

ETHICAL REVIEW COMMITTEE, ICDDR,B.

Principal Investigator P. Johnson

Trainee Investigator (if any) \_\_\_\_\_

Application No. 98-004

Supporting Agency (if Non-ICDDR,B) AIBS; NSF

Title of Study Fertility Decline in Bangladesh: Explaining Variability in Contraceptive Use

Project status:  
 New Study  
 Continuation with change  
 No change (do not fill out rest of form)

Circle the appropriate answer to each of the following (If Not Applicable write NA).

- 1. Source of Population:
  - (a) Ill subjects Yes  No
  - (b) Non-ill subjects Yes  No
  - (c) Minors or persons under guardianship Yes  No
- 2. Does the study involve:
  - (a) Physical risks to the subjects Yes  No
  - (b) Social Risks Yes  No
  - (c) Psychological risks to subjects Yes  No
  - (d) Discomfort to subjects Yes  No
  - (e) Invasion of privacy Yes  No
  - (f) Disclosure of information damaging to subject or others Yes  No
- 3. Does the study involve:
  - (a) Use of records, (hospital, medical, death, birth or other) Yes  No
  - (b) Use of fetal tissue or abortus. Yes  No
  - (c) Use of organs or body fluids Yes  No
- 4. Are subjects clearly informed about:
  - (a) Nature and purposes of study Yes  No
  - (b) Procedures to be followed including alternatives used Yes  No  NA
  - (c) Physical risks Yes  No  NA
  - (d) Sensitive questions Yes  No  NA
  - (e) Benefits to be derived Yes  No  NA
  - (f) Right to refuse to participate or to withdraw from study Yes  No
  - (g) Confidential handling of data Yes  No
  - (h) Compensation &/or treatment where there are risks or privacy is involved in any particular procedure Yes  No  NA

- 5. Will signed consent form be required:
  - (a) From subjects Yes  No
  - (b) From parent or guardian (if subjects are minors) Yes  No  NA
- 6. Will precautions be taken to protect anonymity of subjects Yes  No
- 7. Check documents being submitted herewith to Committee:
  - Umbrella proposal - Initially submit an overview (all other requirements will be submitted with individual studies). Protocol (Required)
  - Abstract Summary (Required)
  - Statement given or read to subjects on nature of study, risks, types of questions to be asked, and right to refuse to participate or withdraw (Required)
  - Informed consent form for subjects
  - Informed consent form for parent or guardian
  - Procedure for maintaining confidentiality
  - Questionnaire or interview schedule \*
- \* If the final instrument is not completed prior to review, the following information should be included in the abstract summary
  - 1. A description of the areas to be covered in the questionnaire or interview which could be considered either sensitive or which would constitute an invasion of privacy.
  - 2. Examples of the type of specific questions to be asked in the sensitive areas.
  - 3. An indication as to when the questionnaire will be presented to the Cttee. for review.

I agree to obtain approval of the Ethical Review Committee for any changes involving the rights and welfare of subjects before making such change.

Patricia Lyons Johnson  
Principal Investigator

\_\_\_\_\_  
Trainee

# COVER SHEET FOR PROPOSAL TO THE NATIONAL SCIENCE FOUNDATION

FOR CONSIDERATION BY NSF ORGANIZATION UNIT(S) <small>(Indicate the most specific unit known, i.e. program, division, etc.)</small> <b>CULTURAL ANTHROPOLOGY</b>	FOR NSF USE ONLY <b>NSF PROPOSAL NUMBER</b> SBR- <b>9720712</b>
PROGRAM ANNOUNCEMENT/SOLICITATION NO./CLOSING DATE <small>Fill not in response to a program announcement/solicitation enter GPG, NSF 95-27</small> <b>GPG, NSF 95-27</b>	

DATE RECEIVED	NUMBER OF COPIES	DIVISION ASSIGNED	FUND CODE	FILE LOCATION

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IS AWARD ORGANIZATION (Check All That Apply)  
(See GPG II.D.1 For Definitions)   
 FOR-PROFIT ORGANIZATION   
 SMALL BUSINESS   
 MINORITY BUSINESS   
 WOMAN-OWNED BUSINESS

TITLE OF PROPOSED PROJECT    **Fertility Decline in Bangladesh: Explaining Variability in Contraceptive Use**

REQUESTED AMOUNT <b>\$ 108,605</b>	PROPOSED DURATION (1-60 MONTHS) <b>12 months</b>	REQUESTED STARTING DATE <b>01/01/98</b>
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CHECK APPROPRIATE BOX(ES) IF THIS PROPOSAL INCLUDES ANY OF THE ITEMS LISTED BELOW

<input type="checkbox"/> BEGINNING INVESTIGATOR (GPG 1.A.3) <input type="checkbox"/> DISCLOSURE OF LOBBYING ACTIVITIES (GPG II.D.1) <input type="checkbox"/> PROPRIETARY & PRIVILEGED INFORMATION (GPG II.D.10) <input type="checkbox"/> NATIONAL ENVIRONMENTAL POLICY ACT (GPG II.D.10) <input type="checkbox"/> HISTORIC PLACES (GPG II.D.10) <input type="checkbox"/> SMALL GRANT FOR EXPLOR. RESEARCH (SGER) (GPG II.D.12) <input type="checkbox"/> GROUP PROPOSAL (GPG II.D.12)	<input type="checkbox"/> VERTEBRATE ANIMALS (GPG II.D.12) IACUC App. Date _____ <input checked="" type="checkbox"/> HUMAN SUBJECTS (GPG II.D.12) Exemption Subsection <b>pending</b> or IRB App. Date _____ <input type="checkbox"/> INTERNATIONAL COOPERATIVE ACTIVITIES: COUNTRY/COUNTRIES _____ <input type="checkbox"/> FACILITATION FOR SCIENTISTS/ENGINEERS WITH DISABILITIES (GPG V.G.) <input type="checkbox"/> RESEARCH OPPORTUNITY AWARD (GPG V.H)
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P/VP DEPARTMENT <b>Population Research Institute</b>	P/VP POSTAL ADDRESS <b>601 Oswald Tower University Park, PA 16802 United States</b>
P/VP FAX NUMBER <b>814-863-8342</b>	

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CO-PVPD				
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**NOTE: THE FULLY SIGNED CERTIFICATION PAGE MUST BE SUBMITTED IMMEDIATELY FOLLOWING THIS COVER SHEET.**

\*SUBMISSION OF SOCIAL SECURITY NUMBERS IS VOLUNTARY AND WILL NOT AFFECT THE ORGANIZATION'S ELIGIBILITY FOR AN AWARD. HOWEVER, THEY ARE AN INTEGRAL PART OF THE NSF INFORMATION SYSTEM AND ASSIST IN PROCESSING THE PROPOSAL. SSN SOLICITED UNDER NSF ACT OF 1950, AS AMENDED.

## Fertility Decline in Bangladesh: Explaining Variability in Contraceptive Use

This research will focus on the marked and rapid change in fertility that has occurred in Bangladesh over the past twenty years, a period during which the total fertility rate<sup>1</sup> declined from 6.3 in 1971-75 to 3.4 in 1993-94 (Mitra et al., 1995:27). The decline has been especially remarkable because of the persistence of conditions described as "pervasive poverty and underdevelopment ... [and] the absence of conditions believed to be necessary for such reproductive changes" (ICDDR,B, 1995:2). The country continues to be characterized by high childhood mortality, severe poverty, no official system of social security, low levels of education, and little participation by women in the wage labor force, all characteristics that often doom family planning programs to failure (Khuda, 1991; Larson and Mitra, 1992; Cleland and Streatfield, 1992).

The decline has been attributed to increasing use of modern contraceptives, and attempts to explain this increase have come primarily from demographers. Surprisingly, little anthropological attention has been focused on what is a quintessentially anthropological issue concerning variability in a population considered as relatively homogeneous in its cultural tradition: is variability in contraceptive behavior the result of purely idiosyncratic choices or are there discernible constellations of characteristics that enable us to explain and predict that variability? The objectives of the proposed research are: 1) to test hypotheses concerning such characteristics and their relationship to contraceptive choices; 2) to develop an instrument for assessing economic well-being that is more sensitive to local understandings of poverty and wealth, and that includes people's perceptions of resources; and 3) to produce an "anthropology of reproduction" that examines how fertility "...makes sense given the sociocultural and political economic context in which it is embedded" (Greenhalgh, 1995:17). Focussing on contrasts between couples who use modern methods of family planning and couples who do not, the research will employ a combination of ethnographic and survey methods to generate mutually informative quantitative and qualitative data and to provide a more nuanced picture of reproductive choice. The research will be conducted in the treatment area of the Maternal and Child Health-Family Planning and Health Services Project (MCH-FP) operated by the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B). The project is located in Matlab, a rural area approximately thirty miles southeast of the capital city, Dhaka. The proposed research will cover a twelve month period from January to December, 1998. The research will evaluate the explanatory and predictive power of an explicitly anthropological approach to fertility decline in developing nations. Its use of ethnographic knowledge to inform the development of a survey instrument and to provide the contextual background needed to interpret survey results will help address a recurring question in anthropological research of how to integrate "the intensive knowledge that ethnographic data collection stresses and the more extensive, statistically representative knowledge that survey approaches can provide" (Axinn et al., 1991:188). On a practical level, it will provide useful information for further family planning policy development in Bangladesh. Despite the decline in fertility, given a current annual growth rate of 2.6% and the age structure of the population, the 1995 population of 120,433,000, is not expected to stabilize until well into the next century, at which point it will have reached about 268,000,000 (World Development Report, 1993). This scenario suggests a troubled future for the world's most densely populated country. The data from this research should be particularly relevant in light of expressed concerns about possible "plateauing" in fertility decline (Mitra et al., 1995:136; World Bank, 1992:39), which would require family planning programs to "change in radically different ways to continue progress" (World Bank, 1992:45).

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<sup>1</sup> Total fertility rate (TFR) refers to the number of children an average woman can expect to produce over her lifetime, if she survives to age 50, and if current age-specific fertility rates continue.

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### Background

Demographic transition theory, particularly the aspect of that theory focussed on fertility decline, has until recently been dominated by explanations based on economic factors. Although earlier versions that proposed modernization and urbanization and subsequent economic change as necessary causal factors (Notestein, 1953; Davis, 1945) have been succeeded by more micro-level models, the underlying assumption remains the same: the balance between the costs and benefits of childrearing determines fertility decisions. In these models high fertility societies are characterized by conditions in which the benefits derived from children outweigh their costs. These conditions include the high value of child labor, children's potential support of parents in old-age, high childhood mortality, and the potential for social prestige, marital stability, and political power imputed to large families (Cain, 1977, 1983, 1984; Dixon, 1975; Lindenbaum, 1981; Wolf, 1972). High fertility under these conditions is seen as economically rational behavior. Under new conditions--such as the diffusion of mass education and change in productive systems that reduce the labor utility of children, increased opportunity

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costs of children with the possibility of education or wage labor for women, decreasing childhood mortality, and institutionalized social security--children no longer confer benefits that outweigh their costs and economically rational actors choose to limit their fertility.

More inclusive and less deterministic approaches, including those of Easterlin (Easterlin, 1975; Easterlin et al., 1980) and Caldwell (1976, 1980), while they expand the arena of choice in interesting ways, are still essentially concerned with the balance of costs and benefits. In considering changing circumstances, these demand theories focus primarily on changes in costs (McDonald, 1993:9). A recognized strength of economic models is their clear definition of variables, such as costs, and their ability to measure those variables. They have been criticized, however, for assumptions about the validity of those variables, particularly in cross-cultural contexts (Ferguson, 1992), for what may be the "crudeness" of such measures (Pollak and Watkins, 1993: 469), for the failure of their measures to make distinctions that may be locally relevant (Kabeer, 1991; Karim, 1990), and for their assumption of a "decontextualized universal rationality" (Hammel, 1990:455). Critics also argue that rational-actor models require unrealistic abilities "to store, retrieve and process information" (Pollak and Watkins, 1993:476).

Other demographers have called for greater attention to "cultural" factors as motivators of fertility behavior (Anderson, 1986; Hammel, 1981; Knodel, 1986; Levine and Scrimshaw, 1983; Pollak and Watkins, 1993; Watkins, 1986). Largely as a result of the Princeton European Fertility Project, in which the standard economic and demographic variables failed to explain historical fertility decline in Europe, these demographers suggested that culture might indeed explain what economics cannot. This approach has the advantage of eschewing simplistic economic determinism and advocating inclusion of important contextual variables often ignored in such models. It is not, however, without problems, perhaps the most serious of which is a failure to define culture clearly or consistently (Hammel, 1990). In early definitions culture was equated with religion, language, region, and ethnicity (Anderson, 1986:293) and differences in those characteristics were said to determine different fertility outcomes. Empirical studies have not supported this position (Hammel, 1995); moreover, this definition fails to explain fertility differentials within countries characterized by commonality of language, religion and ethnicity. Subsequent attempts at definitions of culture have been criticized as "residual," i.e., as assigning to a usually ill-defined "culture" whatever cannot be explained by standard economic or demographic variables (Kertzer, 1995). Often, when culture is defined, it is equated with a particular cultural subsystem, such as religion (Lesthaeghe and Wilson, 1986; Caldwell and Caldwell, 1987). A more basic flaw in both the economic and culturalist demographic models is their insistence on the discreteness of economics and a failure to recognize the embeddedness of economic phenomena within a cultural matrix. Once that relationship is recognized, discussions of the primacy of *either* economic *or* cultural factors (however defined) become meaningless.

A recent refinement in demography is worth discussing at greater length because it advocates including and recognizing the importance of human networks, and the existence of those interactions at a variety of levels. Bongaarts and Watkins (1996) review the findings of the European Fertility Project and cite the work of Cleland and Wilson (1987), to conclude "...there is no tight link between development indicators and fertility" (1996:641). Their own analyses of 69 developing countries leads them to agree that economic conditions have a role in fertility change, but they suggest that that role is not unproblematic, and advocate greater attention to what they call "social interactions" at both the local, national and international levels (1996:657). They identify three aspects of social interaction that they consider relevant to fertility change: "exchange of information and ideas, the joint evaluation of their meaning in a particular context, and social influence that constrains or encourages action" (657). While this model is a vast improvement over many culturalist models, it still focusses on national economic indicators, and a limited number of those<sup>2</sup>, it does not include the importance of differential relationships of wealth and power, and it does not include the importance of history at various levels in determining current conditions. While it has the advantage of not regarding local communities as isolated and autonomous, it does not deal with the enormous potential for intranational variability as part of participation in a global system.

The proposed research will approach variability in contraceptive use from a theoretical perspective that explicitly questions demographic models that oppose economics and culture. A number of demographically oriented anthropologists have proposed a more holistic approach to fertility in which "[t]he aim is not to decide which level is primary...[but] rather is to understand how a particular set of reproductive institutions and behaviors evolved and how its constitutive elements relate to each other" (Greenhalgh, 1995:13). Described as the political economy of fertility, this approach relies on more intensive and ethnographic studies that encompass a number of factors relevant to reproduction,

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<sup>2</sup> "We define level of development in terms of conventional socioeconomic indicators such as income, urbanization, literacy, life expectancy, and the like" (642).

including, but not limited to, intrahousehold resource distribution (Bledsoe, 1995; Hartmann and Boyce, 1983; Khan, 1992); power dimensions of decision making (Schneider and Schneider, 1995; Bledsoe, 1995) and the extent to which decisions are "couple" decisions (White, 1992:145); interhousehold power relations (Chen, 1993; Fricke, 1995; White, 1992); and both group and individual histories (Maloney, 1988). It is an approach that explicitly recognizes the "centrality of power in reproductive life" (Greenhalgh 1995:260) and the inequity in its distribution. It is, as such, an excellent way to examine variability since, instead of viewing society "as an unproblematic, unitary totality" (Mann 1986:3), it recognizes that individuals occupy different positions in a hierarchy of wealth and power<sup>3</sup>, that their actions proceed from those positions, and that in order to understand actual behavior, anthropologists "need to integrate culture and values with the material conditions in which individuals pursue their strategies" (Fricke, 1997:264). A political economy of fertility emphasizes both systems of meaning and value and "the context of interpersonal relations within which individuals are concretely located" (ibid:261). Recognizing the past and present interconnectedness of societies, contextualization of reproduction also entails attention to "the conjuncture of historically developed local, regional, national, and global processes" (Greenhalgh, 1995:13).

### **Fertility Change in Bangladesh**

Currently dominant explanations of fertility decline in Bangladesh, which can be labeled as "economic" vs "culturalist," represent contrasting demographic theoretical approaches to fertility transitions in that they claim causal primacy for either economic or "cultural"<sup>4</sup> factors. The Bangladeshi experience does not fit a model that sees modernization and economic development as prerequisite factors in fertility decline. Indeed, ICDDR,B's highly effective family planning program in Matlab was designed specifically to test the hypothesis that such programs could succeed in settings "where socioeconomic conditions were not conducive to a decrease in fertility" (Faveau and Chakraborty, 1994: 90), that is, in areas in which modernization and economic development had not occurred. An argument has been made, however, that economic factors of a different sort have created the demand for and acceptance of contraception that has produced the subsequent fertility decline. Freedman and Freedman (1986) posit that in Bangladesh, generally, and particularly in areas such as the Matlab Treatment Area, the availability of contraceptives has crystallized latent demand for smaller families. In brief, availability makes it possible for people to act upon a desire to limit their fertility, and that desire is motivated by economic considerations, by what they refer to as "dire poverty" (ibid:2) among people described as "desperately poor" (ibid:9). Proponents of both the economic and culturalist models acknowledge the relevance of demand and, importantly, both characterize it as "fragile". A major difference lies in what they propose as creating that demand. Since attempts to encourage family planning began as early as 1953, before Bangladesh's independence from Pakistan, an obvious question arises as to why these earlier programs did not evoke similar positive response. The Freedmans posit a growth in demand based on the increases in poverty and landlessness that have, in effect, tipped the balance in cost-benefit ratios such that large families now represent a luxury that the poor cannot afford. It is important to note that this economic explanation differs from those such as Caldwell's (1980) or Becker's (1960) in which what might be termed "top end" costs, such as education or consumer goods, increase absolutely or, without a corresponding increase in income, relatively. In these models, parents' decisions to limit fertility may be seen as choices for quality rather than quantity. Conversely, in the Freedmans' argument the focus is on what might be termed "bottom end" costs, needs as basic as food, and these costs increase not necessarily absolutely (although that is possible) but, rather, relatively, because of decreasing resources. It is this relative increase in costs of basic needs that parents see themselves as unable to meet for large numbers of children.

This argument does not address either the value of children's labor or the utility of children as old-age security, but certain conditions affecting those variables follow from growing impoverishment. Despite the variety of possible land-use arrangements in Bangladesh, a predominantly rural and agricultural nation, actual land ownership has been a useful if rough indicator of economic well-being (van Schendel, 1981:83). Between 1960 and 1985, rural landlessness increased dramatically, from a total of 1.5 to 7.75 million landless households, and the percentage of rural families considered functionally landless, i.e., with 0.5 acres or less, grew from 35 in 1960 to 50 in 1978 (Hossain, 1987:25). The increase in landlessness has resulted from a combination of population growth, land loss through natural disaster, and land transfers that

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<sup>3</sup> Wealth and power are often so closely connected that it is difficult to consider them separately. Power may, of course, be based on non-material resources, such as ritual purity, but, except in cases where the two are considered antithetical, power and wealth usually reinforce each other. A useful definition of power that attempts to deal with this problem is that of Michael Mann (1986:2): "the capacity to organize and control people, materials, and territories, and the development of this capacity throughout history."

<sup>4</sup> I resort to the use of "cultural" and culturalist because this model in Bangladesh, as espoused by Cleland et al. (1994), uses what is, at best, an incomplete and, at worst, a dismissive definition of culture that confines it to "attitudes."

have sharply distinguished the landless poor from what have been termed "middle peasants" and large landholders (Hossain, 1987:24) or what White (1992) has referred to as the distinction between *chotolok* (little people) and *borolok* (big people). The relative returns of agriculture and dealing in land, e.g., letting land to sharecroppers or tenants, make the latter a more profitable use of land. Because large landholders therefore opt to specialize in land dealing, even they do not provide agricultural opportunities for the landless poor. Consequently, the increase in landlessness has not been offset by increases in reliable agricultural employment, and landless farmers are forced into service or artisanal employment. At the same time, the decline in income for rural farming creates limited markets for such goods and services, and people thus employed are seriously underemployed (Hossain, 1987:22-24). Landless households cannot benefit from the labor of children on family farms, and the saturation of the agricultural labor market and the underemployment of non-agricultural workers in rural areas suggest that adults, not children, will benefit from the few employment opportunities available.

With respect to children's value as old-age support, telling evidence comes from Duza and Nag's research in Matlab. Citing focus group sessions which they argue "did not support the 'poverty-driven' family planning scenario of Freedman and Freedman," the authors discuss parents' views on "the notion that male children provide a form of old-age security" (Duza and Nag, 1993:73). Pointing to increasing scarcity of resources, including land, they summarize three reasons why parents now see sons as a less reliable source of support. While one reason has to do with perceived changes in marital relations such that sons are influenced more by wives than by parents, the other two refer directly to conditions of economic deterioration in which adult children are seen as incapable of supporting themselves because of scarcity of land or employment, and therefore incapable of supporting parents, either because of their limited income or their need to migrate for employment. Despite the authors' assertions, this would seem to support the claim that economic deterioration is an important factor in fertility decline.

The culturalist model for fertility decline (Cleland et al., 1994:131) specifically discounts the explanatory value of the poverty-driven model, arguing that since macro-level data indicate that fertility decline has occurred at the same time and to the same extent across socioeconomic levels, economic factors cannot be of primary importance. Bangladeshi fertility decline is explained thusly: "The crucial change that has taken place concerns acceptability of and access to birth control and not structural change that has driven down the demand for children" (Cleland et al., 1994:133). As do the Freedmans, these authors agree that there is a demand for smaller families, but they differ in terms of what drives that demand. Proponents of the culturalist argument posit that Bangladesh was never a strongly pronatalist society (Shah and Cleland, 1993) and suggest that large latent demand for fewer children may originally have been spurred by declines in mortality. In this model the difference in the success of early family planning efforts and more recent programs hinges not on poverty-led increases in demand, but on early program inadequacies. The current emphasis in Bangladesh on contraceptive supply, i.e., the availability of contraception, permits people to act upon desires for smaller family size, as it does in the Freedmans' model, but it is "culture," and not economic forces, that promotes greater contraceptive use. "Culture," in this position, is defined as "attitudes" and the significant attitudes are those that specifically apply to approval or disapproval of contraception and to ideal family size. In summary, Bangladeshi couples have always, or at least since 1960, wanted to limit family size, but have not, until recently, found culturally acceptable means to do so because of "culturally conservative" attitudes. Those attitudes are now presumed to have become more "liberal," with the result that contraceptive use has increased, although the question of how or why attitudes become "less conservative" is an important one that is not particularly well addressed in these arguments. Research in Matlab, for example, has tended to emphasize the question of acceptability itself, rather than why or how a previously unacceptable phenomenon becomes culturally acceptable, and why it becomes acceptable for a particular subgroup of a population and not for others.

Both the economic and culturalist approaches address potentially important elements in an understanding of variability in contraceptive use in Matlab. Clearly, people's material and non-material constraints and opportunities affect their decisions. Where both approaches fail is in their determination to assign causal primacy to either material or non-material factors each of which they assume to operate in isolation from the other, and in the resultingly narrow view of human activity and motivation. Additionally, they fail to deal with the crucial question of variability. If generalized deterioration of the economy drives contraceptive use, why do some couples choose not to contracept? Similarly, if change in "attitudes" drives contraception, why have attitudes changed among some but not all segments of the population, i.e., again, why do some couples choose to contracept and others not to? A political economy approach deals explicitly with variability in that it posits that individuals within any population occupy different positions within the hierarchy of wealth and power, and that their behavior will be strongly influenced by those different positions. This is a particularly heuristic approach for Bangladesh since hierarchy is a crucial concept in social relations in Bangladeshi society and affects all areas of life, including reproduction. Such an approach also requires consideration of the *multiple* positions any individual occupies within a number of simultaneous and interacting hierarchies. An individual's access to social, cultural and material resources is largely

determined by three attributes: age, class, and gender. Although there is room for individual variation, generally, age supersedes youth, rich supersedes poor, and male supersedes female. It follows that to speak of the position of generalized women or men is impossible; individual women and men may find themselves located very differently in the various hierarchies. Thus a poor young man, while he is clearly subordinate in both the class and age hierarchies, enjoys a privileged position in respect to gender. Similarly, an elder rich woman finds herself superior to such a man in class and age, but inferior in terms of gender. Using a political economy approach, we can look at individuals whose behavior in a particular arena (reproduction) is different and determine if that reproductive behavior can be explained and predicted by other variables that may differ among individuals, e.g., different positions within relevant hierarchies. Because these positions are not unitary, it is necessary to use a multi-level analysis that can consider positions within marital dyads, families and households. It should also be possible to determine if some variables are more important than others in explaining reproductive differences.

A further strength of this model of fertility in Bangladesh is its understanding of gender. Standard demographic models have often reduced gender to biological sex and to the collection of data on variables such as education, income, etc., by sex. This has resulted in what Nancy Riley has described as plentiful research on women, but considerably less attention to gender (Riley 1997:116). She goes on to say

The distinction between women and gender is important; gender is more than an individual attribute, more than a question of whether a person is male or female. Its more pervasive and important effect is at the societal level. Gender influences the way societies are organized, and it is part of all social institutions in any society--part of the economy, part of the institution of the family, part of the state...Attention to gender requires attention to the social and cultural context of fertility and other demographic behaviors...without that context, the meaning of fertility or the reasons for fertility change are difficult to discern.

In Bangladesh, age, class and gender hierarchies coexist but the first two are essentially different from the third in that positions within these hierarchies are not immutable, and an individual's position can improve. The young, if they survive, will become old, and the poor can become rich, or at least less poor. While the latter move is certainly not inevitable, as is aging, or even easy, it is at least theoretically possible. But women can never become men and so, can never improve their position in a gender hierarchy<sup>5</sup>. A woman's constraints and opportunities are created and reenforced by both kinship and marriage arrangements. Kinship is based on patrilineal principles, marriages are arranged and require dowry, and postmarital residence is virilocal, with the result that wives produce members for but are not themselves members of the localized patrilineal group into which they marry. Male children are preferred over female and one of a woman's most important roles within the family is producing sons. The birth of sons, indeed, improves a woman's position within the kin group and sons provide her one of the few avenues through which she may be able to pursue her own interests. Sons are valued as perpetuators of the lineage, as repositories of social prestige, as financial and political supports for their parents. Sons are especially important for women, since, in consolidating their position within the family, they provide their mothers some security against divorce. Sons are also expected to provide support for their mothers in the event of divorce or widowhood, the devastating effects of which arise from the gendered institution that most seriously affects women's lives, their seclusion under the rules of *pardah*.

*Purdah* ("veil" or "curtain") enjoins the seclusion of women and prohibits their interaction with unrelated males and is directly related to the meaning of female sexuality and the perceived need to protect women's chastity. Girls begin to be subject to rules of seclusion shortly before puberty. The ideal is for women to be confined to the *bari* (a homestead that encompasses a number of patrilineally related households or *ghor*) or to interconnecting homesteads, if they are joined by paths that enable women to travel without being seen by men. *Purdah* enables men to define the physical space in which women can operate, to control women's social interactions, access to local knowledge, to formal education, to political participation, and to economic opportunities beyond the household level. *Purdah* simultaneously creates and reenforces women's dependence on men, especially their economic dependence. Indeed, the ideal of men's and women's roles within the family reflects this dependence: men are responsible for supporting their families and can expect to receive in return deference and obedience from their wives. *Purdah* divides the world into male public space and female private space, and behavior into male initiative and female passivity. The degree to which a household is able to maintain its women in seclusion is an indicator of its respectability and is in large part dependent on its material resources. Recent increases in violation of

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<sup>5</sup> This difference between gender and other hierarchically relevant attributes is eloquently addressed by Molyneux (1977) in her criticism of marxist anthropology in Africa.



*pardah* have been connected to increasing immiseration that requires women to engage in outside labor. Clearly, variability in the ability to conform to the rules of *pardah* and in the evaluation of the cultural principles that create and are recreated by *pardah* can seriously affect reproductive outcomes. (This brief summary is based on the work of Abecassis, 1990; Abdullah and Zeidenstein, 1982; Aziz and Maloney, 1986; Cain, 1977, 1983, 1984, 1988, 1991; Chaudury and Ahmed, 1981; Chen, 1993; Chen and Guznavi, 1980; Hartmann and Boyce, 1983; Kabeer, 1988, 1991; Khan, 1992; Lindenbaum, 1981; Maloney, 1988; Nath, 1981; White, 1992.)

Political economy's recognition that "historical processes are preeminently political and economic, reinforced through ideology" (Schneider 1995:3) will also provide a better understanding of changing fertility in Bangladesh. That recognition would necessarily recast views of the current problem of imbalance between population and resources. Where attention is conventionally focussed on people's inability or unwillingness to limit population to numbers that could be supported by the country's agrarian base, a political economy approach would include, in an understanding of the current situation, an exploration of why an industrial base is either absent or inadequate. That would require investigating the effects of British colonial policy that consciously demolished the prosperous East Bengal textile industry in order simultaneously to eliminate competition with and provide a market for British textiles. In destroying an industrial base, the policy also effected the relocation of urban textile workers and their greater direct reliance on an agricultural base, increasing the demands on rural resources. It would also point to the manipulation of agricultural production in East Bengal through both economic and ideological means to meet British needs. Thus, when Britain was able to import Russian hemp, product "purity" had been assured by labeling products "warranted free from Indian jute." When the Crimean War closed the Russian hemp trade to Britain, colonial policy encouraged production of jute and it became East Bengal's primary export. So important was this cash crop that land was removed from rice cultivation to meet the demand. The processing of jute took place, however, far from the local source, since factories were located in West Bengal as part of an overall process that assigned West Bengal, and especially Calcutta, to the position of internal core to East Bengal's periphery, a process that was to have further repercussions after Indian partition left Muslim East Bengal seriously lacking in industrial facilities and knowledge (Baxter 1997:37).

After partition assigned East and West Bengal to Pakistan and India, respectively, factories for jute processing were established in East Pakistan with investment from West Pakistan, the richer, more politically powerful, and more technologically skilled province. Management also came from Karachi and there was little advancement or training for East Pakistanis. Moreover, Muslim Bihari refugees from northern India, who spoke Urdu, which West Pakistan tried to impose as the national language despite Bengali resistance, were employed for skilled labor, further constraining opportunities for Bengalis in what was now their own country. Perhaps most importantly this expansion of the jute industry in East Pakistan occurred at a time when world demand for jute was declining because of newly available synthetics (Baxter 1997:67).

Bangladesh's distribution of land was also seriously affected by British colonial policy that forced revision of an existing prebendary system in ways that made it insensitive to fluctuations in production and increased the economic and political powers of the *zamindars* (tax collectors-landlords) in ways that still redound in village level patron-client relationships. More recently, such local level relations were affected by the 1947 partition of India when Hindus fled to India from what had become Muslim East Pakistan. Elite Hindus had dominated the landlord class and after their flight their landholdings were taken over by Muslim elites, many from Calcutta. Although an act of 1950 abolished the *zamindar* system and limited individual landholdings to about 33 acres, it is unclear to what extent new local elites continue to control land especially since the act spoke only to individual landholdings and not to aggregated household landholdings.

Clear evidence of the global nature of today's economy and of Bangladesh's participation in that economy comes from the movement of migrants to areas such as the Middle East, United States and Great Britain. Global demands for labor and subsequent migration have had serious effects in Bangladesh, but those effects vary by region, gender and class. Certain areas of the country, such as Sylhet in the northeast, have experienced major migrations, women have migrated primarily as wives and/or daughters of male migrants, and male migrants have tended to be either highly educated professionals or unskilled laborers. The consequences for those who remain in the home communities are consequently variable as well. In addition to the detailed ethnographic and survey research described below, this project will attempt to situate the Bangladeshi fertility decline within these larger historical processes.

### Research Goals

The proposed research has as its goals: 1) to test hypotheses concerning differences between contracepting and non-contracepting couples in Matlab; 2) to develop an instrument for measuring economic well-being that is more sensitive to local understandings of poverty and wealth, and that includes, in addition to material measures, people's perceptions of

resources; and 3) to produce an "anthropology of reproduction" that examines how fertility "...makes sense given the sociocultural and political economic context in which it is embedded" (Greenhalgh, 1995:17). Focussing on contrasts between couples who use modern methods of family planning and those who do not, the research will employ a combination of demographic and anthropological methods to generate both quantitative and qualitative data and to provide a more nuanced picture of reproductive choice.

### *Hypotheses*

*Hypothesis 1: Contracepting couples have lower levels of cultural, social, and material resources than non-contracepting couples.* Couples whose level of material resources is low, find themselves unable to meet the costs of large families, either because those costs have risen absolutely, because of new expectations, or relatively, because of increasing immiseration. Additionally, changes in the contribution children can make to family resources increase their cost. Couples who have low levels of social and cultural resources have fewer alternatives for the support of children (e.g., fostering). Presented with methods of limiting family size, they are more likely to use them.

*Hypothesis 2: Contracepting couples are less likely than non-contracepting couples to maintain purdah.* Maintaining *purdah* requires foregoing women's potential extra-domestic economic activity. Couples with low levels of resources are more likely to release women from seclusion to exploit extra-domestic possibilities such as work for food programs and wage labor. Women's absence from home in these activities, combined with low levels of social resources, makes small families desirable. Presented with methods of limiting family size, they are more likely to use them.

*Hypothesis 3: Contracepting couples have more egalitarian gender relations than non-contracepting couples.* Couples with lower levels of social resources are less likely to live in extended family households. Husbands in nuclear family households are more influenced by their wives than by their patrilineal relatives. Inability to maintain *purdah* undermines the inevitability of men's and women's roles and the "naturalness" of assigned female characteristics such as passivity and dependence. Contraception changes the locus of control of women's reproduction and sexuality and is more likely to be adopted by couples who have already experienced a reality that leads them to a reevaluation of gender ideology and gendered relations.

*Hypothesis 4: Contracepting couples' expectations of intergenerational obligations are more limited and uncertain than those of non-contracepting couples.* Changing economic conditions make it more difficult for couples with lower levels of resources to contribute either to their parents' or to their children's welfare. Indeed, choices forced upon adult children about where to invest their limited resources may require them to decrease support for both older and younger generations. Additionally, adults with fewer resources, unless they have experienced major reversals, will have experienced levels of support from their own parents that are lower than those experienced by children of parents with higher levels of resources.

*Hypothesis 5: Contracepting couples' evaluation of the morality of contraception is more situational (i.e., context dependent) than that of non-contracepting couples.* Because they have found themselves in situations in which they found contraception an acceptable strategy, contracepting couples are more likely to view contraception situationally, in terms of its outcomes in differing contexts, rather than to evaluate it in terms of ideals.

### **Study Site**

The research will be conducted in Matlab *thana*<sup>6</sup> (an administrative unit approximating a U.S. county), located approximately 30 miles southeast of the capital city, Dhaka, on the Padma-Meghna floodplain. The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) operates a Maternal and Child Health-Family Planning and Health Services Project (MCH-FP) in Matlab and distinguishes a treatment area, in which the ICDDR,B program is in effect, and a comparison area, in which standard government-sponsored family planning programs operate. The research will be confined to the treatment area in which approximately 100,000 people live. As a result of the successful family planning

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<sup>6</sup> There is some question as to the appropriate term for these divisions. Thanas became upazillas under the Ershad government; the Kaleda Zia regime abolished this system but did not provide a replacement.

program in this area, the contraceptive prevalence rate<sup>7</sup> has risen from 4.7 percent in 1975 to 60 percent in 1990 (Fauveau, 1994:94-95). The Matlab treatment area includes approximately 24,000 women of reproductive age and thus provides large target populations of both contraceptors and non-contraceptors. Moreover, the system of delivery for contraceptives, in which local female community health workers (CHWs) visit village women in their homes every other week, provides equal and easy access for all village women, thereby eliminating an important potential confounding variable. Matlab also has "the largest continuously operating population surveillance system in the world" (Aziz and Mosely, 1994:29), established in 1963. The Demographic Surveillance System (DSS) registers all births, marriages, deaths, migration (in and out) and internal movements of the population, and consequently provides excellent village level demographic data. This comprehensive, well-validated, and regularly updated sample frame should considerably expedite the research. Finally, in terms of economic development, education, female participation in wage labor, and other factors often described as important in determining acceptance of family planning, the area is representative of conditions in the rest of rural Bangladesh (DeGraff, 1991:66; Koenig et al., 1992:357). It has also been described as typical in its "cultural conservatism" (Aziz, 1994:275). However, one aspect in which the treatment area is not representative, equal and easy access to contraceptives, makes it an ideal location for this research in that it presents a "natural experiment" in which the confounding effects of availability are, in effect, "controlled."

## Methods

### Data Collection

This project will involve two distinct (and partially overlapping) phases: 1) a period of intensive ethnographic fieldwork, intended both to help construct culturally valid survey instruments and to explore various aspects of cultural and historical context, and 2) a large-scale formal survey designed to test a model of contraceptive adoption that embodies the hypotheses listed above.

### *Ethnographic data*

The principal investigator will conduct field work as a resident of the village of Char Nayergaon for eleven months, February through December, 1998. Data collection during this period will provide the critical ethnographic context that will guide the development of survey instruments and aid in the interpretation of survey results. Moreover, long-term residence and daily interaction will provide information on topics not always amenable to survey research. For example, information about contraceptive use or non-use as resistance to or compliance with the goals of elites is not likely to be forthcoming in the survey environment. These are questions whose consideration requires funds of trust and rapport not likely to be created by the best interviewer in a survey situation. Moreover, this information is unlikely to emerge as a result of direct questions, but rather in informal conversations or in narratives of personal and local history. Greenhalgh (1994) has pointed out both the complex nature of such sensitive investigation in general, but more importantly, the difficulties connected to a researcher's identification with regional or national power elites. The P.I.'s connection with ICDDR,B may well make it impossible to discuss these questions, but it is only in the context of long-term residence and ethnographic research that any possibility for this exploration exists.

Throughout the field period, the P.I. will conduct in-depth semi-structured interviews, and life history interviews, will elicit narratives of local and regional history, and will record behavior. Semi-structured interviews will include questions designed to initiate discussion of topics including gendered relations and evaluations, hierarchical relations in general and within the village, the effects of national economic crises, and the morality of contraception. These interviews will also explore the factors that go into fertility decisions, the people who affect and are affected by them, the degree to which these decisions are tacit or expressed, how partners evaluate each other's position, and the extent to which each partner perceives the decision as joint or unilateral. For life history interviews, each informant will be encouraged to reflect on the course of her or his life, beginning with earliest memories. To provide some comparability among narratives, some questions will be posed concerning the availability of resources and adherence to and evaluation of cultural norms over the course of people's lives. Informants will also be encouraged to discuss what they see as formative events in their lives and how they affected their future attitudes and behaviors, as well as commonly experienced events (e.g., Partition, the War of Independence, land reform legislation, recurring food shortages and natural disasters, continued political instability) and their local effects.

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<sup>7</sup> Contraceptive prevalence rate (CPR) is defined as the ratio of couples using contraception to the number of reproductive age couples in the population.

Additionally, all adults will be invited to participate in a free listing exercise in which they will be asked to list terms related to a number of concepts including poverty, wealth, a respectable family, a good woman, a good man, and the advantages and disadvantages of children. Free listing results can be used as a validity check for interview questions and may provide useful revisions for the final version of the questionnaire. Additionally, free list results can suggest initial coding categories for text analysis of more intensive open-ended interviews and life histories. Residents will also be asked to locate their households on a linear scale with end points of poorest and wealthiest households. They will then be asked to explain why they chose a particular location, i.e., what characteristics of the household led them to that placement. Respondents will be asked to repeat this exercise for childhood households and to project a location for their household at a future date. Additionally, they will be asked to evaluate another village household on that scale, and describe the characteristics that lead to the evaluation. This will produce both internal and external views of a household's resources and provide a fund of locally valid measurements of wealth. (These tasks will also be part of the small pretest, which should provide additional validity checks).

Interviews and life histories will include contracepting and non-contracepting couples, as well as other village residents of different ages and economic backgrounds. The proposed site for this phase of the project, Char Nayergaon, is the smallest of the treatment area villages with a population of 173 (ICDDR,B, 1996: 81). The small size of the village presents both advantages and potential problems. A smaller village site allows for the more intimate knowledge of and interaction with residents from which much of the value of ethnographic work derives. At the same time, since the average size of villages in this area is 1100 people (Fauveau, 1994:14), the small size may, in itself, mean that the village is not representative. Much of the month of January will be spent determining if Char Nayergaon deviates in significant ways (e.g., the relative numbers of landless peasants and landlords, the age structure of resident population, the presence of development projects, etc.) from the majority of villages in the area, so that any major bias it represents should become apparent. If this village proves to be atypical, another, more representative village will be selected.

All interviews will be conducted in Bangla. Semi-structured interviews will begin with women, which will permit the presence of a female interpreter, who may still be needed at the beginning of this phase<sup>8</sup>.

#### *Survey data*

In order to gain an understanding of the larger study area and to test the hypotheses enumerated above, data will be collected in formal interviews with 900 women and 900 men in ten villages, from June, 1998 through December, 1998. The interviews will be conducted in Bangla by local Bangladeshi assistants recruited through ICDDR,B, which has standard procedures for recruitment that insure high quality field workers. Given the constraints on cross-gender interaction in rural Bangladesh, an equal number of male and female interviewers will be hired. Interview schedules will be translated from English to Bangla and independently back translated to identify any errors or ambiguities. Interviewers will undergo a two week training period and will conduct pretest interviews before the final version of the questionnaire is produced. Interviews will include both closed and open-ended questions. The principal investigator will visit all sample villages in advance of the survey to discuss the research with residents and will accompany interviewers during their initial visits and subsequently on a random basis. Interviewers will also attend a weekly meeting with the P.I. to discuss the progress of the survey and any problems that may arise. The P.I. will read completed interviews at the end of each day to identify missing or inconsistent data and schedule rapid follow-up.

#### **Measurement**

##### *Resources*

Fertility research in Bangladesh has employed a number of indicators of economic well-being, emphasizing house type, land ownership, income, education, occupation, and inventories of material goods. While these may be valid indicators they may also miss important social and cultural resources and may be insensitive to measures that are locally important such as remittances from migrants, other access to land, spatial distribution of land (aggregated or dispersed plots), methods of acquiring land, disbursement of land at death, position in patron-client relationships, political and religious offices, household type (nuclear or extended family), ratio of producers and dependents within households, or to other locally relevant variables.

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<sup>8</sup>The P.I. has studied Bangla formally in both the United States and Bangladesh, and continues to work with a local tutor. However, since the Bangla spoken in Matlab is a dialect variant of standard Bangla, the earlier stages of the project will require a translator who is familiar with both standard and Matlab Bangla.

They may also miss important local understandings of wealth and poverty. Particularly, they do not address the subjective assessment of resources which may focus on social and cultural resources. In an attempt to explain continuing high fertility in sub-Saharan Africa despite the apparent absence of resources to support larger families, Draper (1989) pointed to the importance of perceptions of resources that may or may not coincide with standard material measures, and to the effect that life histories have on such perceptions. The proposed research will develop a more locally valid and sensitive instrument for assessing resources that uses, in addition to standard indicators whose validity has been determined by ethnographic investigation, other valid measures that reflect local definitions of wealth and poverty and that include individuals' perceptions of levels of resources and the underlying logic of those perceptions.

#### *Purdah*

Female seclusion can be measured by the number and type of extra-household activities a woman is engaged in, including labor outside the *bari*, participation in larger social networks, education, membership in development projects, attendance at health facilities. Measures of adherence to *purdah* will include these activities, but, as with wealth indicators, special effort will be made to determine which activities are locally identified as most crucial, and to determine the validity of preselected indicators.

#### *Gender Relations*

These measures will include both relations between spouses and parents' relations with and expectations for children. For spouses, measures will include mutuality of decision making in different arenas<sup>9</sup>, gendered specialization in tasks and responsibilities, expectations about gendered participation in political, religious and economic activity, definition of material resources as joint or individual, control of distribution of such resources. For parent-child relations, measures will include behavioral models for sons and daughters, preferences for gender in family composition, assignment of tasks by gender, expectations for the futures of sons and daughters, evaluations of appropriate behavior for sons and daughters. Both observation and discussion within the ethnographic framework will also be used to validate and refine these measures.

#### *Intergenerational Relations*

Measures of the limits and certainty of expectations about intergenerational obligations will include respondents' own experience of these obligations, respondents' assessment of the personal and temporal scope (who will be affected and over what period of time) of contraceptive decisions, assessment of what parents should be expected to provide for their children and over what period of time they should provide for them, assessments of what children should be expected to provide for parents and over what period of time they should provide for them, and assessments of parents' and children's abilities to fulfill these expectations.

#### *Situational Morality of Contraception*

Situational evaluation of the morality, i.e., the "goodness" or cultural legitimacy, of contraception will be measured using a series of situations for each of which respondents will determine the acceptability of contraception. For example, participants will be asked if they find contraception legitimate in a situation in which the birth of a child will endanger a mother's health, in which the birth of a child will prevent or curtail the education of a living child, in which the birth of a child will prohibit a mother's education, etc. Subsequently, respondents will be asked to predict their own course of action if presented with these situations. Ethnographic investigation should provide culture-specific situations to be included in this measurement. This measure may also provide the cultural limits of the morality of contraception, i.e., the situations in which no one can evaluate contraception as legitimate, and the situations in which there is consensus as to its legitimacy.

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<sup>9</sup> It is notoriously difficult to determine if decisions that affect couples are joint or unilateral decisions. One advantage of the statistical model for this project is that it permits examination of individual and couple characteristics. In cases of intra-couple heterogeneity, e.g., high educational level for one spouse, low educational level for the other, we can compare the characteristics of each spouse with those of more homogeneous couples who have made the same contraceptive decision, to determine which spouse's characteristics are more similar to those of the homogeneous couple. While this is not an answer to the question of joint or individual decision making it does provide some insight into which spouse's profile seems more important in the decision.

## **Sampling Strategy**

### *Ethnographic Sample*

The sample for in-depth semi-structured interviews within Char Nayergaon will include individuals of both reproductive and post-reproductive ages, to provide generational contrast, and individuals with differing levels of resources. Within the reproductive age category, four couples (two contracepting, two non-contracepting) will be randomly selected from all couples in the village in each of five age categories (20-24; 25-29; 30-34; 35-39; 40-44) for a total sample of forty individuals, comprising ten contracepting and ten non-contracepting couples. Selection criteria for couples will be the same as for the survey sample. Ten post-reproductive age residents, five females and five males, will also be randomly selected for interviews; the smaller sample reflects the smaller numbers of individuals expected in these categories and the research's focus on currently reproductive age couples.

Life histories will be collected from twenty individuals, ten males and ten females, in five age categories (20-29; 30-39; 40-45; 50-59; 60+). Within the three age categories below 50, both contraceptors and non-contraceptors will be included in equal numbers. Selection of subjects in each age category for life histories will not be random, since the interest, ability, and willingness of informants is crucial to this endeavor.

### *Survey Sample*

The large-scale survey sample will be drawn from the listing of village members maintained by the ICDDR,B. This sample frame is comprehensive and well-validated, and is regularly updated for births, deaths, marriages, and other demographic events. Indeed, the existence of such a sample frame for all villages in the Matlab study area is a major advantage of working there.

Using information in the ICDDR,B data base a sample of 450 married couples who are users of contraceptives will be drawn at random from the sample frame (see below for a justification of this sample size). The selection criteria for these couples are as follows: (1) they are Muslim, (2) they cohabit on a regular basis, (3) they currently use or have ever used a modern method of contraception (injections, oral contraceptives, IUDs, barrier methods, or tubal ligation), (4) the wife is currently between the ages of 20 and 45 years, and (5) the couple has at least one living child. The exclusion of couples with no living children is necessary because contraception in Bangladesh is not used primarily for delaying the onset of reproduction. The justification for exclusion of non-Muslim couples is two-fold: (1) the population of Matlab is approximately 88% Muslim, with remaining 12% almost entirely Hindu (Fauveau, 1994:14); (2) restricting the sample to Muslims avoids the possible confounding effect of religion.

A parallel sample of 450 married couples who have never used modern methods of contraception will be matched to the contracepting couples for wife's age. (These couples must also be regularly cohabiting). Age matching will be done within five-year intervals. If appropriate matches cannot be identified for a particular contracepting couple, that couple will be discarded from the sample and another drawn at random. Given the rapidly attenuating age structure of this population, this matching scheme will tend to bias the sample slightly toward younger age groups with more members; but since the goal of the research is not to characterize the population as a whole but only to examine the differences between couples who contracept and those who do not, this bias will not affect the results.

## **Statistical Analysis**

### *Ethnographic Data*

Free listing data will be disaggregated by contraceptive status, providing two data sets that can then be compared for saliency and frequency of items. Multidimensional scaling of the two data sets will allow us to make inferences and formulate hypotheses about differences in underlying dimensions, "...the item attributes that seem to order the items in the map along a continuum" (Borgatti, 1992:31). The resulting hypotheses can then be tested, using property fitting techniques. Data involving informant evaluation will be submitted to consensus analysis (Weller and Romney, 1988:73-78). An underlying assumption of consensus analysis is the existence of "correct" answers that imply one culture, or the absence of systematically different views. It is possible to determine whether the assumption holds in any given case, i.e., whether there is agreement among respondents as to the "correct" answer, and, thereby, to determine if systematically different views do characterize different segments of the population, e.g., contraceptors and non-contraceptors. Anthropac (Borgatti, 1994) software, which will perform these analyses, is available within the department and will be installed on the P.I.'s laptop computer for use in the field.

Life history interviews and semi-structured interviews will be subjected to thematic analysis to identify similarities and dissimilarities in content within and across groups defined by contraceptive status, gender, and life stage, and to identify what Luborsky (1994: 196) refers to as "...those statements that are marked in some way as being of great meaning to a person(s)." All interviews will be examined for recurring themes, events, and categories. By examining the texts produced by individuals we should be able to determine similarities and dissimilarities within and across groups in terms of what factors are considered in the decision making process, which people (in terms of relationships) are identified as part of the process, how individuals understand their partners' positions, perception of the decision making process as tacit or explicit, unilateral or joint. Life history narratives should enable us to identify crucial life events, economic histories, and cultural evaluations over lifetimes, and compare them within and across categories of individuals to determine if a particular life course scenario is more likely to produce a particular contraceptive status.

### *Survey Data*

The large-scale survey data are quasi-longitudinal. That is, the main outcome variable will be an individual woman's history of contraception use (never used, previously used but terminated, currently using) assessed at a single period, the time of the formal interview. An ancillary outcome variable, also elicited at the time of interview, will be whether the first use of contraception was intended to space births or to end reproduction altogether. The goal of the analysis is to learn how the predictor variables enumerated above affect the rates at which married women enter the states defined by the intersection of these two outcome variables. Since the sex composition of offspring has been shown to be a major determinant of contraceptive use in Bangladesh (Rahman et al., 1992), the numbers of living male children and female children are important in the analysis as control variables. It was decided not to match couples on the basis of the number and sex composition of offspring because to do so would severely restrict the pool of potential matches. Instead, these variables will be built into the 'clock' measuring time since marriage (see Appendix below).

From one perspective the data for these analyses are cross-sectional; that is, they relate to a woman's current status at the time of interview. It is clear, however, that the cross-section is actually generated by a prospective process of contraceptive adoption, one that is inherently dynamic in nature. Thus, a woman who has not used effective contraceptives by the time of interview may still do so in the future, and if she does her characteristics will presumably differ from those of a woman who *never* adopts contraceptives throughout her entire life time. In other words, the data are inherently right-censored. Because they cannot deal with right-censored observations, traditional regression methods for binary outcomes (e.g. logistic analysis) are inappropriate and will lead to biased estimates of covariate effects. Recently, it has been shown that, under fairly general conditions, such cross-sectional response data can be analyzed by survival analysis or event-history analysis by drawing on the results of the theory of stationary renewal processes (Wood et al., 1992). In these analyses, the basic time variable is the time from the date of marriage (available in the ICDDR,B data base) to the date of interview. The likelihood of an observation on a woman who has never used effective methods is the survival function for the underlying prospective process; that for each type of contracepting woman (currently using versus previously used, used for spacing versus stopping) is the associated cumulative hazard rate (Wood et al., 1992; Holman, 1996). Although this is not a conventional logistic regression analysis, covariates effects will be entered as logistic functions, making the results structurally equivalent to logistic regression but unbiased by right-censoring.

To implement this framework, we need a parametric survival model for the underlying process of contraceptive adoption. The appendix to this proposal provides a detailed description of the model. According to the model, there is a latent group of women who will never adopt modern methods of contraception. For women who have some non-zero probability of adopting such methods before the wife reaches age 45, the hazard function will be assumed to be geometric conditional on the woman's age, number of living children, sex composition of offspring, whether adoption is for spacing or stopping, and her relative position on a latent distribution of unmeasured heterogeneity (i.e. heterogeneity arising from variables not explicitly included as measured covariates). In this study, age will be controlled by matching. Number of living children and sex composition will be handled simultaneously by classifying women according to their specific history of childbearing (e.g., one daughter, then one daughter and one son, then two daughters and one son, etc.). In effect, this treatment allows number of living children and sex composition to be time-varying covariates, which is the most natural way to model their effects on the probability of adopting contraceptives. Unmeasured heterogeneity affecting the hazard function will be modeled as a gamma random variable. The model will also include a transition from previously used for spacing to no longer used, and the effects of the covariates on that transition will be examined. Women who adopt contraceptives for stopping purposes can also terminate use, of course, but presumably do so for very different reasons such as age, health, or negative experience with some method. Since these processes are not of central importance to the proposed research, that particular transition will not be examined.

The main goal of this phase of the research is to determine how covariates affect this basic model of contraceptive adoption. Covariate effects can be modeled in a variety of ways. This research will use a logistic specification because of its flexibility and ease of estimation. Covariates will be allowed to affect two separate geometric hazard functions for spacing and stopping behavior, the ultimate fraction of women who ever adopt, and the termination of use by women who adopt for spacing purposes. In addition, the model will allow us to use data on women who are either currently using contraceptives or used them in the past, while allowing for possible differences between these two groups. Finally, the covariate effects will be explicitly multi-level, distinguishing the woman's characteristics from those of her husband, the couple considered as a unit, and the household in which the couple resides. This framework will allow testing of all the hypotheses described above.

This type of model specification has been shown to be both general and powerful in a variety of demographic analyses (Maruani and Schwartz, 1983; Weinberg and Gladen, 1986; Wood et al., 1994; Holman, 1996). The model will be estimated by standard maximum likelihood methods. Special-purpose software for estimating such models is available within Penn State's Department of Anthropology, and has been thoroughly validated against simulated data (Holman, 1996). Dr. Darryl Holman (Population Research Institute, Penn State), the statistical demographer and computer scientist who developed the estimation methods and software, will be a consultant on this project. Dr. Holman has conducted research in Matlab and has worked extensively with ICDDR,B's data bases.

## **Sample Size**

### *Ethnographic Sample*

Sample size for the in-depth semi-structured interviews and life history interviews is a function of the P.I.'s period of residence in the village and the long time required for these intensive methods. In addition to actual elicitation time, there is the need to establish relations with informants that will permit and facilitate these methods. Although the sample of forty individuals (twenty couples) for semi-structured interviews and the sample of twenty individuals for life histories are admittedly small, they are, by the usual standards of such qualitative work, a large sample (McCracken, 1988:17).

### *Survey Sample*

Because formal methods for power calculations are poorly developed in survival analysis, it is not possible to arrive at a needed sample size for the proposed analyses of the survey data in any straightforward way. The most reliable guide to sample size in this situation is to examine previous analyses using similar models and estimation procedures to determine how large the required samples were. However, because the proposed analyses are innovative, few such analyses are available. The analyses of fecundability and sterility by Wood et al. (1994) obtained reliable results and small standard errors in samples as small as 91 couples. Weinberg and Gladen (1986) applied similar models to data on pregnancy loss in 654 women, and obtained extraordinarily small standard errors. In a later analysis, they applied the same methods to 221 women and again obtained reliable estimates (Weinberg et al., 1994). Holman (1996) successfully performed a similar analysis of 329 women. By these standards the proposed sample size of 900 couples would appear to be more than adequate.

The statistical power of a sample of 900, however, depends critically on the actual number of covariate effects to be estimated. This is especially the case for the proposed analyses, which require us to estimate first-order interactions as well as main effects. As explained above, it is difficult to determine the number of covariates that will be measured, since, to some extent, this number will be determined by the pretests performed in the field. As a reasonable estimate, something like fifty items will be included on the final interview schedule. However, principal coordinates analysis will be performed to identify composite variables that explain large fractions (>80%) of the variation in the raw data. By using this method of data reduction, it may be possible to reduce the number of predictor variables to no more than perhaps ten. For this number of covariates, a sample size of 900 should yield more than enough statistical power.

Partly offsetting the rather large number of covariate effects to be estimated, two features of the proposed study design should increase the power provided by a sample of 900 couples. First, several potential sources of variation will be controlled by the age-matching scheme and the way in which number and sex composition of living children are built into the time variable. Second, restriction of attention to a small number of villages will reduce the confounding effects of unobserved heterogeneity, which would otherwise greatly impair our ability to retrieve reliable parameter estimates from a sample of a given size.



## Relationship To Previous Research

### *P.I.'s Previous Research*

Although this project represents a major change of geographic and cultural area for the P.I. whose previous research has been in highland Papua New Guinea (PNG), it continues and builds upon her inquiry into questions concerning fertility in societies undergoing social and economic change (Wood et al. 1985; Johnson, 1990), the potential effects on fertility of changes in household structure and allocation of labor (Johnson, 1988; 1990), variability in economic and power relations within societies characterized as relatively culturally homogeneous, and the effects of position in a gender hierarchy on options available to individuals (Johnson 1981; 1988; 1990; 1993). The decision to shift the areal and cultural focus of that inquiry stems from a number of reasons, most importantly the more crucial nature of fertility questions in Bangladesh, and the growing difficulty, and indeed danger, associated with conducting research in PNG. During an aborted pilot project in 1991, it became clear that what amounts to civil war in PNG has had serious repercussions in a number of areas relevant to research: growing antagonism toward non-Papua New Guineans and, particularly, non-Papua New Guinean researchers, increasing frequency and seriousness of violence against women (a combination that makes the position of foreign female researchers particularly dangerous), and disintegration of whatever infrastructure existed in remote locations. Violent incidents created concern for the P.I.'s safety and that of students and local informants and inspired a search for another area of the world in which such research would be both possible and valuable. The shift to Bangladesh as a research locus has entailed a number of long-term retooling activities such as language learning, mastering a new literature, creating a graduate student group on Bangladeshi research, and a period in Bangladesh during which further language study was pursued, potential field sites were explored and connections with relevant research institutions were created. While these activities have been time and energy consuming they have put the P.I. and her students in an excellent position to conduct research in Bangladesh.

### *Previous Research in Matlab*

A number of studies in Matlab have focussed on increasing contraceptive use and the differences between contraceptors and non-contraceptors. The great majority of these studies, however, have contrasted the treatment and comparison areas (DeGraff, 1991; Khan, 1996; Khan et al. 1989; Koenig et al., 1992) and have concluded that the quality of outreach programs explains the disparity in contraceptive use between the two areas. Additionally, in research in two other areas of Bangladesh, Sirajganj and Abhoynagar, where ICDDR,B in collaboration with the Bangladesh Ministry of Health and Social Welfare, operates MCH-FP Extension projects, the importance of outreach is also confirmed (Hossain et al., 1996; Phillips et al., 1996). In a comparison of contracepting and non-contracepting women within the treatment area only, Rahman et al. (1992), observed that the sex composition of surviving children has "strong and highly significant effects on contraceptive use." In light of these findings, the proposed research is confined to the treatment area, where the outreach program provides easy and equal access to villagers; it also includes the number and sex of living children as control variables. The proposed research is unique in fertility study in Matlab in its combination of the intimate, intensive knowledge derived from long term ethnographic field work and the extensive and statistically representative data collected through large-scale surveys.

## APPENDIX A: Statistical Methods

Permission has been granted by the Program Officer for inclusion of this appendix.

The statistical methods for analyzing data on adoption of contraception were developed for this proposal by Drs. Darryl J. Holman and James W. Wood (Population Research Institute, Pennsylvania State University); Dr. Holman is a consultant on the project. The methods are based on a dynamic model that treats covariates as affecting a couple's probability of adopting effective methods of contraception after each live birth. Maximum likelihood methods will be used to estimate parameters of the model from data collected in the field.

The structure of the model is summarized in Figure A.1. Women are the units of analysis. Each woman is assumed not to be practicing contraception at the time of marriage. After that time she can progress to one of three states: using contraceptives for birth-spacing purposes, using for stopping (permanent termination of reproduction), and a state of "non-susceptibility" in which she will never adopt contraception at any time in the future. The probabilities of entry into these states, and the effects of observed covariates on those probabilities, are modeled separately for each state. In addition, women who are using for spacing purposes can terminate use, and covariate effects will be modeled on that transition as well.<sup>1</sup> In the model, some fraction  $s$  of the population is "susceptible" to using contraception, and a second fraction  $1 - s$  will never adopt contraception. This specification is necessary so that women who will never use contraception and whose observations are therefore right-censored at the time of interview do not bias the transition probabilities for states 2 and 3 upward. Note that the value of  $s$  is to be estimated from the data; the model does not require that individual women be classified by subgroup *a priori*.

An important feature of the model is that women (or couples) are assumed to make the decision to use or not to use contraception following each live birth. Both parity and the sex composition of children produced to date are expected to exert powerful influences on that decision. We have designed the analysis to correct automatically for any confounding effects of those influences. Although the probabilities of adopting contraception are conditioned on both parity and sex composition, for simplicity of presentation the following description will include parity only; it will also be restricted to the transition to use of contraception for spacing purposes (the extension to include sex composition and use for stopping is straightforward).

Under the model, the probability that a couple in the susceptible group begins contracepting for spacing purposes after their first birth is  $p_{121}$ . The probability of contracepting after the second birth is  $(1 - p_{121})p_{122}$ . After a third birth, the probability is  $(1 - p_{121})(1 - p_{122})p_{123}$ . In general, the probability of a couple contracepting after birth  $n$  is

$$p_{12n} \prod_{i=1}^{n-1} (1 - p_{12i})$$

This model is a geometric probability model. Under the model, the probability of a couple not having contracepted by the time of interview at parity  $n$  is

$$1 - \prod_{i=1}^n (1 - p_{12i})$$

Note that each parity-specific probability can be modeled as being affected by covariates. A logistic specification is used to model the effects of covariates on the parity-specific probabilities of using

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<sup>1</sup> Women who are using contraceptives to terminate reproduction can also stop using them, but they are assumed to do so for reasons (e.g., age, self-perception of infertility, health problems with some prior method of contraception) that are only weakly related to the covariate effects of interest. Thus, use for stopping and termination of such use are submerged into a single state.

contraception. Call  $x_k\beta$  an array of  $m$  covariates for the  $k$ th couple at parity  $i$ ;  $x_k\beta = \beta_0 + x_{1k}\beta_1 + x_{2k}\beta_2 + x_{3k}\beta_3 + \dots + x_{mk}\beta_m$ . The probability for the  $k$ th individual is  $p_{12i,k} = 1/[1 + \exp(x_k\beta)]$ .

Parameters will be estimated by maximum likelihood using standard numerical methods. Call  $\delta_k$  an indicator variable that is one if the  $k$ th couple has ever used contraceptives by the time of the interview and zero otherwise. Ignoring covariate effects, the likelihood for a sample of  $N$  such couples is

$$L = \prod_{k=1}^N \left\{ \left[ s p_{12w_k} \prod_{i=1}^{n_k-1} (1 - p_{12i}) \right]^{\delta_k} \left[ s \left( 1 - \prod_{i=1}^n (1 - p_{12i}) \right) + (1 - s) \right]^{1-\delta_k} \right\}$$

Estimation of the susceptible fraction does not require identification of specific susceptible couples, either by the researchers or by the subjects themselves. Rather, the fraction is estimated as a latent variable in the model. Even so, individual-level fixed covariates may be estimated on  $s$  using the logistic specification  $s = 1/[1 + \exp(x_k\beta_s)]$ .

Unmeasured sources of heterogeneity, both within and among couples, can be incorporated into the model as follows. (Only the among-couple heterogeneity will be illustrated here). Call  $g(z)$  the probability density function for the among-couple unmeasured heterogeneity. Each couple has some unknown value  $z$  that affects its probability of using contraception after each live birth. Redefine the array of covariates as  $p_{12i,k} = 1/[1 + \exp(x_k\beta + z)]$ . A gamma distribution with a mean of zero and a variance  $\sigma^2$  (to be estimated) is a reasonable specification for  $g(z)$ . The likelihood of the model given the observations is

$$L = \prod_{k=1}^N \int_{-\infty}^{\infty} g(z) \left\{ \left[ s p_{12w_k} \prod_{i=1}^{n_k-1} (1 - p_{12i}) \right]^{\delta_k} \left[ s \left( 1 - \prod_{i=1}^n (1 - p_{12i}) \right) + (1 - s) \right]^{1-\delta_k} \right\} dz$$

The fit of the model will be assessed by the method of martingale residuals (Wood et al., 1994).

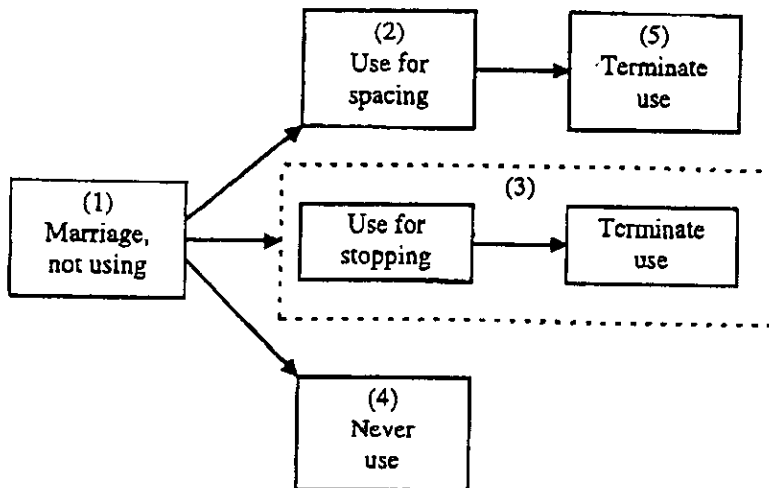


Fig. A.1. A multistate model for contraceptive adoption. The terms "use" and "using" refer to adoption of modern methods of contraception. Use of contraception for stopping purposes and termination of such use are submerged in a single state (broken lines).

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Patricia Lyons Johnson

"FERTILITY DECLINE IN BANGLADESH: explaining  
variability in contraceptive use"

Budget Proposal

Local Salaries: 6 interviewers @ \$170.00 per month, for 8 months	8160.00
1 project supervisor (\$660/mo. @ 30%, for 8 months)	1584.00
Transportation, Dhaka-Matlab and for interviewers within Matlab	600.00
Photocopying	100.00
Communications	200.00
Lodgings, Food, Principal Investigator	3000.00
<hr/>	
Total	13664.00

Salaries will not start until April; I will begin monthly payments to budget as of February.

Project duration: 10 months

Starting Date: February, 1998

Closing date: November, 1998

Name of Donor: American Institute of Bangladesh Studies

  
25/01/98  
**Shamima Moïn**  
**Controller, Budget & Costing**

INFORMED CONSENT FORM FOR BEHAVIORAL RESEARCH

THE PENNSYLVANIA STATE UNIVERSITY

Title of Project: Fertility Decline in Bangladesh: Explaining Variability in Contraceptive Use

Person in Charge: Patricia Johnson  
409 Carpenter Building  
Department of Anthropology  
The Pennsylvania State University  
University Park, PA 16802  
U.S.A.  
(814) 865-3129

1. This section provides an explanation of the study in which you will be participating.
  - A. The study in which you will be participating is part of research designed to explore differences between couples who choose to use modern contraception and couples who choose not to do so. We are interested in how the experiences and attitudes of these couples may differ.
  - B. If you agree to take part in the research you will be asked to participate in an interview during which you will be asked questions about your own experiences and attitudes. Your answers, together with those of approximately 1800 other individuals will be used to draw conclusions about how contracepting and non-contracepting couples may differ in experiences and attitudes.
  - C. Your participation in this research will take about 2 hours. The interviewer will schedule an appointment at your convenience.
  
2. This section describes your rights as a research participant.
  - A. You may ask questions about the research procedures, and these questions will be answered. If you still have further questions, they can be directed to Dr. Patricia Johnson, the principal investigator for this project.
  - B. Your participation in this research is confidential. Once the interview has been conducted, only the investigator and research assistants will be able to link your responses and your identity. After the interview, your responses will be identified by a number, not a name, and only the principal investigator will have access to the list of numbers and corresponding names. Interviewers are trained to respect and safeguard your confidentiality and should any results of interviews appear in publications, no personally identifying information will be disclosed.
  - C. Your participation is voluntary. You are free to stop participating in the research at any time, and to decline to answer any specific question, without penalty.
  - D. This study involves minimal risk; that is, it incurs no risks to your physical or mental health beyond those encountered in the normal course of everyday life.

3. This section indicates that you are giving your informed consent to participation in this research.

**Participant:**

I agree to participate in the investigation of differences in experiences and attitudes between couples who choose to use modern contraceptives and couples who choose not to use them. This research is part of the education and research program of the Pennsylvania State University.

I understand the information given to me, and I have received answers to any questions I may have had about the research procedure. I understand and agree to the conditions of the research as described.

To the best of my knowledge and belief, I have no physical or mental difficulties that would increase the risk to me of my participation in this study.

I understand that I will receive no compensation for participating.

I understand that my participation in this research is voluntary, and that I may withdraw from this study at any time by notifying the person in charge.

I am 18 years of age or older.

I understand that I will receive a signed copy of this consent form.

\_\_\_\_\_

signature

\_\_\_\_\_

date

**Researcher:**

I certify that the informed consent procedure has been followed, and that I have answered any questions from the participant above as fully as possible.

\_\_\_\_\_

signature

\_\_\_\_\_

date



RESPONDENT CODE:

                      
VILLAGE

                      
HOUSEHOLD

                      
INDIVIDUAL

FP USE STATUS:

- 1. CURRENT (GO TO PURPOSE)
- 2. FORMER (GO TO PURPOSE)
- 3. NEVER

FP USE PURPOSE:

- 1. SPACING
- 2. STOPPING

INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE				DAY _____
INTERVIEWER'S NAME				MONTH _____
RESULT*				YEAR 1998
NEXT VISIT DATE				TIME _____
TIME	_____	_____	_____	RESULT _____
	_____	_____	_____	TOTAL # VISITS _____

RESULT CODES:

- 1. COMPLETED
- 2. NOT AT HOME
- 3. POSTPONED
- 4. REFUSED
- 5. PARTLY COMPLETED
- 6. INCAPACITATED
- 7. OTHER (SPECIFY) \_\_\_\_\_

TIME BEGUN \_\_\_\_\_

TIME COMPLETED \_\_\_\_\_

**“ I WOULD LIKE TO START BY ASKING YOU SOME QUESTIONS ABOUT RESOURCES. THIS SECTION OF THE INTERVIEW WILL INCLUDE QUESTIONS ABOUT LAND, WORK, AND INCOME.”**

NO	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP TO
001	Do you yourself own any land?	YES.....1 NO.....2→	017
002	Is the land you own all located in one plot, or is it located in separate plots?	ONE PLOT.....1 SEPARATE PLOTS.....2→	006
003	How did you acquire the land you own?	INHERITANCE.....1 GIFT.....2 PURCHASE.....3 OTHER.....4	
004	From whom did you inherit, receive, or purchase (INTERVIEWER: CHOOSE CORRECT TERM) your land?	FATHER.....1 SPOUSE.....2 BROTHER.....3 OTHER RELATIVE.....4 NON- RELATIVE.....5	
005	How large is your landholding?	≤ ¼ ACRE.....1 ≥ ¼ AND ≤ ½ .....2 ½ TO ≤1.....3 1 TO 2.....4 OTHER.....5 (SIZE).....	ALL SKIP TO 008
006	Can you tell me how many separate plots you own and how large they are?	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ IF MORE THAN TEN, SEPARATE SHEET AT END	
007	Can you tell me how you got each plot ? For each plot, can you tell me if you got it through inheritance (CODE 1) , gift, (CODE 2) , purchase (CODE 3), or some other way (describe) (CODE 4).  And can you also tell me from whom you got each plot : father (CODE 1), spouse (CODE 2), brother (CODE 3), other relative (CODE 4), or non-relative (CODE 5)? If non-relative, name.	CODE HOW CODE WHO P1. _____ P2. _____ P3. _____ P4. _____ P5. _____ P6. _____ P7. _____ P8. _____ P9. _____ P10. _____ IF MORE THAN TEN, SEPARATE SHEET AT END	

008	Do you own land you do not use yourself?	YES.....1 NO.....2→	017
009	Is it used by other people?	YES.....1 NO.....2→	017
010	Who are the people who use this land?	RELATIVE.....1 IN-LAW.....2 FRIEND.....3 OTHER.....4 (RELATIONSHIP	
011	Is their access to this land free or do they make some kind of payment to use it?	FREE.....1 PAYMENT.....2→	013
012	Why do you let them use this land with no payment? (OPEN ENDED)		
013	What kind of payment do they make for using this land? (INTERVIEWER: RESPONDENT MAY CHOOSE MORE THAN ONE ANSWER. BE ALERT TO APPROPRIATE SKIPS)	CASH.....1 CROPS.....2 SERVICES.....3 OTHER.....4 (SPECIFY)	
014	What is the CASH amount they pay to use it?	AMOUNT _____	
015	What kind of CROPS do they provide and in what amount? (OPEN ENDED)		
016	What kind of LABOR do they supply? (OPEN ENDED)		
017	Do you use land you do not own?	YES.....1 NO.....2→	028
018	How much of such land do you use?	AMOUNT _____	



019	How do you use this land? (OPEN ENDED)		
020	Is your access to this land free or do you make some kind of payment in order to use it?	FREE.....1 PAYMENT.....2 →	023
021	Who gives you free use of this land?	RELATIVE.....1 IN-LAW.....2 FRIEND.....3 OTHER.....4 (RELATIONSHIP)	
022	Why do they let you use this land without payment? (OPEN ENDED)	→	028
023	What kind of payment do you make for using this land? (INTERVIEWER: RESPONDENT MAY CHOOSE MORE THAN ONE ANSWER. BE ALERT TO APPROPRIATE SKIPS)	CASH.....1 CROPS.....2 SERVICES.....3 OTHER.....4 (SPECIFY)	
024	To whom do you make this payment?	RELATIVE.....1 IN-LAW.....2 FRIEND.....3 OTHER.....4 (RELATIONSHIP)	
025	What is the CASH amount you pay to use this land? (OPEN ENDED)	AMOUNT _____	
026	What kind of CROPS do you provide and in what amount? (OPEN ENDED)		
027	What kind of LABOR do you supply? (OPEN ENDED)		
028	Do you own a boat?	YES.....1 NO.....2	

029	Do you own a bicycle?	YES.....1 NO.....2	
030	Do you own a radio?	YES.....1 NO.....2	
031	Do you own cattle?	YES.....1 NO.....2 →	033
032	How many cattle do you own?	NUMBER _____	
033	Do you own goats?	YES.....1 NO.....2 →	035
034	How many goats do you own?	NUMBER _____	
035	Is there any other item you own that you feel is important to your household's welfare? (OPEN ENDED)		

**INTERVIEWER INSTRUCTIONS: "NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT YOUR HOUSEHOLD. FIRST, I'D LIKE TO GET YOUR VIEW ABOUT WHAT MAKES A HOUSEHOLD WEALTHY OR POOR. I'M GOING TO SHOW YOU A SCALE THAT STARTS WITH "POOREST" AT THE LEFT END AND MOVES TO "WEALTHIEST" AT THE RIGHT END."**

036

Can you show me where you would locate your **own** current household on this scale?

POOREST 0      1      2      3      4      5 WEALTHIEST

Can you tell me what features of your **current** household led you to locate it where you did? (OPEN ENDED)

037

Can you think back to the household you lived in for the longest time when you were a **child** growing up, and show me where you would locate that household?

POOREST 0      1      2      3      4      5 WEALTHIEST

Can you tell me what features of your **childhood** household led you to locate it where you did? (OPEN ENDED)

038

Can you show me where you would locate the household of (NAME OF OTHER VILLAGER TO BE SUPPLIED) on this scale?

POOREST 0      1      2      3      4      5 WEALTHIEST

Can you tell me what features of that household led you to locate it where you did?(OPEN ENDED)

039	Does anyone in your household work for wages (is employed by someone who pays cash for labor)?	YES.....1 NO.....2→	042
40	Can you tell me the name of the person and the kind of work s/he does?	NAME      OCCUPATION 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ IF MORE THAN 5, SEPARATE SHEET AT END	
041	Can you tell me if this person(s) works all year round or for part of the year?	FULL=1 PART=2 NAME 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ IF MORE THAN 5, SEPARATE SHEET AT END	
042	Is anyone in your household self employed (works, but not for an employer)?	YES.....1 NO.....2→	046
043	Can you tell me the name of the person and the kind of work s/he does?	NAME      OCCUPATION 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ IF MORE THAN 5, SEPARATE SHEET AT END	
44	Can you tell me if this person(s) works all year round or for part of the year?	FULL=1 PART=2 NAME 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ IF MORE THAN 5, SEPARATE SHEET AT END	

045	Does any of these people who are employed for wages or self-employed make a cash contribution to the household? If so, what is the approximate amount of the contribution?	NAME      AMOUNT 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ IF MORE THAN 5, SEPARATE SHEET AT END	
046	Does any one in your household make any kind of non-cash contribution to the household?	YES.....1 NO.....2→	048
047	What kind of contribution do they make? (INTERVIEWER: RESPONDENT MAY CHOOSE MORE THAN ONE)	FOOD.....1 CLOTHING..... 2 OTHER.....3 (SPECIFY)	
048	Does anyone living elsewhere send money to be used by your household?	YES.....1 NO.....2→	052
049	Who is (are) this (these) person(s)?	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ IF MORE THAN 5, SEPARATE SHEET AT END	
050	Where are they living ?	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ IF MORE THAN 5, SEPARATE SHEET AT END	
051	What is the source of the money they send?	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ IF MORE THAN 5, SEPARATE SHEET AT END	
052	Does anyone living elsewhere send any other kind of (non-cash) contribution to be used by your household?	YES.....1 NO.....2→	056
053	Who is (are) this (these) person(s)?	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ IF MORE THAN 5, SEPARATE SHEET AT END	
054	Where are they living ?	1. _____ 2. _____ 3. _____ 4. _____ 5. _____ IF MORE THAN 5, SEPARATE SHEET AT END	

055	What kind of contribution do they make? <b>(INTERVIEWER: RESPONDENT MAY CHOOSE MORE THAN ONE)</b>	FOOD.....1 CLOTHING.....2 OTHER.....3 (SPECIFY)	
056	Can you estimate how much <b>TOTAL CASH</b> was available to your household over the past year?	≤TK 4000.....1 TK4000-8000.....2 TK 8000-12000.....3 12000-16000.....4 ≥16000.....5 IF ≥ 16000, AMOUNT _____	
057	Over the past year did you have enough food to feed your household all year or only part of the year?	ALL.....1 PART.....2	→ 061
058	For how many months was your food sufficient? <b>(OPEN ENDED)</b>		
059	During the period in which your food supply was not sufficient, was there anyone (person or institution) from whom you sought help?	YES.....1 NO.....2→	061
060	Who is that person or institution? <b>(OPEN ENDED, TRY TO ELICIT REASON FOR GOING TO THAT SOURCE.)</b>		
061	Do you currently owe a debt to anyone?	YES.....1 NO.....2→	064
062	Can you tell me the amount of the debt and what it is for? <b>(OPEN ENDED)</b>	AMOUNT _____	
063	To whom do you owe this debt? <b>(OPEN ENDED)</b>		
064	Does anyone currently owe a debt to you?	YES.....1 NO.....2→	066
065	Can you tell me the amount of the debt and what it is for? <b>(OPEN ENDED)</b>	AMOUNT _____	

**INTERVIEWER INSTRUCTIONS: FOR NEXT SECTION, CONSULT COVER PAGE TO DETERMINE NUMBER, SEX AND AGE OF CHILDREN. PROCEED ACCORDING TO THOSE DATA.**

**“NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE RELATIONSHIPS BETWEEN MEN AND WOMEN AND THE PROPER ACTIVITIES AND QUALITIES FOR EACH.”**

066	You have (number) son(s) who are not yet 18 . Can you tell me an adult or adults that you think would be a good model for your son (s) to follow? Are there people you would like your son(s) to be like when they are grown? <b>(OPEN ENDED)</b>		
067	What characteristics do these people have that makes them good models for your sons to follow? <b>(OPEN ENDED)</b>		
068	You have (number) daughter(s) who are not yet 18 . Can you tell me an adult or adults that you think would be a good model for your daughter (s) to follow? Are there people you would like your daughter(s) to be like when they are grown? <b>(OPEN ENDED)</b>		
069	What characteristics do these people have that makes them good models for your daughters to follow? <b>(OPEN ENDED)</b>		
070	Who do you think it is more important to educate, boys or girls?	BOYS.....1 GIRLS.....2→	072

071	Why do you think that it is more important to educate boys? <b>(OPEN ENDED)</b>		
072	Why do you think that it is more important to educate girls? <b>(OPEN ENDED)</b>		
073	What would you like to see your <b>SON(S)</b> doing when they are your age? What station in life would you like to see them occupy? <b>(OPEN ENDED)</b>		
074	What would you like to see your <b>DAUGHTERS(S)</b> doing when they are your age? What station in life would you like to see them occupy? <b>(OPEN ENDED)</b>		
075	Do you think it is likely that your son(s) will achieve this station?	YES.....1 NO.....2.	
076	Why do you think this? <b>(OPEN ENDED)</b>		
077	Do you think it is likely that your daughter(s) will achieve this station?	YES.....1 NO.....2.	

078	Why do you think this? <b>(OPEN ENDED)</b>		
079	Do you feel that you can do anything to help your son(s) achieve this station in life?	YES.....1 NO.....2→	081
080	What do you think you could do to help? <b>(OPEN ENDED)</b>		
081	Do you feel that you can do anything to help your daughter(s) achieve this station in life?	YES.....1 NO.....2→	083
082	What do you think you could do to help? <b>(OPEN ENDED)</b>		
083	What do you think are the most important qualities for a wife to possess? <b>(OPEN ENDED)</b>		
084	What do you think are the most important qualities for a husband to possess? <b>(OPEN ENDED)</b>		



085	What do you think are the three most important things a father should do for his son? <b>(OPEN ENDED)</b>		
086	What do you think are the three most important things a father should do for his daughter? <b>(OPEN ENDED)</b>		
087	In your own childhood, was your father able to do those things for you?	YES.....1 → NO.....2	089
088	Why do you think he was not able to do so? <b>(OPEN ENDED)</b>		
089	<b>ARE YOU (MALE RESPONDENT)/ IS YOUR HUSBAND (FEMALE RESPONDENT) (INTERVIEWER: CIRCLE ONE) able to do these things for your children?</b>	YES.....1 → NO.....2	091
090	Why do you think <b>YOU (MALE RESPONDENT) ARE/ YOUR HUSBAND IS (FEMALE RESPONDENT) (INTERVIEWER: CIRCLE ONE )</b> not able to do so? <b>(OPEN ENDED)</b>		
091	What do you think are the three most important things a mother should do for her son? <b>(OPEN ENDED)</b>		

092	What do you think are the three most important things a mother should do for her daughter ? <b>(OPEN ENDED)</b>		
093	In your own childhood, was your mother able to do those things for you?	YES.....1 → NO.....2	095
094	Why do you think she was not able to do so? <b>(OPEN ENDED)</b>		
095	<b>ARE YOU (FEMALE RESPONDENT) / IS YOUR WIFE (MALE RESPONDENT) (INTERVIEWER: CIRCLE ONE)</b> able to do these things for your children?	YES.....1 → NO.....2	097
096	Why do you think <b>YOU (FEMALE RESPONDENT ) ARE / YOUR WIFE (MALE RESPONDENT) (INTERVIEWER: CIRCLE ONE)</b> IS not able to do so? <b>(OPEN ENDED)</b>		
097	What do you think are the three most important things a son should do for his father ? <b>(OPEN ENDED)</b>		

098	What do you think are the three most important things a daughter should do for her father ? <b>(OPEN ENDED)</b>		
099	Do you feel that <b>YOU</b> have been able to do these things for <b>YOUR</b> father?	YES.....1 → NO.....2	101
100	Why do you think <b>YOU</b> have not been able to do so? <b>(OPEN ENDED)</b>		
101	Do you think that your children will be able to do these things for their father?	YES.....1 → NO.....2	103
102	Why do you think your children will not be able to do so? <b>(OPEN ENDED)</b>		
103	What do you think are the three most important things a son should do for his mother? <b>(OPEN ENDED)</b>		
104	What do you think are the three most important things a daughter should do for her mother ? <b>(OPEN ENDED)</b>		

105	Do you feel that <b>YOU</b> have been able to do these things for <b>YOUR</b> mother?	YES.....1 → NO.....2	107
106	Why do you think <b>YOU</b> have not able to do so? ( <b>OPEN ENDED</b> )		
107	Do you think that your children will be able to do these things for their mother?	YES.....1 → NO.....2	109
108	Why do you think your children will not be able to do so? ( <b>OPEN ENDED</b> )		

**“IN THE NEXT SECTION, I WILL READ A NUMBER OF STATEMENTS TO YOU AND I WILL ASK YOU TO TELL ME FOR EACH STATEMENT IF YOU ‘STRONGLY AGREE’; ‘AGREE’; ‘HAVE NO OPINION’; ‘DISAGREE’; OR ‘STRONGLY DISAGREE’.**

109	A man’s primary responsibility is to support his wife and children. Do you 1. STRONGLY AGREE    2. AGREE    3. NO OPINION    4. DISAGREE    5. STRONGLY DISAGREE
110	A woman’s primary responsibility is to care for her husband and children. Do you 1. STRONGLY AGREE    2. AGREE    3. NO OPINION    4. DISAGREE    5. STRONGLY DISAGREE
111	It is never appropriate for a woman to work outside her bari. Do you 1. STRONGLY AGREE    2. AGREE    3. NO OPINION    4. DISAGREE    5. STRONGLY DISAGREE
112	Husbands and wives should share household tasks equally. Do you 1. STRONGLY AGREE    2. AGREE    3. NO OPINION    4. DISAGREE    5. STRONGLY DISAGREE
113	If there is a disagreement between husband and wife, wives should defer to their husbands’ judgement. Do you 1. STRONGLY AGREE    2. AGREE    3. NO OPINION    4. DISAGREE    5. STRONGLY DISAGREE
114	A woman should never leave her bari without her husband’s permission. Do you 1. STRONGLY AGREE    2. AGREE    3. NO OPINION    4. DISAGREE    5. STRONGLY DISAGREE
115	A woman may travel outside her bari only in the company of a male relative. Do you 1. STRONGLY AGREE    2. AGREE    3. NO OPINION    4. DISAGREE    5. STRONGLY DISAGREE

116	A woman may travel outside her bari if she is accompanied by any relative. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE
117	It is a woman's responsibility to discipline her children. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE
118	It is a man's responsibility to discipline his children. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE
119	Decisions about household spending should be made by husbands alone. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE
120	Decisions about household spending should be made by wives alone. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE
121	Decisions about household spending should be made by husbands and wives together. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE
122	If a woman's husband is not available, she may leave her bari with her father-in-law's or mother-in-law's permission. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE
123	Children suffer if their mothers work outside the bari. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE
124	If a family is in need, wives should seek employment outside their bari. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE
125	Politics is men's work; therefore, women should not be involved in politics. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE
126	If the women of a household travel freely outside their bari, the honor of the household suffers. Do you	1. STRONGLY AGREE	2. AGREE	3. NO OPINION	4. DISAGREE	5. STRONGLY DISAGREE

**"IN THE NEXT PART OF THE INTERVIEW I WILL NAME A HOUSEHOLD DUTY AND ASK YOU TO TELL ME WHO PERFORMS THIS DUTY FOR YOUR HOUSEHOLD, THE HUSBAND, THE WIFE, BOTH HUSBAND AND WIFE, OR SOMEONE ELSE."**

**IF RESPONDENT INDICATES TASK IS NOT APPLICABLE, (FOR EXAMPLE, THE HOUSEHOLD OWNS NO LAND AND SO NO ONE PLANTS OR HARVESTS CROPS), CODE "N.A." ACROSS CODING CATEGORIES.**

NO	DUTY	HUSBAND 1	WIFE 2	BOTH 3	OTHER/ WHO 4
127	Buys food at market				
128	Builds house				

NO	DUTY	HUSBAND 1	WIFE 2	BOTH 3	OTHER/ WHO 4
129	Provides maintenance for house (repairs, etc.)				
130	Sews and repairs clothing and bedding				
131	Fetches water				
132	Provides fuel				
133	Plants crops				
134	Weeds crops				
135	Harvests crops				
136	Tends housesite garden (herbs, etc.)				
137	Tends large animals (cows, goats, etc.)				
138	Tends small animals (chickens)				
139	Prepares food for everyday meals				
140	Cooks food for everyday meals				
141	Serves food for everyday meals				
142	Prepares food for special meals				
143	Cooks food for special meals				
144	Serves food for special meals				
145	Cleans up after meals				
146	Oversees children's education				
147	Dispenses household monies				
148	Disciplines children				
149	Cleans area around (outside) house				
150	Washes clothes				
151	Cleans inside house				
152	Tends children				
153	Cares for sick				
154	Takes children to medical facility when necessary				
155	Represents household in village meetings				
156	Settles disputes among household members				
157	Decides on non-food expenditures				
158	Maintains tools				
159	Makes non-food purchases				
160	Decides on timing of planting				

NO	DUTY	HUSBAND 1	WIFE 2	BOTH 3	OTHER/ WHO 4
161	Decides what crops will be planted where				
162	Decides on sale of crops				
163	Sells crops				

**“NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT ACTIVITIES YOU MIGHT BE ENGAGED IN.”**

164	Are you a member of a political party?	YES.....1 NO.....2→	166
165	Have you ever held office in a political party?	YES.....1 NO.....2	
166	Have you ever participated in a political action (e.g., hartal, protest, etc.)	YES.....1 NO.....2→	168
167	What was the occasion? <b>(OPEN ENDED)</b>		
168	Have you ever voted in an election?	YES.....1 NO.....2→	170
169	Did you vote in the most recent election ? <b>(INTERVIEWER CHECK DATE OF MOST RECENT ELECTION)</b>	YES.....1 NO.....2	
170	Have you ever traveled beyond Matlab thana?	YES.....1 NO.....2→	172
171	Have you ever traveled beyond Comilla district?	YES.....1 NO.....2	
172	What is the farthest place to which you have traveled? <b>(OPEN ENDED)</b>		
173	What was your reason for traveling there? <b>(OPEN ENDED)</b>		
174	Did you travel alone or with others?	ALONE.....1→ WITH OTHERS.....2.	176

175	With whom did you travel? ( OPEN ENDED; PROBE FOR RELATIONSHIP)		
176	Are you a member of a development group?	YES.....1 NO.....2→	178
177	Which group do you belong to?	BRAC.....1 GRAMEEN.....2 BIDS.....3 OTHER.....4 (SPECIFY)	
178	Have you ever been a member of a development group?	YES.....1 NO.....2→	180
179	Which group did you belong to?	BRAC.....1 GRAMEEN.....2 BIDS.....3 OTHER.....4 (SPECIFY)	

**INTERVIEWER: FOR THE NEXT SET OF QUESTIONS,**

**IF RESPONDENT IS FEMALE ASK: "IS IT ACCEPTABLE FOR YOU TO GO TO THE FOLLOWING PLACES...?"**

**IF RESPONDENT IS MALE ASK: "IS IT ACCEPTABLE FOR YOUR WIFE TO GO TO THE FOLLOWING PLACES...?"**

**CIRCLE ONE: YOU/YOUR WIFE**

**"NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT WHETHER IT IS ACCEPTABLE FOR (YOU) (YOUR WIFE) TO GO TO THE FOLLOWING PLACES**

**YES, ALONE.....1**  
**YES, IF ACCOMPANIED.....2**  
**NO.....3**  
**DON'T KNOW.....4"**

- |     |                                 |   |   |   |   |
|-----|---------------------------------|---|---|---|---|
| 180 | neighboring bari                | 1 | 2 | 3 | 4 |
| 181 | more distant bari, same village | 1 | 2 | 3 | 4 |
| 182 | local market                    | 1 | 2 | 3 | 4 |
| 183 | health facility                 | 1 | 2 | 3 | 4 |
| 184 | Matlab port                     | 1 | 2 | 3 | 4 |



185	association meetings	1	2	3	4
186	nearby village	1	2	3	4
187	distant village	1	2	3	4
188	tea shop	1	2	3	4
189	pharmacy	1	2	3	4
190	mosque	1	2	3	4
191	school	1	2	3	4
192	natal village	1	2	3	4

**INTERVIEWER: IF RESPONDENT ANSWERS 2 FOR ANY OF THE ABOVE PLACES, ASK:**

**“FOR THOSE PLACES TO WHICH YOU SAID (YOU) (YOUR WIFE) CAN GO ONLY IF ACCOMPANIED, WHO MUST ACCOMPANY (YOU) (HER)?”**

PLACE	WHO MUST ACCOMPANY	REASON

**IF RESPONDENT ANSWERED 3 FOR ANY OF THE ABOVE PLACES, ASK:  
“FOR THE PLACES TO WHICH YOU SAID IT WAS NOT ACCEPTABLE FOR (YOU) (YOUR WIFE) TO GO, CAN YOU IMAGINE ANY CIRCUMSTANCES UNDER WHICH IT WOULD BE ACCEPTABLE? “**

**IF RESPONDENT IS HAVING DIFFICULTY, USE FOLLOWING PROBE: “ FOR EXAMPLE, IF A CHILD NEEDED EMERGENCY MEDICAL TREATMENT AND (YOU) (YOUR WIFE) WERE THE ONLY AVAILABLE PERSON TO TAKE THE CHILD TO A HEALTH FACILITY, WOULD IT BE ACCEPTABLE TO DO SO IN**

**THAT CIRCUMSTANCE? ARE THERE OTHER CIRCUMSTANCES YOU CAN THINK OF?"**

Place	Circumstance

**“IN THIS LAST PART OF THE INTERVIEW, I’D LIKE TO ASK SOME QUESTIONS THAT DEAL WITH FAMILY PLANNING AND THE USE OF CONTRACEPTIVES. FIRST, I’D LIKE TO SUGGEST SOME DIFFERENT SITUATIONS A COUPLE MIGHT FIND THEMSELVES IN AND ASK YOU, FOR EACH DIFFERENT SITUATION, WHETHER YOU THINK THEIR USE OF CONTRACEPTIVES WOULD BE ACCEPTABLE OR NOT ACCEPTABLE.”**

193	A woman who has no children has been told that pregnancy would be dangerous to her health. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don’t know
194	A woman who has only daughters has been told that pregnancy would be dangerous to her health. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don’t know
195	A woman who has only sons has been told that pregnancy would be dangerous to her health. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don’t know
196	A woman who has both sons and daughters has been told that pregnancy would be dangerous to her health. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don’t know
197	A couple finds it very difficult to feed their children. The birth of another child would mean that the children they already have would suffer. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don’t know
198	A woman with no children would have to end her education if she had a child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don’t know
199	A woman with only daughters would have to end her education if she had another child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don’t know
200	A woman with only sons would have to end her education if she had another child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don’t know

201	A woman with both sons and daughters would have to end her education if she had another child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
202	A man with no children would have to end his education if his wife had a child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
203	A man with only daughters would have to end his education if his wife had another child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
204	A man with only sons would have to end his education if his wife had another child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
205	A man with both sons and daughters would have to end his education if his wife had another child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
206	A woman with no children has a wage earning job. She would have to give up this job if she had a child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
207	A woman with only daughters has a wage earning job. She would have to give up this job if she had another child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
208	A woman with only sons has a wage earning job. She would have to give up this job if she had another child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
209	A woman with both sons and daughters has a wage earning job. She would have to give up this job if she had another child. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
210	A man is the only son of his father. He and his wife have no sons. His wife has been told that pregnancy would be dangerous to her health. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
211	A man is the only son of his father. He and his wife have no sons. Pregnancy would require his wife to end her education. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know
212	A man is the only son of his father. He and his wife have no sons. Pregnancy would require his wife to give up a wage earning job. Do you think the use of contraceptives to prevent pregnancy in this situation is 1. Acceptable                      2. Not acceptable                      3. Don't know

**“NOW COULD WE TALK ABOUT YOUR OWN EXPERIENCES WITH FAMILY PLANNING?”**

213	Can you think back to the first time you became aware of family planning programs? How did you first become aware of family planning?	RADIO.....1 NEWSPAPER.....2 MCH-FP WORKER..... 3 RELATIVE..... 4 (SPECIFY) SPOUSE.....5 OTHER.....6 (SPECIFY)	
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214	Before you made a decision about the use or non-use of contraceptives, did you discuss it with anyone else?	YES.....1 NO.....2→	216
215	Who did you discuss it with? <b>(MORE THAN ONE ANSWER POSSIBLE)</b>	MCH-FP WORKER..... 1 RELATIVE..... 2 (SPECIFY) SPOUSE.....3 OTHER.....4 (SPECIFY)	
216	Did you make the final decision by yourself or was someone else involved in the final decision?	SELF ONLY.....1→ OTHER.....2	221
217	Who else was involved in the final decision? <b>(MORE THAN ONE ANSWER POSSIBLE)</b>	MCH-FP WORKER..... 1 RELATIVE..... 2 (SPECIFY) SPOUSE.....3 OTHER.....4 (SPECIFY)	
218	Who do you think had the greatest influence on your final decision? <b>(OPEN ENDED; PROBE FOR RELATIONSHIP)</b>		
219	Do you feel that when you made this decision , your own opinions were most important , or were other people's opinions equally or more important?	OWN.....1→ OTHER EQUAL.....2 OTHER MORE.....3	221
220	Who was (were) that other person(s)? <b>(OPEN ENDED; PROBE FOR RELATIONSHIP)</b>		
221	Who do you think will be affected by your decision concerning contraceptive use? <b>(MORE THAN ONE ANSWER POSSIBLE)</b>	SELF ONLY.....1 SPOUSE.....2 CHILDREN.....3 OWN PARENTS.....4 SPOUSE'S PARENTS.....5 OTHERS.....6 (SPECIFY)	
222	Do you feel that your decision will have a good effect on all the people who are affected by that decision?	YES.....1→ NO.....2	224
223	What bad effects do you think might result from you decision and for whom? <b>(OPEN ENDED)</b>		

224	On the whole, are you satisfied with results of your decision about contraceptive use?	YES.....1 NO.....2 NOT SURE.....3	
225	Can you tell me why you feel that way? <b>(OPEN ENDED)</b> .		

**“THAT’S THE END OF THE INTERVIEW. THANK YOU VERY MUCH FOR YOUR TIME AND FOR HELPING THIS RESEARCH PROJECT SUCCEED. DO YOU HAVE ANY QUESTIONS ABOUT THE RESEARCH YOU WOULD LIKE TO ASK?”**

**PATRICIA LYONS JOHNSON**  
**CURRICULUM VITAE**

**CURRENT POSITION:**

Associate Professor of Anthropology and Women's Studies  
Senior Research Associate, Population Research Institute  
Pennsylvania State University, University Park, PA 16802

**EDUCATION:**

- 1964-1969      Hunter College (C.U.N.Y.), New York, B.A. Anthropology (summa cum laude)
- 1973-1975      University of Michigan, Ann Arbor, M.A. Anthropology
- 1975-1982      University of Michigan, Ann Arbor, Ph.D. Anthropology

**GRANTS AND FELLOWSHIPS:**

- 1978-1979      Continuing Education of Women (CEW) Scholarship, University of Michigan, Ann Arbor
- 1980              Gainj Kinship and Social Organization.  
Rackham Dissertation Fellowship, University of Michigan,  
Ann Arbor
- 1980-1982      Danforth Foundation Fellowship
- 1982-1983      Socioeconomic Change in a Highland New Guinea Population. Wenner-Gren Foundation  
for Anthropological Research
- 1986-1988      National Institutes of Health Postdoctoral Fellowship  
Center for Demography and Ecology  
University of Wisconsin, Madison
- 1986-1989      Ovarian Function and Fertility in Highland New Guinea. National Science Foundation
- 1991              Six Feminist Scholars Lecture Series.  
Pennsylvania Humanities Council
- 1991              Childhood Nutrition and Fetal Loss among the Gainj of Madang Province, Papua New  
Guinea.  
Pilot Project, Research Initiation Grant, Biomedical Research Support Grant,  
Andrew W. Mellon Foundation Grant  
Penn State University
- 1993              National Science Foundation Summer Institute on Research Methods in Cultural  
Anthropology  
University of Florida, Gainesville
- 1994              American Institute of Bangladesh Studies  
3 month preliminary research, September-December 1994,  
Bangladesh
- 1994              Fulbright Foundation Fellowship, January - June 1995,  
Institute of Ethnography and Social Anthropology,  
University of Aarhus, Denmark

- 1997 American Institute of Bangladesh Studies  
9 month research, January-September 1998,  
Bangladesh
- 1998 National Science Foundation (# SBR-9720712; \$96,224)  
11 months research, January-December, 1998,  
Bangladesh

#### TEACHING EXPERIENCE:

- 1982 Lecturer, Department of Anthropology,  
University of Michigan, Ann Arbor
- 1984 Lecturer, Department of Behavioral Sciences,  
University of Michigan, Dearborn
- 1984-1985 Lecturer, Department of Sociology and Anthropology,  
Eastern Michigan University
- 1985 Visiting Assistant Professor, Department of Anthropology,  
University of Michigan, Ann Arbor
- 1985-1986 Visiting Assistant Professor, Interdisciplinary and Women's Studies,  
The College of Wooster, Wooster, Ohio
- 1988-1992 Assistant Professor, Anthropology and Women's Studies,  
Pennsylvania State University
- 1993- Associate Professor, Anthropology and Women's Studies,  
Pennsylvania State University
- 1995 Fulbright Professor, Institute of Ethnography and Social Anthropology,  
University of Aarhus, Denmark

#### COURSES TAUGHT

##### UNDERGRADUATE:

Introduction to Anthropology  
Cultural Anthropology  
Comparative Study of Cultures  
Principles of Anthropology  
North American Indians  
Development and Change  
Sex and Status in Cross-Cultural Perspective  
Ethnographic Reality and the Ethnographer's Gender  
Anthropology of Gender  
Introduction to Women's Studies  
Feminist Perspectives on Research and Teaching  
Peoples and Cultures of Highland New Guinea

##### GRADUATE:

Social Organization  
Anthropology of Women and Development  
Peoples and Cultures of Highland New Guinea  
Women and Development  
Topics in Cultural Anthropology

**FIELD WORK:**

- 1977-1978      Research on social organization, demography, gender, ideology, Gainj Census Division, Madang Province, Papua New Guinea
- 1982-1983      Research on economic development, social change and fertility, Gainj Census Division, Madang Province, Papua New Guinea
- 1991              Research on fetal loss, nutritional change, Gainj Census Division, Madang Province, Papua New Guinea
- 1994              Preliminary research (3 months), Bangladesh

**OTHER PROFESSIONAL ACTIVITIES:**

- 1980              Symposium Organizer, "Gender and Sexuality," Annual Meetings, Central States Anthropological Society
- 1984              Co-chair, Women's Studies Section, Michigan Academy of Science, Arts and Letters
- 1985              Chair, Women's Studies Section, Michigan Academy of Science, Arts and Letters
- 1988              Symposium Organizer and Chair, "Women and Children First: The Rhetoric and Reality of Development," Annual Meetings, American Anthropological Association, Chicago
- 1988-95          Member, Review Panel, Social Science Research Council Predissertation Grants
- 1990              Symposium Organizer and Chair, Balancing Acts: Women and the Encounter of Old and New Systems in the Process of Social Change. Fourth International Interdisciplinary Congress on Women, New York
- 1990              Symposium Co-organizer and Chair, Household Organization: Empirical Approaches to Continuity and Change. Annual Meetings, American Anthropological Association, New Orleans
- 1993              Symposium Organizer and Chair, Feminist Perspectives and Approaches in Demography. Annual Meetings, Population Association of America, Cincinnati
- 1993-              Associate Editor, **Human Ecology**
- 1996-97          Member, Dissertation Review Panel, National Science Foundation, Cultural Anthropology Program



**PRESENTED PAPERS:**

- 1980            When Dying is Better Than Living: Female Suicide Among the Gainj of Papua New Guinea, Annual Meetings, Central States Anthropological Society, Ann Arbor
- 1987            Women and Development: A Highland New Guinea Example, Annual Meetings, American Anthropological Association, Chicago
- 1988            Female Fecundity in Highland New Guinea, Annual Meetings, Population Association of America, New Orleans
- 1988            Economic Development and New Female Roles in Papua New Guinea, International Congress of Anthropological and Ethnological Science, Zagreb, Yugoslavia
- 1988            Education and the Reproduction of Gender Inequality in Papua New Guinea, Annual Meetings, American Anthropological Association, Phoenix, Arizona
- 1990            The Worst of Both Worlds: Traditional Gender Ideology and Western Law in Highland New Guinea, Fourth International Interdisciplinary Congress on Women, New York
- 1990            Household Composition and Fertility in a Highland New Guinea Population, Annual Meetings, American Anthropological Association, New Orleans
- 1992            Discussant, Anthropological Approaches in Demographic Research, Annual Meetings, Population Association of America, Denver
- 1993            Widows' Might: New Economic Roles for Widows among the Gainj of Papua New Guinea, Annual Meetings, American Anthropological Association, San Francisco
- 1996            Explaining Fertility Decline in Bangladesh: Culture as a Residual Category, Annual Meetings, Population Association of America, New Orleans
- 1996            Fertility Decline in Bangladesh: What's Culture Got to Do With It?, Annual Meetings, American Anthropological Association, San Francisco

**INVITED PRESENTATIONS:**

- 1988            Women, Rural Development, and Household Structure. Development Colloquium, Department of Rural Sociology, University of Wisconsin, Madison
- 1988            Women, Development and Fertility, Department of Anthropology, University of Wisconsin at Milwaukee
- 1990            Invited Discussant, Bridging Levels of Analyses in the Study of Women's Lives Across Three Longitudinal Studies, Invited International Conference sponsored by the Murray Center, Woods Hole, MA

- 1992 Keynote Speaker, Women's History Month, Women's Studies Program, Eastern Michigan University
- 1992 Health in the Highlands of New Guinea, Colloquium sponsored by the Department of Anthropology and Office of Women's Concerns, University of Delaware
- 1994 Fertility and Development, Dhaka University, Dhaka, Bangladesh
- 1995 Culture and Biology, Development and Fertility, Aarhus University, Denmark
- 1995 Culture and Biology, Development and Fertility, Copenhagen University, Denmark
- 1996 Panel Member, Conference on Demographic Anthropology Programs, Brown University

#### MEMBERSHIP IN HONORARY AND PROFESSIONAL SOCIETIES:

Phi Beta Kappa  
 American Anthropological Association  
 Association for Social Anthropology in Oceania  
 Association for Feminist Anthropology  
 Association for Women in Development  
 Population Association of America

#### PRIMARY RESEARCH INTERESTS:

Demography (fertility), gender ideology and women's roles, economic development and socioeconomic change, household structure, kinship, social organization.

#### PUBLICATIONS:

Johnson, P.L., (1977) A Note on Egalitarian Societies. *Michigan Discussions in Anthropology* 3:107-109.

Johnson, P.L., (1981) When Dying is Better Than Living: Female Suicide Among the Gainj of Papua New Guinea. *Ethnology* 20:325-334.

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Wood, J.W., P.L. Johnson, R.L. Kirk, K. McLoughlin, N.M. Blake, and F.A. Matheson, (1982) The Genetic Demography of the Gainj of Papua New Guinea. I. Local differentiation of blood group, red cell enzyme and serum protein allele frequencies. *American Journal of Physical Anthropology* 57:15-25.

Wood, J.W., P.L. Johnson, and K.L. Campbell, (1985) Demographic and Endocrinological Aspects of Low Natural Fertility in Highland New Guinea. *Journal of Biosocial Science* 17:57-79.

Wood, J.W., D. Lai, P.L. Johnson, K.L. Campbell, and I.A. Maslar, (1985) Lactation and Birth-Spacing in Highland New Guinea. *Journal of Biosocial Science* Suppl. 9:159-173.

Long, J.C., J.J. Naidu, H.W. Mohrenweiser, H. Gershowitz, P.L. Johnson, J.W. Wood, and P.E. Smouse, (1986) Genetic Characterization of Gainj and Kalam Speaking People of Papua New Guinea. *American Journal of Physical Anthropology* 70:75-96.

Johnson, P.L., J.W. Wood, I.A. Maslar, and K.L. Campbell, (1987) Evidence for Long Ovarian Cycles in Highland New Guinea. *Human Biology* 59:837-845.

Johnson, P.L., (1987) The Effects of "Cultural Filters" in collecting Demographic Data. In: *The Survey Under Difficult Conditions*. (Ed. T. McDevitt), pp. 146-161. New Haven: Human Relations Area File Press.

Johnson, P.L., (1988) Women and Development: A Highland New Guinea Example. *Human Ecology* 160:105-122.

Johnson, P.L., M. Weinstein, And J.W. Wood, (1990) Female Fecundity in Highland New Guinea. *Social Biology* 37:26-43.

Johnson, P.L., (1990) Changing Household Composition, Labor Patterns, and Fertility in a Highland New Guinea Population. *Human Ecology* 18, No. 4:403-416. (Submitted and accepted 1991)

Fratkin, E. and P.L. Johnson (eds.), (1990) Special Issue: Empirical Approaches to Household Organization. *Human Ecology* 18, No. 4 (Submitted and accepted 1991)

Fratkin, E. and P.L. Johnson, (1990) Empirical Approaches to Household Organization. *Human Ecology* 18, No. 4:357-362. (Submitted and accepted 1991).

Johnson, P.L., J.W. Wood, (1991) The Gainj. In *Encyclopedia of World Cultures*, pp.71-74. New Haven: Human Relations Area File Press.

Johnson, P.L. (ed.), (1992) *Balancing Acts: Women and the Process of Social Change*. Boulder: Westview Press.

Johnson, P.L., (1992) Introduction. In Johnson, P.L. (ed.), *Balancing Acts: Women and the Process of Social Change*. Boulder: Westview Press, pp. 1-6.

Johnson, P.L., (1992) Working It Out: Economic Development and Gainj Women's Changing Roles. In Johnson, P.L. (ed.), *Balancing Acts: Women and the Process of Social Change*. Boulder: Westview Press, pp. 42-64.

Johnson, P.L., (1993) Education and the "New" Inequality in Papua New Guinea. *Anthropology and Education Quarterly* 24, No. 3:183-204.

Johnson, P.L., (1996) Changing Household Composition, Labor Patterns, and Fertility in a Highland New Guinea Population. In Bates, D. and Lees, S. (eds.) *Case Studies in Human Ecology*. New York: Plenum Press, pp. 237-250.

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Phone (Office) : 81 18 77, 81 54 63, Fax : 880-2-81 72 77, Email : cdrb@dhaka.agni.com

13 January 1998

## TO WHOM IT MAY CONCERN

I am happy to certify that **Dr. Patricia Lyons Johnson**, Associate Professor, Department of Anthropology, Penn State University, USA is a Senior Research Fellow of the **American Institute of Bangladesh Studies (AIBS)** set up in 1989 under the agreement between the Government of the People's Republic of Bangladesh and the American Institute of Bangladesh Studies (AIBS).

Enclosed is a copy of the Government of Bangladesh's approval for the work being done by **Dr. Patricia Lyons Johnson**.

The **Centre for Development Research, Bangladesh (CDRB)** as the authorized representative of AIBS in Bangladesh is supporting expenses of **Dr. Patricia Lyons Johnson's** stay and work in Bangladesh and organizer of her international air travel. These expenses are met out of AIBS funds under the terms and conditions set in the agreement with the government. The AIBS grant for **Dr. Patricia Lyons Johnson**, enabling her to work on "**Fertility Change in Bangladesh: Evaluating Explanatory Models**", is valid till the end of September 1998.

Her work requires staying in and around Dhaka and other suitable places during this period.

According to the conditions laid down in the agreement between the Government of Bangladesh and AIBS, she has exemptions from income tax. The Government of Bangladesh (GOB)-AIBS agreement Section - 5 States :

### 5. STATUS OF GRANTEES

- 5.1. GRANTEES and their accompanying dependents will be exempt from the payment of Bangladeshi income taxes on grants and maintenance awarded to them by the INSTITUTE.

Any help and assistance extended to **Dr. Patricia Lyons Johnson** will be profoundly appreciated.

(Dr. Mizanur Rahman Shelley)  
Chairman

পররাষ্ট্র দফতর  
গণপ্রজাতন্ত্রী বাংলাদেশ  
সরকার  
ঢাকা



MINISTRY OF FOREIGN AFFAIRS  
GOVERNMENT OF THE  
PEOPLE'S REPUBLIC OF BANGLADESH  
DHAKA

No.AM/USA/301

Date: 10 March,1997

To ;Chairman  
Centre for Development Research,Bangladesh(CDRB),  
55,Dhanmondi Residential Area,Road No.৯-A,Dhaka.

From ;Assistant Secretary  
Ministry of Foreign Affairs  
Government of the people's Republic of Bangladesh  
Dhaka.

Subject : Clearance for Ms.Patricia Lyons Johnson.

Ref : CDRB's letter of 10th March,1997.

Dear Sir,

I have been directed to inform you that the Government of Bangladesh has no objection to the visit and research work for a period of 09 months in Bangladesh by Ms.Patricia Lyons Johnson the proposed Grantee of the American Institute of Bangladesh Studies (AIBS).

Sincerely Yours,

  
(Naureen Ahsan).