making this observation, I am not insinuating that these facts are somehow ideologically tainted, biased, wrong or unreliable. The point is that it is through things like sexual health lessons that people learn to see "sex" and to think

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<sup>6</sup> This is perhaps most vividly illustrated in the ways endocrinological research on "sex hormones" was quickly popularized and incorporated into popular notions of gender and sexuality (see Oudshoorn 1994; Fausto-Sterling 2000).

<sup>7</sup> Please note that in making this observation I am not insinuating that sexual health programs are "bad" and not worth doing. Rather, I am exploring what makes them problematic in so many settings, from the perspective of the people on the receiving end of them.

of their body as having a “sexual” component, and this way of seeing the body coalesces around biological and medical information.<sup>8</sup>

This new sexual body is one that is represented through maps of the internal and external reproductive organs; that achieves an adult form as masculine or feminine through the actions of hormones; that is susceptible to diseases from sexually transmitted microorganisms; that contains an inner sexual identity, among other things. The features of the sexual body that I have just listed feel true, basic, and unquestionable to those of us who have been raised in modern western societies in the late twentieth century. Myself a product of school sex education classes and *Our Bodies, Ourselves*, certainly found it mind-boggling, when, sitting in on a training workshop for 19-21 year old college students in a provincial city in Nepal, I realized that the ideas that they encountered in this workshop and perhaps in a single health lesson in school, but nowhere else were unfamiliar and difficult ideas for them.<sup>9</sup> These observations brought me face to face with my own assumptions about what is obvious about “sex” and what it would mean to address questions of sexual health. They sensitized me to the often subtle ways that biologized sexuality was being represented as normal through health programs.

One example is the “sexual words exercise” used in training workshops for AIDS peer-educators, health workers, etc. to “desensitize” participants to discussions of sexual matters. Participants are asked to generate synonyms (both formal and slang) for a list of “sexual words” that typically includes the following: sexual intercourse, breasts, penis, vagina, homosexuality, and anal intercourse. This exercise, repeated in training after training, instills the idea in both health educators and participants that this vocabulary set, with its emphasis on body parts, acts, and labels is the vocabulary of “sex,” and that to talk about “sex” is to address genitals and acts by cataloging them. (Note that everyone has to refer to this in English as “the sexual words exercise” because there is no word in Nepali for “sex” or “sexual”). The workers in the NGOs facilitating these trainings now find it impossible to imagine any other way of encouraging participants to talk about sexuality. To “talk about sex” in the service of AIDS/STD prevention is to do the sexual words exercise. Other possible sexual vocabularies—ones based not on the sexological gaze but on common understandings of erotic desire, relationships, and social dynamics—are not thought of as relevant to “talking about sex.” Another example is the sexual advice column and its cousin, the radio call-in show. These genres were quite new to Nepal in 1997, when I was there. The doctor who served as the expert in both these venues, answering questions and dispensing advice, frequently reassured writers and listeners about the “normality” of their particular concern. (“Normal” of course being stated in English because it would be difficult to articulate the possibility of “normality” in relation to sexuality in the Nepali language). He had made a special effort to acquire sexological reference books from outside Nepal, and it was information from them that he dispensed, though he told me that he often found it a strain to balance his answers between the medical facts and the sociomoral content of people’s questions. The new genres, criticized by some as “pornographic,” were nonetheless embraced by much of the urban middle-class as important “information about the body.” They helped inculcate a new medicalized way of speaking about sexual issues and concerns.<sup>10</sup>

<sup>8</sup> Rayna Rapp (1987) has made a parallel argument about the objective presentation of risk statistics in genetic counseling sessions prior to amniocentesis.

<sup>9</sup> Nepalis from more cosmopolitan and elite backgrounds would be more familiar with these ideas, while Nepalis from rural or less educated backgrounds would struggle even more with them. There is no single “Nepali” way of encountering this framework.

<sup>10</sup> The way that these medicalized possibilities are taken up, put to use, modified or contested by various actors is something that deserves further empirical research. Noting this medicalization is only the first step. What matters

The globalization of the sexual sciences via the common sense of international public health poses an immense challenge to our thinking about the relation between culture, biomedicine, and the body. The conceptual tools on which social scientists have relied for decades may not be up to the task. Grounded as we are in the mind-body dualism, it is hard not to want to peel off the malleable historically specific, ideological, culturally-biased soft layer in order to uncover the hard core of universal material reality that lies underneath all that social variation. Carole Vance (1991) has correctly pointed out that most studies of sexuality draw on a "social influence" model that posits a cultural molding of a universal biological bedrock of sexuality. Following Foucault, she urges a constructionist approach that takes sexuality itself as a contingent product of social and historical formations. Arguing that "the physiology of orgasm and penile erection no more explains a culture's sexual schema than the auditory range of the human ear explains its music," Vance (1991, 879) suggests that we move away from conceptualizing biology and physiological function as determinative and instead see "the body, its functions, and sensations as potentials (and limits) [as] incorporated and mediated by culture." Vance is certainly correct that this analytical shift forces us to problematize many assumptions about sexuality that derive from Euro-American beliefs, thus deepening our inquiries into the variability of sexuality through time and across space. Yet a social constructionist approach tends, ultimately, to simply push the question of what is social and what is organic to a further horizon. While it greatly expands our understanding of the "mediating role" played by culture in organizing the "functions" and "potentialities" of the body, it is content to leave the investigation of those functions and potentialities to the biological sciences. Ideological biases in medico-scientific research may be denounced but a residual category of what are regarded as material reality nonetheless inform even the most determinedly constructionist studies.<sup>11</sup>

Encounters with different conceptions of the body, its possibilities, and its functions jar us into recognizing how many of our convictions are grounded in the knowledge of the sexual sciences. When, for instance, a Nepali villager asserts that a woman can only get pregnant through sexual intercourse immediately following her menstrual period, even a modern social constructionist theorists' first reaction is that this "of course" is wrong. Folk physiological theories surrounding conception and fetal development look not only quaint to us moderns, but patently untrue. In the pragmatic work of international health development and health activism, much energy is devoted to correcting these sorts of "misconceptions." Relativist principles vanish (and indeed appear entirely unconvincing) when scientifically established truths seems so critically important to health and well-being that it would be wrong not to educate people to them. Such efforts may have numerous positive and empowering effects. Nonetheless, they also exercise power by relegating one set of action-generating knowledge about the body to the status of "mere belief" through a particular kind of authoritative claim. Through this move, certain actions become "illogical," "superstitious," or at least in need of remedy and corrective influence. This move often defines the line of cross-cultural tolerance in fields like international development, and it has a long history in colonial and neocolonial domination. But the authority to distinguish between knowledge and belief comes from science.

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socially, morally, and politically as well as that aired materially, and biologically, is which people do what with these ideas.

<sup>11</sup> Ian Hacking (1999) has noted that social constructionist arguments are retroactively oriented toward uncovering the social and historical processes through which a current sense of taken-for-grantedness about some object or idea has come about. Social constructionist arguments aim to unsettle, and they are therefore always addressed to an implicit audience that is historically located. (In other words the "horizon" at which it becomes possible (as in intelligible, or compelling) to argue that something is "socially constructed" is always shifting.

How should we regard this scientific authority? Social constructionist histories of medicine (and relativistic approaches in general) have heightened our sensitivity to the processual, shifting, and contingent character of knowledge that we would otherwise take for granted, thus fostering a mood of skepticism toward science-as-authority. Constructionist approaches have not been so helpful in understanding how scientific knowledge operates in the present. They are aimed only at unmasking the contingency of what we hold to be factual and true, unsettling our assumptions, perhaps, by disarticulating the elements that have contributed to the “construction” of what feels normal and true. We need a better theoretical tool for thinking about the relations between science, society, and the material world if we are to begin to sort out how changing cultural ideas interact with medical interventions that alter the constitution of the human body. Vance, for instance, has insisted that:

[A] social constructionist approach to sexuality must also problematize and question Euro-American folk and scientific beliefs about sexuality, rather than project them onto other groups...thus, statements about the universally compelling force of the sexual impulse, the importance of sexuality in human life, the universally private status of sexual behavior, or its quintessentially reproductive nature need to be presented as hypotheses, not *a priori* assumptions (1991, 880).

Vance makes an important point here, and her larger critique of biological essentialism in studies of sexuality is crucial. But I am not quite sure how she wants us to distinguish “folk and scientific beliefs” from scientifically proven facts, given that we know the dividing line between belief and knowledge moves over time and changes in relation to the perspective from which it is viewed.<sup>12</sup> Her formulation, though helpfully provocative, leads us to see only that international sexual health programs are based on Euro-American folk and scientific beliefs (as indeed I have argued above that they are). Further it implies that there could be a better, more culturally neutral version of these programs that would strip away the “beliefs” and work only through “the facts.” I am not sure this is possible, given the way that mere “information” about the “facts” necessarily carries with it a concept of the sexual body (as my examples from Nepal show). I think we could ask other questions. What processes and practices sustain a world in which those truths count in these ways? What makes this the standard? What actually happens, in societies and in bodies, as a result of the internationalization of this mix of Euro-American folk beliefs and scientifically produced insights? What changes? Who benefits? What becomes possible or impossible, and for whom? To pursue these questions is to bracket truth claims (as constructionists do) for heuristic purposes while at the same time paying closer attention to how truths are made and kept true by the ways that they are secured, used, and distributed in actual practice in the real world. Truths are kept true by social institutions working in concert with other entities such as the organic components and processes of bodies. The effects are simultaneously social and organic.

Scientific research does produce world-changing insights into the myriad nonhuman elements with which we coexist. Bruno Latour argues that science has, and deserves, this authoritative status because of its ability to develop ways of seeing, describing, and manipulating what he calls “nonhuman actors” and to harness these techniques to the varied

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<sup>12</sup> The relation between these beliefs and the process of scientific research is complex. For instance, Anne Fausto-Sterling (2000) has written about emergent understandings of “sex hormones”—how early endocrinological research was shaped by cultural notions of gender and sexual dimorphism, and how these notions were amplified and extended through scientific work on hormones that was carried out in a language that assigned sex/gender at the level of the cell (so that the body was suffused at the microscopic level with maleness or femaleness). Endocrinological research on the so-called sex hormones were readily taken up in popular culture, yet they paradoxically also formed the conceptual and material ground for the emergence of transsexualism (see Hausman 1995).

purposes of a wide range of human actors.<sup>13</sup> However, Latour (1987) argues that it is wrong to assume that scientific research merely reveals an underlying nature that was waiting to be found, and that the resulting scientific knowledge spreads around the world of its own accord simply because it is “true.”<sup>14</sup> If you look at any given moment in a particular stream of scientific research, Latour points out, you will see that some understandings have stabilized, in his terms, forming the unquestioned basis for current work that addresses open, unresolved questions. Latour observes that we come up with very different accounts of scientific knowledge depending on whether we are looking at scientific knowledge that is already “made” or that which is “in the making.” When we look at “science in the making,” we see a messy picture of controversies, false starts, uncertainties, tenuous theories, and unresolved questions. When we look at the “ready made” face of science, we see conclusions that are a done deal and knowledge that appears irrefutable because so many other projects, actions, technologies, and institutions are organized around that knowledge.<sup>15</sup>

Recent thinking in “science studies” eschews analytical efforts to sift out the distorting “influence” of culture or ideology from the “real” insights into nature. This familiar approach, science studies scholars argue, always has the effect of enforcing artificial separation between “nature” and “society.” When we think (as we commonly do) that understandings of “nature” are only representations filtered through cultural and historical lenses, we leave in place the idea that that lens could be more or less foggy, affording a more or less distorted picture of nature’s secrets. We are forced to judge where the absolute “bottom line” of nature’s reality lies in order to describe how knowledge generated in a given social context affects nature. Science studies come at this problem from a different angle. It asks how science reconfigures our relationship through specific kinds of active engagement that are themselves productive and not simply descriptive (Haraway 1997; Latour 1987; 1999). Latour (1999, 145-173) has argued that a scientific fact never emerges solely out of the singular event of discovery, but requires continued institutional upkeep, action, and work to remain true. Pasteur’s microbes exist not because Pasteur once convincingly said so, but because we “live inside the Pasteurian network, every time [we] eat pasteurized yogurt, drink pasteurized milk, or swallow antibiotics” (Latour 1999, 168). Moreover Latour argues that this is not simply a matter of changing frameworks of understanding on our part. When people begin to think and behave differently in relation to attributes and processes they perceive in the world, this is also an event in the history of the non-human actors involved. New scientific findings replace old ones and the world changes

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<sup>13</sup> “Nonhuman” is the term used by Bruno Latour and other philosophers and sociologists of science to disrupt certain established ways of thinking about human social actors in relation to objects, nature, and the material world.

<sup>14</sup> The relation between these beliefs and the process of scientific research is complex. For instance, Anne Fausto-Sterling (2000) has written about emergent understandings of “sex hormones”—how early endocrinological research was shaped by cultural notions of gender and sexual dimorphism, and how these notions were amplified and extended through scientific work on hormones that was carried out in a language that assigned sex/gender at the level of the cell (so that the body was suffused at the microscopic level with maleness of femaleness). Endocrinological research on the so-called sex hormones were readily taken up in popular culture, yet they paradoxically also formed the conceptual and material ground for the emergence of transsexualism (see Hausman 1995).

<sup>15</sup> Latour (1997, 98) argues can be complex to grasp, so I quote one passage here at length: “...Nature, in scientists’ hands, is a constitutional monarch, much like Queen Elizabeth the Second. From the throne she reads with the same tone, majesty and conviction a speech written by Conservative or Labour prime ministers depending on the election outcome. Indeed she *adds* something to the dispute, but only after the dispute has ended; as long as the election is going on she does nothing but wait.” This sudden reversal of scientists’ relations to Nature and to one another is one of the most puzzling phenomena we encounter when following their trails. I believe that it is the difficulty of grasping this simple reversal that has made technoscience so hard to probe until now.

as a result, not because there is a substratum of independent, ahistorical nonhuman substances behind all that happens but because the actual ways nonhuman actors are brought into human history makes things happen in the way they do. This is not an either/or proposition (either microbes have always existed or they have never existed until they were imagined as such by people); it is an assertion that takes seriously the historicity of the interaction between the forces, properties, and attributes of nonhuman actors and people engaged in specific practices, and the capacity of these interactions to affect both the world and human understandings.

One of Latour's main theoretical concerns has been to replace the all-or-nothing terms of "truth" and "reality" in which questions of the relation between representations and things are so often posed with a vision of gradients, continuums, and linkages that are established and maintained via locatable material practices. The challenge is to unravel how notions of the "baseline" of medical normality shift across time and space requires, I think, an approach that highlights the practices involved in making some kinds of ideas acquire their "stick" and their "reach."

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## **APPENDICES**



## APPENDIX 1

### WORKSHOP PROGRAM

The Program of African Studies (PAS)  
of Northwestern University  
presents a workshop:

**“Discovering Normality in Health and the Reproductive Body”**

March 9-10, 2001

Organized by Caroline Bledsoe, with the collaboration of Kuate Defo Barthelemy, Jane I. Guyer, William Leonard (Associate Professor of Anthropology, Northwestern University), Thomas McDade (Assistant Professor of Anthropology, Northwestern University), and Kearsley Stewart (Visiting Assistant Professor of Anthropology, Northwestern University)

**All events take place at the PAS, 620 Library Place, unless otherwise noted.**

#### Friday March 9

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##### **8:30-9:00**

Light Breakfast (coffee, tea, juice, fresh fruit, assorted pastries) served at PAS.

##### **9:00 - 12:30**

###### Opening welcome:

Jane Guyer, Professor of Anthropology; Director, Program of African Studies, Northwestern University

###### Introduction to the workshop:

Caroline Bledsoe, Professor of Anthropology, Northwestern University

##### **Standardization, history, and the science of obstetrics**

Chair:	Caroline Bledsoe
Discussant	Friday Okonofua
Rapporteur	Elise Levin

Kuate Defo Barthelemy, Associate Professor of Demography, University of Montreal:

*"Standardization in Population and Health Research"*

Raymond DeVries, Professor of Sociology/Anthropology, St. Olaf College:

*"Challenging Normality: Dutch Obstetric Science"*

Nancy Rose Hunt, Associate Professor of History/Obstetrics and Gynecology, University of Michigan:

*"Normality and the 'Disease of Civilization': Eclampsia in the Congo and the U.S. South"*

##### **12:30-1:30**

**Lunch:** An assortment of sandwiches and salads will be served at PAS.

**1:30 - 4:30**

**Age, aging, and maturation**

Chair	Kuate Defo Barthelemy
Discussant	William Leonard
Rapporteur	Chris Hayden

Fredrick Makumbi, Ph.D. candidate, Population and Family Health Sciences, Johns Hopkins School of Public Health, with Bernard Guyer, M.D., Professor and Chairperson, Population and Family Health Sciences, Johns Hopkins School of Public Health:

*"The second question asked is, 'How much does the baby weigh?' So, what is 'normal' birth weight?"*

Francis Dodoo, Associate Professor of Anthropology, Vanderbilt University:

*"Privacy, Context, and Hardship: Normalizing Child Sexual Activity in Nairobi Slums".*

Julie Livingston, Ph.D. candidate, History, Emory University:

*"How can my younger sister be older than me?: The Splintering of Old Age in Southeastern Botswana"*

**7:30 p.m.**

**Dinner:** All participants are invited to dinner at Thai Sookdee Restaurant, 810 Church St. (see Campus map). Please confirm with Emily Wonson by 1 p.m. today whether you plan to attend the workshop dinners on Friday and/or Saturday.

**Saturday, March 10**

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**8:30-9:00**

Light Breakfast (coffee, tea, juice, fruit, assorted pastries) served at PAS

**9 - 12:30**

**Puzzles in views of fertility, sexuality, and reproductive morbidity**

Chair	Thomas McDade
Rapporteur	Melanie Bielefeld
Discussant	Neena Schwartz

El Daw A. Suliman, Ph.D. candidate, Population and Family Health Sciences, Johns Hopkins School of Public Health:

*"What constitutes a valid measure of reproductive morbidity?: Clinical tests vs. Womens perception"*

Friday Okonofua, Dean, School of Medicine, University of Benin:

*"Pregnancy that does not stay: perception of fertility and infertility among rural Edo women"*

Samuel Enos, M.D., MPH candidate, Population and Family Health Sciences, Johns Hopkins School of Public Health :

*"Badu Guan: A celebration of high fertility among the Akan people of the South of Ghana"*

Rachel Chapman, Assistant Professor, Case Western Reserve University:

*"Endangering Safe Motherhood: Prenatal Care as Reproductive Threat When Medical Norms Exclude Screening for Social Risks"*

**12:30-1:30**

**Lunch:** An assortment of sandwiches and salads will be served at PAS.

**1:30 - 4:30****Language, culture and debate over the regulation of fertility and sexuality**

Chair	Francis Dodoo
Discussant	Kearsley Stewart
Rapporteur	Maureen Farrell

Lynn Thomas, Assistant Professor, History, University of Washington:

*"Debating the Impact of Female Excision on Childbirth in Colonial Kenya"*

Alaka Basu, Senior Research Associate, Division of Nutritional Sciences, Cornell University:

*"Post-Modern Contraception: The rise of traditional methods of birth control among upper class women in India."*

Stacey Leigh Pigg, Associate Professor, Sociology and Anthropology, Simon Fraser University:

*"Globalizing the Facts of Life"*

**Final Remarks**

Gert Brieger, Professor, Chairperson, Department of History of Science, Medicine and Technology;  
Director, Institute of the History of Medicine, Johns Hopkins School of Medicine.

**7:30**

**Dinner:** All workshop participants are invited to dinner at the home of Jane I. Guyer, located at 1931 Sherman Ave. (see Campus map). Please confirm whether you plan to attend with Emily Wonson by 1 p.m. on Friday.

For more information about the workshop, or to obtain copies of any of the papers that will be presented, please contact Dr. Caroline Bledsoe (cbledsoe@northwestern.edu) or PAS Program Assistant Emily Wonson (e-wonson@northwestern.edu)

## APPENDIX 2

### SESSION ON AGE, AGING, AND MALNUTRITION

#### (A): DISCUSSANT'S REMARKS: MEDICAL NORMALITY AND HUMAN BIOLOGICAL VARIATIONS

*William R. Leonard*

One of the challenges for biomedicine is to develop standards that effectively discriminate between normal, healthy biological function and conditions of pathology or illness. This challenge in developing effective norms is based, in part, on the fact that variation in most measures of biological function is continuous rather than discrete. Moreover, this variation is often influenced by factors such as age, sex, ethnicity, and a variety of ecological factors e.g., altitude, temperature, etc.. Western biomedicine has been slow to appreciate the nature of human variation, implicitly assuming that patterns of biological diversity observed in the industrialized world are the same as those found in other parts of the world. That is, there is the assumption that standards derived from relatively homogeneous United States and European samples will effectively apply to all human beings.

Research in biological and medical anthropology has helped to expand our understanding of “normal” human biology. Comparative, cross-cultural research over the last 40 years has effectively shown that what is considered “normal” and “healthy” in the Western/industrialized world may not effectively apply to the rest of the world. For example, comparative work on diet and blood pressure among traditional foraging and horticultural populations during the 1960s and 1970s clearly demonstrated that these groups did not show the same age-related increases in blood pressure that were assumed to be “normal” based on Western-world data Gleiberman 1973. Likewise, abundant comparative data on human growth and development now indicates that the ages of physical and reproductive maturity in much of world deviate markedly from what is considered “normal” in the United States Eveleth and Tanner 1990; Eveleth 1986. Indeed, recent comparative analyses have suggested that patterns of development in the US and other industrialized countries may be the extreme for the human populations, predisposing them to various chronic diseases and cancers later in life Frisch, 1988; Eaton et al., 1994.

Yet, while anthropologists and comparative human biologists have done a good job of describing human diversity and critically evaluating the use of Western-world biomedical norms, we have done less well at explaining the processes that produce patterns of human variation. Critiquing the norms takes us only so far. If our goal is ultimately to develop better norms and strategies for discerning “normal” from “abnormal” function, we must gain a better understanding of the factors e.g., genetic, environmental, and developmental that produce the underlying biological variation.

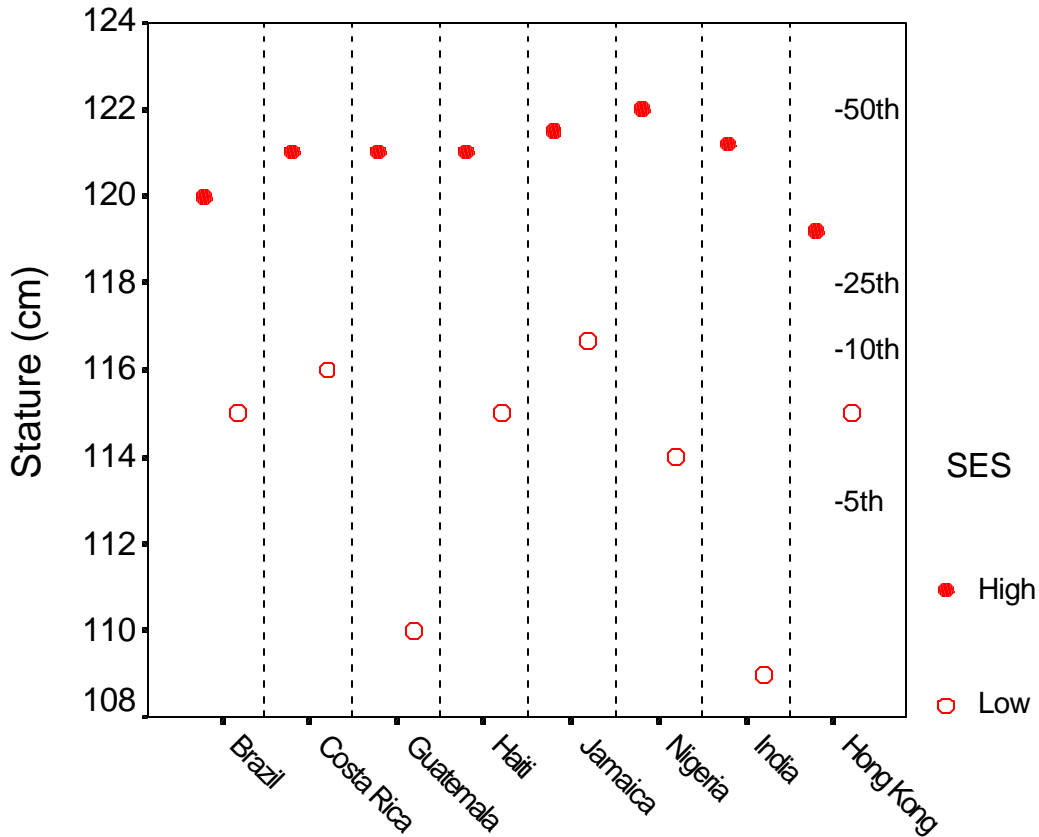
The changing views on international norms for evaluating physical growth in stature and body weight provide us with an example of how research on the nature of human biological variation can inform the development and use of normative standards. During the late 1960s and 1970s, a number of comparative studies on African and South American populations emphasized the potential “adaptive significance” of slow physical growth and small body size under certain environmental conditions Frisancho 1973; Stini 1975; Lee 1979. This work suggested that among various populations throughout the world, ecological

constraints on food resources resulted in natural selection for small body size. According to this interpretation, the use of U.S. or European growth standards for evaluating the health and nutritional status of these populations was inappropriate because the genetic growth potential of these non-Western groups was so different from that of Western populations. In other words, the use of growth norms was dismissed by some based on the interpretation that certain populations were genetically “small but healthy” Seckler 1977, 1982.

Since the 1970s, however, extensive research on the determinants of childhood growth has shifted thinking away from the so called “Small-but-Healthy” view. Indeed, the majority of evidence over the last thirty years has shown that while genetics play an important part in shaping growth, environmental including nutritional and socioeconomic factors play a much larger role in shaping the total range of world-wide variation in growth.

This argument has been elegantly summarized in several papers by Martorell and colleagues (Martorell 1985; Martorell and Habicht 1986; Habicht et al. 1974) presents some of the data from this work, showing the average height of seven-year old boys of high and low socioeconomic status from eight different countries, relative to the US 5<sup>th</sup>, 10<sup>th</sup>, 25<sup>th</sup>, and 50<sup>th</sup> percentiles (Hamill et al. 1979). Two critical points are evident from this graph. First is

**Mean Stature cm. of Seven-year-old Boys of Low and High Socioeconomic Status from Eight Countries Compared to the United States 5<sup>th</sup>, 10<sup>th</sup>, 25<sup>th</sup> and 50<sup>th</sup> percentiles.**



Source: Adapted from Martorell 1985.

the fact that the well-off children in each country i.e., those who are likely reaching or approaching their genetically-prescribed growth potential *all* have average heights above the U.S. 25<sup>th</sup> percentile. Second is the fact that well-off children from different countries look more similar to one another than they do to low SES children of the same ethnic background growing up in their own country. That is that poverty itself has a much larger influence on achieved stature than a child's ethnicity. These results do not discount the fact that genetics play a role in shaping population differences in height note the difference in height between high SES children from Nigeria [ $>$  U.S. 50<sup>th</sup>] vs. Hong Kong [ $\sim$ 30<sup>th</sup> U.S.]. Rather, they suggest that poor environmental factors have a greater hand in determining the extremes of world-wide human growth below the 5-10 percentile.

Subsequent research on the process of early childhood growth has better helped to explain the patterns outlined in Figure 1. It appears that among children growing up in poverty throughout the world, poor dietary quality and repeated bouts of diarrheal disease produce strikingly similar patterns of growth during the first 3-5 years of life Beaton 1989; Allen et al. 1992; Leonard et al. 2000. Further, long-term longitudinal studies have shown that these very low rates of growth during early childhood have negative consequences for health and well-being during adolescence and adulthood Martorell et al. 1995. Thus it appears that being "too small" and growing "too slowly" do have long term health consequences.

Based largely on this research, the World Health Organization (1983, 1995) currently recommends the use of the U.S. National Center for Health Statistics NCHS Norms for assessing growth and nutritional status of children around the world. Using the NCHS norms from Hamill et al. 1979., children with height-for-age and weight-for-age measures that are below the  $\sim$ 3<sup>rd</sup> US percentiles i.e., more than two standard deviations below the U.S. median. are regarded as "nutritionally at risk", and should be monitored for potential nutritional intervention. Thus, in applying this uniform standard for evaluating the growth status around the world, *we are not expecting all children to reach the U.S. average to be considered normal*. Instead we are saying that if a child is so small that he/she falls in the lowest 2 or 3 percent of US children of the same age and sex, then there is reason to think that the child is not reaching his/her genetic growth potential.

In sum, although there will be limitations to any norms or standards for determining health and well-being, it seems clear that by better understanding the nature of human biological variation, we can better refine our standards and minimize their limitations. As such, the work of anthropologists and other cross-cultural researchers has much to offer in advancing our understanding of what constitutes normal, healthy biological function.

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## (B): NOTES ON DISCUSSION

*Recorded by Christopher Hayden, Rapporteur*

**(a) On Fredrick Makumbi and Bernard Guyer, "The Second Question Asked Is "How Much Does the Baby Weigh?" So, What Is "Normal" Birth Weight? »**

Makumbi and Guyer opened the discussion by drawing out further policy implications from the data in their paper. The authors stated that women at-risk of having low birth weight (LBW) babies could be moved into a more normal range through screening procedures and treatment strategies. In developing countries, there are few babies in the residual distribution; thus, policies to counter LBW would have to act on all women and not just women at risk. In Africa, the only way to improve pregnancy and LBW is to shift the whole distribution (both mean and medium) to fall within a more normal birth weight distribution.

The discussion then turned to the variables of ethnic diversity and socio-economic factors in determining birth weights. For the US data, one questioner asked why such studies do not separate out 'white' birth weight data to reflect the heterogeneity among various ethnic whites. Following the question, Guyer pointed out that the surprising compactness of Chinese birth weights should further lend caution to the presumed heterogeneity among immigrant populations in the U.S. In terms of African birth weights, the authors reiterated a note of caution, since available demographic data is quite limited historically.

Two further issues raised in the subsequent discussion concerned the influence of gestational age on LBW and the appropriateness of 'bigger is better' policies to raise LBW. Guyer noted that gestational age is hard to use for LBW studies since it is difficult to measure. He supports more longitudinal demographic-based studies to see which factors may or may not have modified birth weight among populations. Socio-economic issues should be addressed, yet not to the detriment of identifying other influences as well. In any case, there has been little change in the overall average for US birth weights over the course of the twentieth-century. Livingston also critiqued the question of universalizing the view of normality that 'bigger is better' for birth weight policies, noting that women in Botswana do not want hard birth labors. Thus, policies for encouraging higher gestational weights for women fly in the face of common sense, since African women tend to "eat down" to reduce weight before births.



***(b) On Julie Livingston, How Can My Younger Sister Be Older Than Me?: The Splintering of Old Age in Southeastern Botswana***

Discussion began around the notion of 'old age'. In the West, the age considered to be 'old' is increasing as people refer to more advanced ages to identify the elderly. However, in Botswana, 'old' is getting younger, as Tswana notions of old age are stretching. Such trends may be becoming more common internationally, given the rising standards of living, change in diets, and increased medicalization of elderly populations. As for whether Tswana elderly are starting to receive more care as their numbers grow, Livingston noted that such efforts have not begun. The almost-exclusive attention given to the AIDS crisis has been to the detriment of other medical debates and problems, such as palliative care for the elderly. Neither 'traditional' African medical systems nor biomedical systems address chronic ailments associated with older age in Botswana.

The remainder of the discussion invoked the generational and gender consequences of shifting notions of old age in Botswana. As ideas of elderhood now change, there has developed, said Livingston, a dichotomy between the rhetoric and practice of care for the elderly. Working-age adults are increasingly shamed by other family members into giving money, building housing, and visiting older family members. These same 'children' seek to have more independent lifestyles, however, with the result of greater tensions among families. Livingston mentioned that in such situations, greater numbers of elders are left without care. As for gender, Livingston argued that as middle-age men now increasingly fall sick, it is women who are picking up the burden of care, producing greater tensions between daughters-in-law and mothers-in-law over nursing and care of the ill men. Networks of women reflect these tensions as people debate care roles.

## APPENDIX 3

### LANGUAGE, CULTURE, AND DEBATE OVER THE REGULATION OF FERTILITY AND SEXUALITY

#### I. Questions and Answers Recorded by Maureen Farrell, Rapporteur

*(a) On Lynn Thomas, “Debating the Impact of Female Excision on Childbirth in Colonial Kenya”*

During the question/answer session, Thomas noted that this was a context in which female promiscuity was a major issue. Nairobi itself in those days was synonymous with prostitution. Female initiation was all about preventing promiscuity and creating morality. But few of the debates about these practices actually reached the House of Commons. They occurred more among the Presbyterian missionaries and missionary doctors who stressed the health risks. At the time, women activists in the House of Commons lacked the language (both technical and political) to talk about female circumcision, so they angled the argument toward childbirth itself. During the anti-colonial uprisings, there was much popular opposition to intervention; even Jomo Kenyatta, although he is said to have opposed the practice, would never come out and say so because it was too popular. (In Meru, the idea had such support that girls are known to have performed it on other girls, sometimes symbolically: without actual cutting.) Thus, the question of “normality” is highly relevant: Why did missionaries fight against the practices, traditions, customs, and dances? Why not focus on the more important issues?

There seem to be striking parallels between colonial government and missionaries and today’s NGO’s, the WHO, and African governments, including questions of health risks and ethics. However, people who engage in the debate today don’t seem to realize the extent to which people struggled with it in colonial times. The international pressures today are similar to those with which people in the past struggled: there are parallels in finance and invasive abortion interventions. There were as well struggles over the ages of initiation. Some wanted to try to lower the ages, so there would be fewer abortions (the reasoning being that women who became pregnant before initiation would be likely to try to abort). Now, there are more expansive networks and bigger players. Who is determining the course of action is a now a major international issue.

*(b) On Alaka Basu, “Postmodern Contraception: The Rise of Traditional Methods of Birth Control among Upper Class Women in India”*

Following her presentation, Basu further stressed that as “traditional” methods of contraception are being used increasingly by upper class women in India, there are a number of ironies. Among them: total fertility rates among women who use traditional methods are about the same as those for women who use modern ones. Further, the educated women—those using traditional contraceptives—are likely to be younger. Analogous patterns hold as well for men: Viagra is not doing well in India because local sex clinics have their own herbal remedies. She noted that one of most popular publications (created by an NGO) about herbal methods is doing very well with the upper class. Even lactational amenorrhea is sometimes interpreted as a form of contraception—a phenomenon not currently tapped at all in surveys eliciting “contraceptive type.” Thus, family planning programs, misunderstanding this phenomenon, argue that (among other things) men should persuade their wives to accept “modern” contraception.

**(c) On Stacy Pigg, “Globalizing the Facts of Life”**

Responding to questions about her paper on AIDS prevention interventions in Nepal, Pigg noted that the creation of notions of normalcy is a major question now in thinking about international health programs. But although we are all trapped in particular mindsets of knowledge and belief, there is hope for social justice and change. Queried about the connection between Western sex education and the Nepalese body/sexual experience, she stressed that the key is not to identify programs as “Western,” but to ask how they affect people. How are we mixing sciences, and what are the effects? A good case in point is that how objects, non-human actors, are used in sex education campaigns, and how they are understood. When dildos are taken from traditional African sculpture to be used in international sex education, students in Nepal are baffled. And when a film—*In the Name of God*, from Ethiopia—is used to give lessons about the three types of female circumcision, what does it mean to have the woman’s body represented in that way? There is a tremendous literature as well on what happens when cadavers are opened up and Western medical students reflect on various ways of compartmentalizing the body.

Asked how her position might differ from that of social constructionists, Pigg emphasized that like Bruno Latour, she covers some of the same territory as social constructionists, but wants to move on in terms of society, nature, and truth claims, and is struggling to find ways to phrase this effort. Our conviction about what is the right intervention could make a difference in people’s lives. Everyone should have access to certain technologies and information to affect their well being. In anthropology, we have relativist discourses, and we also have the option to jump into the humanitarian action frame. When is it appropriate to jump back and forth between the two? Pigg said she wants better tools from anthropology to find points of connection

## **II. Closing Comments by Gert Brieger**

The question of normalcy in health is an easy one to overlook. “Health is simply life lived in the silence of organs,” observed someone; “it’s only when something goes wrong that you notice it.” In 1975, there was a conference similar to this one centering on anthropology, history, and disease in Africa. It was the first time anyone had brought together such a conference. Not surprisingly, the issue of standardization arose, and it was noted that baseline figures were needed. Other themes arose that were closely related to those we have heard here: normality, language, peace, and prosperity.

By now, medical historians have recognized wide variation in ideas of normalcy. The belief in the healing power of nature, for example, has a long tradition. But the conceptual work behind this conference has been wonderful. Here, and in research in general, we see more informed interdisciplinary work as well as boundary-crossing. We see as well more emphasis on the power of narrative and discourse—how deceptively words can permeate and define ideas of normalcy. (In a different domain, for example, we describe our “teaching loads” and our “patient loads”—not our “teaching opportunities.”) There is also more attention to women’s health and to pain and suffering.

Much has been written about the link between history and anthropology; the same is true for medicine and anthropology. The combination of the history of medicine and anthropology has powerful potentials. *The Journal of Interdisciplinary History* contains some excellent examples of combinations. The farther we can take this combination, the more fruitful it may prove.

## APPENDIX 4

### LANGUAGE, CULTURE AND CONSTESTATION IN FERTILITY: DISCUSSANT'S COMMENTS

*Kearsley A. Stewart*

Despite spanning three different countries (Kenya, India, Nepal), several themes draw the papers in this panel together: the role of government and/or non-governmental organizations (NGOs) in defining and regulating “normal” behaviors related to reproduction and sexuality; the impact of the economy (global capitalism, international donor, local commercial) on driving changes in “normal” reproductive and sexual behaviors; the question of culture change itself (does it? how? how quickly? for how long is change sustained?); and finally, the importance of language as a marker of submerged ideologies of normalcy and naturalness.

The tension between government and local praxis is most clearly demonstrated in Lynn Thomas’s paper. She recasts the Kenyan “female circumcision controversy” of the 1920’s and 1930’s as a clash of two competing viewpoints for maximizing chances for normal childbirth. The debate was between Protestant missionaries who sought to outlaw female excision in an attempt to reduce obstetric complications and Kenyans (mainly Kikuyus) who countered that the practice of female excision itself protected women from maternal complications during delivery. It is critical to emphasize the role of political economy in fueling culture change. The Protestant missionaries were able to enlist British colonial officials in their campaign because the colonials feared that low population growth might lead to a lack of sufficient labor for the Kenyan colony. Once colonial officials realized how far ranging was the practice of female excision, however, they abandoned efforts to legislate compliance. Resolution came not through the brut authority of the colonial government, or by the public health arguments of the missionaries, but through the creation of hybrid practices and accommodation at the local level. Personal choices by nurses, midwives, fathers, and mothers balanced individual economic interests against ideological commitments to the colonial state, church, and the local community. This created a middle ground that maximized local interests and minimized conflict. Thomas deftly demonstrates how the concept of the “normal” female body and childbirth was redefined and shows us how cultural practices were transformed by this intersection of missionary hospitals and Kikuyu pregnancies.

Whereas contestations over normality are an historical moment in Thomas’ paper, Basu reflects on new definitions of normal menstruation for upper-class south Asian Indian women. Citing preliminary data she identifies an interesting trend—those women most able to afford modern contraception and most likely to negotiate contraceptive technologies with their partners are increasingly the least likely to choose these methods. These women are turning away from oral contraceptives and toward birth control labeled as “traditional” by demographers—that is, periodic abstinence, withdrawal, and condoms. Are these Indian women reclaiming the “traditional” as “normal”? Basu argues no, suggesting instead that the emergence of this new constellation of class, ideology, and contraceptive behavior reflects a rejection of the over-medicalization of the female body by Western contraceptive technologies. She argues that these women now seek a contraceptive strategy that is natural, herbal, but most importantly, Indian. We might also consider this emerging behavior as a

strategy to reintroduce the condom as acceptable contraception for a married couple, thereby reducing chances of HIV transmission from the husband to the wife while avoiding the discussion of the actual risk altogether. The rejection of oral contraceptives also marks the return of a longer, more painful menstruation period traditionally marked by important public taboos and rituals. Basu might consider if this return to menstruation among upper-class South Asian Indian women is a reflection of their increased leisure time? Or have these women reintroduced or redefined new menstruation taboos, thereby recreating and reasserting means for the traditional public endorsement of fertility? The changing strategies of menstruation management and contraception offer a surprising real time perspective to the on-going redefinition of one aspect of normalcy for these upper-class Indian women.

While Basu shows that the women themselves clearly had the agency to create and negotiate changes in their own reproductive lives, Pigg focuses on how the introduction by international NGOs of AIDS prevention and education programs into the Nepalese public health system disrupted and transformed local concepts of sexuality. The importance of language as a marker of submerged ideologies of normalcy and naturalness is most clearly articulated in this paper. According to Pigg, there is no direct translation of the word “sex” into Nepali; therefore Nepalese peer educators reported discomfort and bewilderment trying to accommodate such a translation. Yet international NGO trainers pressed Nepalese public health educators to find adequate translations for the standardized public health vocabulary needed to implement Western-style AIDS programs. The result was a literal translation that made little cultural sense in the Nepalese context. But more importantly, Pigg argues, the scientific authority of Western biomedical models of the human body, disease, gendered roles, and sexual intercourse meant that local Nepalese concepts found no place in the standardized AIDS narrative. However, it is important to note that simply because local peer educators learned to mimic this Western AIDS discourse, it doesn’t necessarily follow that behavior actually changed or local discussions about sexuality in the Nepali language absorbed those Western concepts.

Is there more to changing Nepalese thinking about sexuality and disease than the global authority of Western scientific discourse? I wonder if the more persuasive ingredient might be the far-reaching scope of the NGO economy? Or perhaps the moral authority and legitimacy of the particular Nepalese individuals chosen to be peer educators? Is the local authority of a peer educator maximized or marginalized by their association with an NGO? Is it possible for these Nepalese peer educators to find the same middle ground between the community and the international AIDS NGOs that the Kikuyu were able to craft in the 1920’s and 1930’s in Kenya?

Probably not. The British colonial government needed Kenyan labor and land more than the Kenyans needed or could control the British. Today’s NGOs have emerged as unique international bodies whose financial support typically is derived from many nations. NGOs are not constrained by the specific political or economic interests of any single country; they act unilaterally and often despite what the host country wants or needs. Nepal and other developing nations hosting NGOs within their borders must forge new strategies to create a middle ground for the integration of local conceptual frameworks and international AIDS education programs.

## APPENDIX 5

### PUZZLES IN VIEWS OF FERTILITY, SEXUALITY AND REPRODUCTIVE MORBIDITY: DISCUSSANT'S REMARKS

*Neena Schwartz*

Recently, I was asked to write an overview of how reproductive endocrinology was translated into reproductive medicine and health during the twentieth century. The review will appear in the June 2001 issue of *Endocrinology*. I selected what I deemed were the five most important research discoveries and applications in this field during that time span:

1. Oral contraceptives, because they are still the only widely used, reasonably safe, and very effective fertility regulators.
2. Hormone “radioimmunoassays,” which have permitted frequent measurement of hormone levels in the blood.
3. Understanding of the mutual interaction of brain and reproductive hormones, with the brain regulating and controlling hormone levels and fertility, and hormones regulating brain function. The basic control of reproduction starts with the environment and the brain—we are not simply captives of our hormones.
4. The concept of hormone receptors, which has enabled us to develop treatments for breast cancer, prostate cancer, and osteoporosis.
5. The discovery of endocrine disruptors in our environment, resulting from industrial pollutants and pesticides. These substances threaten human reproduction as well as biodiversity on our planet.

While these findings have made a major impact on reproductive health in developed countries, the technologies and ideas have not made a major impact in a practical sense in underdeveloped countries, as is obvious from the papers I have heard at this conference.

Adele Clarke, a sociologist at San Francisco State University, has recently written a book about the rise of reproductive science called *Disciplining Reproduction*. The book describes the fashioning of the discipline of reproduction in the twentieth century from a medical, animal husbandry, and social science standpoint. It ends with a chapter entitled “Illegitimate Science.” The topic of reproductive science, she says, has historically been deemed “illegitimate” for four reasons: (1) it deals with sexuality, a “taboo” subject; (2) it is associated with controversial social movements: abortion, infertility, contraception, eugenics, and sterility; (3) it is associated with some past examples of clinical quackery; (4) it is associated with “brave new worlds”: fetal research, cloning, stem cell research; genetic engineering of crops. Although she was writing about the progression of reproductive science in the developed world, it is apparent that what she has to say is highly relevant to our discussion.

Just before this conference, the human genome sequence was published in *Science* (February 16, 2001). There appear to be only about 30,000 genes that direct protein synthesis in humans. This can be contrasted with 6000 genes in bacteria, and 20,000 in the worm. The DNA for the study came from two males and three females, taken from two Caucasians, one Asian (Chinese), one Hispanic (Mexican), and one African American. The differences in DNA among these “racial” groups are essentially undetectable; in fact, the chimpanzee genome is 99% similar to human! The genome data must mean that interactions between genes, developmental processes and the environment make the crucial differences among humans and between humans and other species, not their gene numbers. Surely these biological data should make people rethink societal classifications interpreted as “biology is destiny.” In the same *Science* issue is a quote of great significance: “From a genetic perspective all humans are Africans, either residing in Africa or in recent exile” (p. 1219).

As perhaps the only card carrying reproductive scientist at the workshop, I thought to come with great news of new techniques to solve every country’s overfertility and infertility problems. As I have listened to the papers at this conference, however, I feel the need to speak out as a feminist. *The problems we have been discussing are not problems of reproductive biology where we need new solutions.* The biology of pregnancy tells us that pregnant women need nourishing food, they need to have general health checkups. We already know that bearing too many children is a terrible physical drain on women. When infant and child mortality figures are high there is a biological need for more children but as more children live to reproduce themselves birth rates need to be stabilized at lower numbers. We already have many contraceptive techniques, some naturalistic, some more invasive. We do not really need more. The problem is to get people to use them.

For many years oral contraceptives were not available in Japan because the legislature did not permit their usage. As soon as Viagra became accessible, Japan’s legislators voted to permit their importation. Not surprisingly Japanese women were enraged, and now oral contraceptives are accessible in that country. Since men seem to be in charge in all of the African cultures we have heard about, the men need somehow to “permit” women to limit birthrates. The men need to accept responsibility for preventing sexually transmitted disease by using condoms. Reproduction is not just a *female* problem. And it is not just a biological problem—it is social and cultural as well.

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