THE ECONOMICS OF DOWRY

by

Vasavi Dasgupta

_____

A Dissertation Presented to the

FACULTY OF THE GRADUATE SCHOOL

UNIVERSITY OF SOUTHERN CALIFORNIA

In Partial Fulfillment of the

Requirements for the Degree

DOCTOR OF PHILOSOPHY

(Economics)

August 1991

ACKNOWLEDGMENTS

I would like to take this opportunity to thank my advisor, Professor Jeffrey B. Nugent, for his guidance and help in writing this dissertation. He took great interest in my work and, despite having a very busy schedule, was always there to read and discuss what I had done. His suggestions and comments proved invaluable and improved the quality of the dissertation to a very great extent.

I would also like to thank the other members of my Dissertation Committee, Professors Richard Easterlin and Wesley Bjur, for helpful comments, encouragement and suggestions.

I am especially grateful to ICRISAT, and in particular, to Dr. Thomas Walker, for providing me with the dataset used in this study. Dr. Walker went out of his way to send me the data and without him this dissertation would have been incomplete.

I would like to thank Anindya Sen and Tamim Ahmed for taking time out to help me with estimation and word-processing problems. Subrata Sarkar, Jayati Sarkar, Bibhas Saha, Sarbajit Sengupta, Kunal Sengupta and Arunima Sengupta were always there to help out and for that I am grateful to them.

No dissertation would be written without the understanding and sacrifice of family members. I would like to thank my parents, parents-in-law and my daughter for their patience and forbearance. And, without my husband, this dissertation would not have been written.

CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

In many societies, the initiation of a marriage is accompanied by some transfer of goods or services. Although social anthropologists have long been interested in the economic arrangements that surround marriage, economists have not paid much attention to such problems either theoretically or empirically.

In almost all cases, the parents of the bride and the groom and other family members conduct the marriage negotiations and decide on a marriage payment. Social anthropologists attempt to identify the costs and benefits from a marriage to the parties involved, and to explain the occurrence of different types of transfers and exchanges between families in terms of these costs and benefits.

One difficulty in analyzing and generalizing about marriage transactions is the variability of marriage practices themselves. Another is the fact that in many societies marriage is not defined by a single event, ceremony, or one-time economic transaction. It may be established slowly, by increments, with varying rights and complex obligations, and it may be established without any formal transfers of property.

Still another difficulty stems from misleading terminology. In social anthropology three types of marriage transactions are generally distingished:

brideservice, bridewealth or brideprice, and dowry.[1] Brideservice is defined as a period during which a prospective groom provides labor service to the family of the bride in order to obtain permission to marry. This is sometimes specified as service to the bride's father, to her mother, or directly to the bride herself.

Bridewealth or brideprice refers to the transfer of goods, valuables and sometimes cash from the kin group of the groom to that of the bride.

Dowry, very broadly speaking, is a transfer of valuables and cash from the family of the bride to that of the groom (reversing the direction of brideprice transfers). It has also been viewed as a "pre-mortem inheritance" where the bride gets her share of the natal property at the time of marriage (Goody and Tambiah, 1973). From the latter perspective dowry is a form of inter- generational transfer of wealth from the older to the younger generations. Theoretically, then, the bride or the new household being formed, receives the property. This definition of dowry is consistent with the practice that prevailed in Europe. However, there are other ramifications of this form of marriage transfer, especially in the context of Asia, that are not brought out in this definition.

The main objective of this dissertation is to identify the meaning, determinants and effects of dowry, especially as it is practised in Asia, and, more specifically, India. Dowry is important because it is a major form of inter-family transfer of wealth, and frequently constitutes a major item in the family budget.

Although, until very recently, it was practised widely throughout the world, and as its incidence in Asia, is still high, dowries are frequently viewed as a social evil. Political and other campaigns have often been raised against it; politicians have condemned it; laws have been passed putting a ban on it. Yet, even those in the forefront of anti-dowry campaigns continue to give and take dowry. Our focus, however, is not the social and political rhetoric and emotions that surround dowry in Asia. Rather, we investigate the economic aspects of the concept and try to see how dowry is determined purely form an economic standpoint. Some of the economic consequences that follow from the practice of dowry, e.g., increased indebtedness in the bride's family and are also examined.

Though historians and social anthropologists have studied the phenomenon with respect to different cultures, their focus has very often been rather general relating to all kinds of marriage transfers as a whole, of which the dowry is only one component. As mentioned above economists, e.g. Becker (1981), and Grossbard-Shechtman (1986) have only touched upon the subject. Also, when the dowry itself has been treated,in other disciplines, the relevance and applicability of the findings have frequently been severely biased by the fact that dowries play rather different roles in different settings. For example, though they all recognize that the dowry is a payment made by the bride's family to that of the groom at the time of marriage, they differ as to who is the ultimate recipient of the dowry.

Much of the existing literature has followed Tambiah (1973) in equating dowry with "stridhan" (female wealth) a concept which encompasses all gifts and wealth given to the bride at the time of marriage. According to him, the dowry is her property and in her control even though the husband usually has the rights of their management. Radcliff-Brown (1935) in his study of Greece, has used a similar notion of dowry. According to the Greek Civil Code of 1946, "Dowry is the property which the wife or somebody else on her behalf gives to the husband in order to alleviate the burdens of marriage." In this case, the dowry may be seen as a contribution made by the bride's family to the new economic unit which the marriage created. Goody (1973) has expressed a similar view and pointed out that dowry is returnable in the case of divorce, "since it is an endowment upon the woman; whatever managerial functions the husband may carry out, the destination of the dowry is the bride herself." Thus, to these authors, dowry has the following characteristics--(a) it is a gift made by the bride's family in order to help her set up a new household, and (b), although the husband 'manages' it, it does not represent a payment for an agreement to marry, and (c) it is returnable in the case of divorce. This conception of dowry is consistent with the practice that was prevalent in Europe.

However this is not how dowry is viewed in Asia. The above concept is contradicted by Van Der Veen (1971), Fruzzetti (1982), Miller (1981), Sharma

(1980) and others. Van Der Veen reserves the term dowry for "instances of real payment of the bridegroom's kin, in money, land, or other valuable property not meant for the bride." Sharma agrees, saying that the dowry is "transferred to the bridegroom's parents" and may well be redistributed by them to a wide circle of kin. Some will certainly be earmarked as belonging to the newlywed couple, but it belongs to the couple rather than to the bride as an individual. Fruzzetti sees dowry as a "dabi", a demand rightfully made by the groom in return for accepting the bride.

This latter interpretation of dowry is a very important aspect of the Hindu/Sikh dowry system and one which distinguishes it from other superficially similar systems. It reflects the very subordinate position of the bride in the household of certain cultures, and the submissive attitude she must adopt. It is inconceivable that she have any say in the distribution of the goods that she has brought with her from her natal household. In fact, as we will see later, the very determination of dowry amount is done through a bargaining process in which the groom's family is the more powerful party. The dowry does not enhance the domestic power of the bride in the household, as it did in, for example, Greece (Friedl, 1967). The most that it can do is to enhance the respect for the bride's parents and family.

Asian countries, especially those in southeast Asia and India, are the focus of our study. Hence, in our context, the most relevant definition of dowry would be the definition provided by Van Der Veen, Fruzzetti and M.N. Srinivas (1984)--dowry is the real payment made to the family of the bridegroom by that of the bride to meet the demands that are made by the former in return for accepting the bride. These payments can be substantial, and take the form of money, land and other valuables, and are not always restricted to the time of marriage. The definitions stressing female property rights do not give sufficient recognition, especially in the Asian context, to the right of the groom's family to make demands on the bride's family for accepting her and to the bargaining process wherein the dowry amount is determined.

The question of why dowry is paid has been tackled in the literature mainly by sociologists and social anthropologists. The different explanations that have been offered can broadly be categorized along the following lines.

First, the dowry system reflects the female's right to property. It is, as Tambiah (1973) puts it, "pre-mortem inheritance".

Second, it reflects the principle of "diverging devolution" according to Goody (1973), since property is transferred from common familial holdings to a daughter at marriage.

Third, it is not a mere inheritance, but has in it the components of a bargain struck between the two families in negotiating a marriage. (Fruzzetti, 1982)

Fourth, it is generally related to hypergamy,[2] in which case it is a direct exchange of status for wealth. Hence, in societies where a high value is placed on upward social mobility, it is an instrument whereby the bride's family may strive to make a superior alliance. Families, in this case, validate social status through the display of wealth; in this way the dowry may be seen as the price to be paid for better social status.

Fifth, a converse of this would be the case where the dowry acts as a signal of greater wealth and status of the bride's family. The display of wealth then becomes the signal. The groom's family agrees to go into marriage negotiations with the bride's family, based on its interpretation of the signal.

Sixth, the dowry reflects the mitigation of search and reputational costs of a woman being unmarried for a period of time.

Seventh, it is a compensation made by the bride's family to that of the groom for accepting an "unproductive" woman into their household.

Eighth, it is a payment arising from an unfavorable sex ratio. In this case, since the number of females is greater that the number of males, the family of the bride has to compete with others in order to get her married off.

We will consider each of these in turn, and show that, though the dominant (orthodox) position is that represented by the first, second and eight principles which may explain dowry in certain cases, this explanation is insufficient for explaining all the ramifications of dowries in different social settings. In fact, for India, Ceylon, pre-communist China and other Asian countries, the bargaining and signaling aspects represented by principles (3) - (7) would seem essential to an appropriate understanding of dowry as a social phenomenon. Considering only Asia does not limit the scope of our study in any way. Of 563 societies listed in the Atlas of World Cultures (Murdock, 1981), twenty-four practise dowry as the only system of marriage transfers. The number goes up to forty-three if we include societies that practise dowry together with some other form of marriage payment. Of these forty-three cultures, there is only one from Africa, three from Insular Pacific (i.e. Australia and the Islands of Oceania), one from North America (1880). The rest are from Europe and Asia. The studies cited for Europe, however, date from 110 A.D. in the case of the Roman Empire to the Czechs and Greeks in the 1950's. At the present time, dowry-payments have almost ceased to exist. In fact, Greece, which was one of the last places to have the custom, abolished it in 1983. Hence, at the present time it is primarily Asian countries where the dowry system still plays a significant role.

Even in Asia, not all countries practise dowry as the predominant form of marriage transfer. In the Islamic countries it is usual to have brideprice instead of dowry. As Arthur J. Arberry (1964), points out, in the Koran, the word "mohr" is interpreted as brideprice rather than dowry. Thus, the Koran bids its believers "And give the women their mohr as a gift spontaneous, but if they are pleased to offer you any of it, consume it with wholesome appetite." One exception to this is Bangladesh, where, in recent years, there have been increasing instances of brideprice being replaced by dowry [Ahmed, 1987].

Although otherwise quite authoratative and comprehensive, Murdock underestimates the number of Asian societies that practise dowry. For example in India, Murdock's book mentions only two societies--Punjab and Gujrat--that practise dowry. However, in fact, most of northern India, parts of southern India and most of the upper castes throughout India still practise dowry. All this goes to show that, of the population presently accepting dowry as a marriage payment in the world, Asia has the highest percentage and the largest numbers. Hence, our study focuses on South and Southeast Asia, and on India in particular. In that case, it becomes difficult to accept dowry merely as a "pre-mortem inheritance" or "diverging devolution." All the other aspects of the practice, ranging from initial negotiations and bargaining, to holding the bride "hostage" and bride-burning have to be considered.

However, economic analyses of dowry has been hindered by the lack of data. There is a tendency among respondents to conceal the amount of dowry payment. In the context of India, for example, this has been a very delicate subject since the demanding and giving of dowry are illegal, thereby providing an incentive to conceal information about it. Also, socially too, it is not always desirable to make the information known since giving a dowry might have the connotation that a bride or her family is "wanting" in some sense, and this might jeopardize the chances of other females in the family to get married without a dowry. Given the delicate nature of the subject, data collection has been scanty. In fact most of the data available have been anecdotal [e.g. studies by Kurian(1961), Fruzzetti (1982), etc]. The only systematically collected data, to my knowledge, is that collected by the International Crops Research Institute for Semi Arid Tropics. It is this data set which has been used in this study. We will discuss this in detail, later.

As mentioned above, another difficulty has been the absence of any consistent definition of the term itself. As we have seen, in Europe dowries have been regarded as gift giving. Since gift giving is largely a thing of the past, the analysis of such aspects would be of little practical interest. In Asia, however, it is still commonly practised, and it has important social ramifications on which it is difficult to get data.

Dowries are also very important in the context of the household budget in Asian countries. In the case of families with a large number of marriageable females, dowry payments can constitute an almost unbearable drain on household resources. As such, the question may arise as to what effect they have on decisions regarding productive investment by the family, and the general efficiency with which the household resources are used. One phenomenon that has been observed is that some families go deeper into debt by paying dowry. This is more so if the families have a large number of females that have to be married off before a certain age. Also, since dowry is often associated with hypergamy, families often are obliged to pay more than they can afford. In fact, as has been illustrated by M. Bavinck (1984), planning for a daughter's dowry commences at an early age, and requires substantial investment. "The sums involved are often so large that dowries (or the debts incurred) are only settled years after marriage has taken place." As Bavinck points out, the dowry "competes with potentially productive investments in the framework of a household's decision-making process." Hence we find, e.g., investment in boats (an essential means of livelihood), being postponed because of the need for dowry-payment in Sri Lanka.

Hence, in the absence of systematic empirical studies of dowry, and the fact that dowries constitute significant elements in the family budget of a sizeable proportion of the world's population, such studies are clearly needed.

In this dissertation, two different models of dowry incorporating the features of the practice as encountered in Asia are employed. The literature on bargaining theory and signaling equilibrium under asymmetric information enables us to incorporate the features discussed above and to consider their implications. Each of the models views dowry from a particular standpoint.

In chapter one we provide a brief survey of the literature on dowry. The literature discussed is from sociology and social anthropology. The different standpoints from which dowry is viewed, are discussed. The causes that we have already enumerated for the existence of dowry are discussed in detail. Opposing viewpoints and counter-examples found in the literature are also discussed. Special emphasis is given to the literature that stresses the bargaining and signaling aspects of the problems.

In chapter two, we consider a bargaining model of dowry. The concept of Nash bargaining is used. In the model the amount of dowry is determined through a bargaining process. The families of both the bride and the groom benefit from a marriage. These benefits can be attributed to the respective characteristics of the two families-their income, wealth, and status in society. The personal characteristics of the bride and groom, are also considered in determining the amount of the dowry-- such as their educational qualifications, and age. Bargaining for the actual amount of dowry to be paid is done in terms of these characteristics.

The question of hypergamy is brought out in this context. However, one of the main features of the model is the incorporation of reputational effect of a broken marriage negotiation on the amount of dowry. If negotiations break down, the bride and her family suffer an adverse reputational effect. This makes future negotiations difficult and a higher dowry has to be paid in order to get the bride married off.

Each negotiation is viewed as a 'check' the bride has to go through. It is shown that the higher the number of such 'checks', the higher is the amount of dowry that has to be paid by the family to get her married off. The phenomenon of indebtedness as a consequence of the higher dowry, follows from the model. This model, thus, incorporates the distinguishing features of dowry as practised in Asia. It starts with the social phenomenon that there are adverse reputational effects on the bride if she fails certain 'checks' that are conducted by the groom's family. This reflects the subservient social position of the bride and her family vis-a-vis the groom and his family. It then incorporates the feature of hypergamy that is observed in determination of the amount of dowry and often, the consequent indebtedness faced by the bride's family.

In chapter three dowry is viewed as a signal that is provided by the family of the bride. The dowry is used by the bride's family to signal their wealth to the groom's family. While in chapter two, perfect information is assumed on the part of the two families, in chapter three, asymmetric information is assumed, with the

dowry providing a signal for the true wealth of the bride's family. Under certain conditions, the model yields a separating equilibrium in which each dowry level signals a different level of wealth. A belief function and a signaling equilibrium satisfying it are obtained, where the belief function relates the wealth of the bride's family to the dowry signal.

Chapter four provides a description of the villages in India from which the data used in this study was collected. It tries to examine the representativeness of these villages in the Indian context, and to point out similarities and differences between these villages. It also examines similarities and differences in characteristics between households that paid or received a positive dowry and those that did not.

Chapter five deals with empirical analysis. An empirical model of dowry is developed in which the explanatory variables are the different attributes of both the families of the bride and groom, and also the attributes of the bride and groom themselves. As mentioned earlier, the data set used is the one collected by the International Crop Research Institute for Semi Arid Tropics (ICRISAT) in India. ICRISAT collected micro-level data on socio-economic variables from ten villages for the years 1974/75 -1983/84. Forty households were sampled from each village. The data used here are from three continuously-sampled villages: Aurapalle, Shirapur and Kanzara. Over these ten years, there were one hundred and fifty instances of marriage in these villages, and dowry was paid or received in

seventy-two of these marriages. We, thus, have the dependent variable, dowry, taking either positive values or zero. For this reason,in estimating the model, the Tobit estimation procedure is used.

The results provide empirical support for some of the implications of the theoretical models in chapters two and three. Dowry is seen to be dependent on the different attributes of the families and individuals concerned. One important result that follows from the estimation is that dowry is found to be an increasing function of the age of the bride. Age is taken as a proxy for the number of 'checks' that the bride goes through before marriage. Hence, as the theoretical model suggests, as the number of 'checks' increases, a higher dowry has to be paid to compensate for any adverse reputational effect this might have. The alternative hypothesis of dowry being a "pre-mortem inheritance" is tested against the hypothesis laid down in chapters two and three. It is shown that though a part of dowry might be seen as the share of inheritance that the bride receives upon marriage, inheritance, by itself, will not explain the reason for the existence of dowry.

In chapter six, some conclusions are derived and certain policy implications are examined.

ENDNOTES

1. Societies lacking such transfers have relatively been ignored presumably because their marriage transactions involve less economic calculation and are less motivated by economic considerations.

2. Hypergamy occurs when marriage takes place between individuals who do not have the same status in society. In most cases there is social status improvement through marriage.

CHAPTER 1

A BRIEF SURVEY OF LITERATURE

1.INTRODUCTION

In this chapter, we try to bring together the different views on dowry.The literature surveyed is from sociology and social anthropology. We find that the authors have not been unanimous in trying to explain dowry. As we have noted in the Introduction, several viewpoints have been postulated. We will examine each of these in turn,and try to see how each of these can explain dowry as it is practised today.

2. DOWRY VIEWED AS "DIVERGING DEVOLUTION":

Our discussion of the existing literature on dowry begins with the widely cited notions advocated by Goody (1973,1976). Dowry, according to Goody, is a form of "diverging devolution", a type of property inheritance in which both sons and daughters inherit some share of the parental wealth. Dowry is that part of the family's wealth that passes on from father to daughters. As such, it involves the transmission of male property to a woman, and through her, to a different family. Hence it is "diverging devolution." Dowry, then is that mode of diverging devolution in which daughters receive their share upon marriage. In those societies

in which a family's standing is determined to a great extent by its wealth, that family must be able to pass on that wealth, to all its children, regardless of sex. Goody argues that dowry involves a redistribution of property at marriage and must consequently be analyzed in the wider context of property relations. Such relations however, are themselves embedded in a social order. Thus dowry, a form of diverging devolution, is associated with bilateral systems since inheritable wealth is not retained in a single family. Bridewealth, on the other hand, involves "lineal devolution" (Comaroff).

Goody has shown that diverging devolution is prevalent, primarily, in highly complex, stratified societies. In fact, sixteen of the twenty-four dowry-giving societies mentioned by Murdock (1981) have complex, stratified cultures, based primarily on occupational differentiation. From this point of view, then the explanation of dowry hinges on the explanation of diverging devolution. This, Goody has done, in terms of the greater productivity of plough agriculture and the consequent social stratification and competition over wealth, all of which produce a tendency to retain valuable productive resources in the direct family line. In Africa, hoe agriculture precludes marked wealth differences, so that hierarchization is limited and any one marriage union is much like any other with respect to the implications for status. In Eurasia, however, intensive plough agriculture leads to major differentiation and therefore there is social stratification. Under these

conditions, "the endowment of a bride is a corollary of upward mobility: it serves to maintain or improve her standing and mediate inequalities between affines. In short, Eurasian dowry is associated with hierarchy and hypergamy, African bridewealth with their absence" (Comaroff, pg 78). We will come to the concept of hypergamy later on.

However, Goody's explanation seems to be incomplete. It fails to capture variations in civilizations, with diverging devolution and where dowry is given, in terms of content, size as well as incidence. As Harrel and Dickey (1985) point out in their paper, we do find that in "some societies, a daughter gets her share at the time of marriage, whereas in others, she, like her brothers, must wait until her parents die." The latter is also diverging devolution, but it is not dowry. There are cultures where dowry is small and makes up the daughter entire inheritance (e.g. Japan in the past, China); wheareas there are other cultures were dowry is small and does not constitute the entire inheritance (Sicily, etc)

Harris (1979) has shown that "the institution (of dowry) cannot be understood merely as a mechanism of property devolution." According to him, it is rather a form of "pre- mortem disinheritance " since the women's share of family property "often excludes land, and is therefore 'inferior' to that of the men."

However, Harris' theory has been criticized by Harrel and Dickey (1985) who cite counter examples showing that there are societies where the woman's

share is equal to or even greater than that of her brother. Hence, the "dowry cannot function to disinherit the female." The authors further state that there are societies in Africa where the woman receives none of her natal property. So the problem remains as to why the complex Eurasian societies settle their daughters' claims by giving them anything at all; that is, "why does it take some kind of dowry to disinherit them while in African societies the daughters are disinherited from the beginning."

In the light of the marriage structures that are prevalent in South Asia, the "diverging devolution" thesis becomes questionable. A corollary of this thesis would be that dowry is generally viewed as leading to a stressful relationship among kin, since it involves the cession of family property. Thus "conjugal bonds and official linkages... acquire social primacy notwithstanding the existence of descent ideologies." But, there are marriage rules where dowry as "diverging devolution" would not hold. For example, marriage arrangements of various kinds among cousins may have the effect of retaining property within a group or returning it to a group that originally held it, e.g. in marriages of the son to the daughter of the father's brother "any value circulated is retained within the wider boundaries of an agnatic grouping, since wife-givers and takers are all members of it." (Comaroff, pg 12). Again, Yalman's (1967, ch.16) description of marriage among Kandyan Sinhalese, shows that cross-cousin marriages (MBD or FZD: i.e., marriage with

the daughters of mother's brother or father's sister) tend to re-unite property that was once divided between the brother and sister of a single generation.

However, dowry is not merely a mechanism of property devolution. It is primarily a transaction accompanying marriage--that is, it is a payment at marriage. Authors have tried to bring all marriage payments into a single explanatory theme. Spiro (1975) distinguishes four possible types of prestation: dowry and dower involve property which is brought to a union, the former being provided by the bride's family and the latter by that of the groom; bridewealth is tendered by the husband's group to the kin of his wife, while groomwealth moves in the opposite direction. These four types he says, can be reduced into two. According to him, groomwealth has no recorded empirical instance and can be ignored (though Tambiah (1973) discusses transactions related to groomwealth in South Asia). Also, dower and bridewealth are essentially similar, since their source is the same.

Spiro's own explanation about why marriage transactions occur is that they occur since ".... the cost benefit ratio of marriage to its principle is unbalanced ... the type of payment is determined by which of these principles--bride, groom, bride's family, groom's family--is most disadvantaged." It follows that, when the cost-benefit ratio is balanced, so that no party tends to lose or gain, marriage transactions are unlikely to occur. Thus, the absence of groomwealth can be explained by the fact that there are no regular situations in which a man's "grouping

suffers disadvantage by the alienation of his productive and reproductive powers"

(Comaroff, pg. 4).

As Comaroff (1980) points out, Spiro's scheme would then explain the

"associations frequently made between dowry and negotiation of status on the one

hand, and bridewealth and the alienation of rights in women on the other."

However, several authors have provided instances in which this is not the case.

Thus Rheubottom (1980) demonstrates that dowry in Macedonia did not enhance

the prestige of the bride and her family. By Spiro's logic, bridewealth should occur

"where marriage alienates a woman's productivity and/or reproductivity to the

husband's grouping." Case studies in Eastern Indonesia have shown this not to be

the case. [Barnes (1971), and Strathern(1980).]

3. DOWRY AND BRIDEWEALTH:

Until fairly recently, anthropologists have regarded dowry as the inverse of

bridewealth. This is no longer believed to be the case, since these two marriage

transactions differ in more ways than merely the direction of payment. Tambiah

(1973) states that the distinctive features of the dowry system are by no means the

reverse or mirror image of those of bridewealth systems. According to him,

wherever dowry is paid, wealth is not transferred in one direction and women in

the other, for both wealth and women travel in the same direction. More

importantly, the one cannot be held to be the reverse of the other since men do not

receive dowries from their wives' families and thereafter use them to secure husbands for their sisters. Nor do parents themselves receive dowries on behalf of their sons and then use them for their own purposes.

It is such vital differences that reveal the essential features of dowry. Dowry is property given to the daughter to take with her into marriage. Technically it is her property and in her control even though the husband usually has rights of management. A husband cannot transfer the dowry to his sister, partly because he requires his wife's consent, but more importantly, because it is against the spirit of the dowry institution, which is that the dowry given to a wife and in her legal possession should form part of the conjugal estate, to be enjoyed by husband and wife and to be transmitted in time to their children.

In sum, transactions in the same direction may be destined for different social persons. In Africa, bridewealth goes not to the bride, but rather to her kin; it is the wealth for, not to, the bride. On the other hand, dowry, in the usual sense goes not to her kin, but to the bride herself, and sometimes to the husband. Bridewealth and dowry, then, are very far from being mirror opposites.

Goody (1973) has discussed the difference between brideprice and dowry. Brideprice forms a part of a circulating fund that can be used when the recipient family itself acquires a daughter-in-law. Dowry, in most cases, is not used in such a way- i.e., the dowry received is generally not given away by the recipient family

during its own daughter's marriage (we will discuss this aspect, in detail, later). As mentioned earlier, in many cases, especially in Europe and in the tribal regions of Asia, the dowry forms part of a conjugal property--it is given to the bride even though her husband may have managerial rights. Also, in Europe, the dowry often consisted of land or income-generating assets . It has been suggested (Friedl,1967) that this is what generated the woman's domestic power. Brideprice, on the other hand, consists solely of movable property.

This distinction of Goody and Tambiah between brideprice and dowry has been contradicted by many authors, especially in the context of India.

Hooja (1969) gives us an account of the dowry system in India that directly contradicts Goody's major assertions: "A more popular saying is that the bride has brought a dowry for her 'new home'. " But it is not the truth; "the fact cannot be overlooked that when a son is married, he is not free to regard the property that his wife brings to be exclusively his own." Grandparents, parents, aunts and uncles, brothers, sisters assume to themselves the right to see all articles that his wife brings, and in the majority of cases, even the keys to the boxes containing ornaments, clothes and other articles are handed over to the mother-in-law of the bride. The mother-in-law enjoys full authority to use the dowry. If the daughter-in-law tries to interfere in the discretionary choice of her mother-in-law, it leads to disagreement and disruption in the family. It is apparent, therefore, that

a new bride in the family has little volition to exercise, and in this state of affairs cannot regard her own things to be hers.

It is clear from the above analysis, that the relatives of the bridegroom enjoy the property brought by the bride, the major share being enjoyed by the mother-in-law and sister-in-law. If money is given also with other articles of utility, it goes to the head of the family.

Hershman (1981) shows that, in the Indian Punjab, the dowry consists of "non-consumables",e.g. gold ornaments, embroidered clothes, utensils, etc, that are constantly recirculated in further dowries. Tambiah's argument that dowries are not recirculated because sisters are generally married at a younger age than her brother and, therefore, that the dowry brought by the brother's wife cannot be employed in the dowry of the sister is "spurious in a country where a woman's child-bearing continues during a period of twenty years or more"

Also, even if the dowry of a daughter-in-law is not employed in the marriage of a daughter (and Hershman would argue that it commonly is), "then every mother gives part of her own dowry, especially, the gold ornaments, to her daughter at her marriage and also to her husband's sister's daughters."

As we have already discussed, Goody and Tambiah (1973) argue that, while brideprice is seldom returnable at the dissolution of a marriage, dowry always is. However, Hershman gives counter examples to show that dowry is never returned

at the dissolution of a marriage. This is because "the dowry is not the possession of the daughter but that of her husband and more formally in the hands of her husband's parents."

4. DOWRY VIEWED AS "PRE-MORTEM INHERITANCE":

Another hypothesis of dowry, related to Goody's "diverging devolution" is Tambiah's "pre-mortem inheritance." Tambiah unites the use of ethnographic studies and legal sources on inheritance to create a persuasive argument that India is a land where female rights to property are proclaimed and actualized.

As he puts it,--"thus by and large, we can say dowry in India and Ceylon stresses the notion of female property (stridhanam), and female rights to property" which is transferred at a women's marriage as a sort of "pre-mortem inheritance; dowry also connotes in complementary fashion, that property is transferred together with the daughter so that she is enabled to enter into marriage." In other words, a daughter and her dowry become vehicles for setting up a relation of affinity between the bride's family and the husband's family. Dowry "is dressed up as a 'gift' that accompanies the 'gift of a virgin' (kanya dana)."

Tambiah points out that in the Dhararashastras (old Indian religious texts) there is a notion of female property (stridhanam) which would seem "complementary to the more heavily accented notion of male property rights... In Ceylon the equal rights of males and females to the same categories of property

was traditional granted and accepted." Thus, "dowry is intimately connected with the double transmission of property through both males and females." The woman receives her 'stridhanam' at marriage. It consists of moveable and personal possession such as clothes, ornaments, utensils, etc. As Tambiah puts it--"The stridhanam is jurally speaking a woman's exclusive property, and may be regarded as a substitute for the right of inheritance." According to him, "her husband and relatives-in-law acquire no interest therein, and her daughters are expected to inherit it after her death." Thus, since a woman does not usually inherit land from her natal family, she is compensated for this by her dowry at the time of marriage. The dowry is thus her rightful inheritance in the form of movable assets.

The notion of equating dowry with inheritance over which only the bride has sole rights, has been criticized in the literature. Madan (1965), describing a Kashmiri village in India, specifically does not make this connection. He comments that "In practice, parents-in-law show immense interest in her stridhanam, and may take away the best of her personal possession to give to their own daughters." Sharma (1980) agrees, saying that " a daughter does not gain control over (her dowry) in the way the son gains control over land on the partition of his father's estate. The dowry is transferred to the bridegroom's parents." Sharma also says that the idea that women inherit movable property at marriage in lieu of immovable

property which their brothers receive later is a "convenient fiction which serves to obscure a real difference between men's and women's relationship to property."

According to her, anthropologists have accepted it because they have paid more attention to "legal codes and summaries of custom than to the process of gift making at wedding and partition at funeral." Dowry can be regarded as inheritance only if we use the latter term in a very general way. In such a case, as Sharma puts it--"...a birthday present to my daughter purchased out of the savings in my bank could equally be regarded as pre-mortem inheritance." A daughter never receives all the movable property of her parents. "The goods allocated to them as dowry are usually made or bought specially for the purpose and the parents' own goods and chattels remain to be inherited by the sons" Dowries are not conceived as shares in property, since different sisters are married and allocated dowries at different points in time. The value of any sister's dowry will depend principally on the wealth and circumstances of the household during the period immediately preceding her marriage. Also, while parents will not wish to be unfair to any particular daughter, ensuring that the bride has a dowry of similar value to those received by her sisters is not the prime consideration at the time of marriage. More important questions are how much the bridegroom's family will expect and how much is it necessary to give in order to maintain the family's prestige. A daughter does not take her parents or sisters to court on the grounds that she had not received her fair share of the family

property. Thus in practice, "dowry is treated as a passport to a good match, a high-status husband, and the favour of one's in-laws." We will come to this latter aspect of dowry later.

Tambiah (1973), in his broad categorization of dowry as a pre-mortem inheritance, has ignored the significance of regional and social variation in types of marriage payment. He dismisses such differences as less important than the overall similarity throughout South Asia: the recognition of female property rights through the concept of stridhanam. For Tambiah's contention to work, dowry (which he equates with stridhanam) must be the general form of marriage payment and it must represent wealth that stays under the control of the female involved. As Miller (1981) points out, "neither of these pre-requisites is completely met throughout India". First, other forms of marriage payment and marriages involving no payment whatsoever are statistically preponderant in India. Second, in many instances in northern India, little of a woman's dowry remains under her control. We have already discussed the latter aspect. Miller gives instances of different types of dowry and bridewealth in India, contending that it is only in certain cases that dowry can approximate the meaning of 'stridhanam'. In northern India, for example, she shows that there are several cases of dowry being given in the same villages as bridewealth--but there is just one such instance in southern India. The reason for this could be that northern Indian villages are multicaste. In northern

India, bridewealth is sometimes the custom and "is at other times resorted to in case of emergency" (when a man is of dubious wealth or health). In southern India it is more widespread and even practised among the wealthiest.

In northern India, a dowry wedding implies that the bride's side are the givers and the groom's side the receivers. There is very little reciprocity between the two sides; "in fact the less the groom's side gives, the 'better' the wedding." In southern India, where dowry is given, there is a great deal of reciprocity between the two parties. This is a kind of "dowry-bridewealth exchange". As has been mentioned many times earlier, in northern India, a major portion of what is given by the bride's parents goes to the groom's family, who may, in turn, use it as dowry for their own daughters. It is only in southern India that dowry is similar to the concept of stridhanam--"wealth given to a female which remains in her possession and under her control." In the north, dowry is used as a "vehicle to secure a husband from a good family in order to shed glory upon the bride-givers. In the south, dowry is more a gift to the bride for her own welfare and protection." The latter is brought out more clearly if we consider the fact that Kerala in South India, where matrilineal tendencies are strong, is also a region where dowry is the predominant form of marriage payment.

We now discuss some other aspects of dowry (which, we have already mentioned in passing earlier), that show that it is not just 'stridhanam'.

5. DOWRY AND BARGAINING:

The first aspect that we consider is the bargaining that goes on between the two parties in deciding on the dowry amount. If dowry were merely a question of pre-mortem inheritance, then bargaining would not come into it. However, in almost all cases where "hypergamy" exists, we find that bargaining goes on. We will discuss the question of hypergamy later. Below, we cite a few cases in the literature, where the bargaining aspect of dowry is discussed.

Yalman (1967) says of the Kandyan Sinhalese that female inheritance is "merely a reflection of the general descent ideology" while dowry is "the result of a bargain" struck in the negotiation of status relations. Yalman notes that "a dowry is adjustable in size. Two daughters will not receive the same dowry. The size depends upon the status of the groom and is decided upon after heavy bargaining." Thus, female inheritance and dowry have two different purposes among the Kandyan Sinhalese. By the former, both sons and daughters inherit in the same fashion. "Dowry, on the other hand, is the result of a bargain and has a specific intention: that of linking the daughter, and hence, also her family, with a particularly desirable son-in-law."

Fruzzetti (1982), in her study of Bengali marriage rites in India, clearly distinguishes between the inheritance of the bargaining aspects of dowry. As she puts it, "Bengali marriage.. consists of two major elements: the gift of a virgin

(sampradan) and the payment of a dowry (pan)." The gift of a virgin as she puts it, "is a ritual of purely sacred connotation". Dowry precedes the marriage ritual itself, and "is an activity which can be understood in economic terms alone." Dowry is made up of 'dabi' (a rightful, obligatory gift) and 'dan' (a bestowal, a "perfect" gift). Fathers offer 'dan' to their married daughters. These gifts are freely given without any demands being made by the groom and bride. 'Dabi' on the other hand, is what is asked for by the groom's family. It may consist of anything, ranging from cash to clothes to jewelry, etc, and is negotiable. Gifts mark a marriage link between two groups and establish the possibility of further ties. Dowry is one of these gifts, but the giving of dowry itself is a composite exchange with distinct portions going to the groom, the groom's father, the bride, and the couple as a unit. The gifts themselves are hierarchized in terms of sacred status, political influence, and economic power. "The nature of the first gift, the bride is negotiated separately from (though with a direct influence on) the dowry". The dowry in turn may "dictate the final decision on the acceptance of the first gift." When the offering of a virgin is considered, the giver bears in mind that the receiver will demand a second gift if they consent to the first (the virgin). There is a difference in the nature of the two exchanges: the first is a sacred gift, the highest possible, and can be neither argued about nor contested, "whereas the second gift

(pon) is a 'dabi', a demand rightfully made by the groom in return for accepting the bride."

Fruzzetti next addresses the question "If the gift or the virgin is the highest form of giving, then why does the dowry play such an important role in accepting or rejecting the girl?" In answering this, the author looks at the attitude towards women in Bengali society. As she puts it - "It is believed that daughters should be married and not kept in their father's house too long." Since a woman has to be a mother before she can become a complete person, the foremost duty of a father is to find husbands for his daughters. The presence of unmarried women is inauspicious for the men of the house and taints the "ghar" in the eyes of those who have married off their daughters and who may be willing to take women for their sons. The purity of one's women has to be maintained and the best way to ensure this is by giving them away in time.

The possibility of "having one's women refused is recognized and feared because rejection decreases the prestige of bride givers."

Fruzzetti notes that "haggling over the dowry proceeds much the same way as haggling over goods and services in the bazaar." Most often, the question of dowry is the cause for terminating negotiations. When that happens, the girl's family starts to look for a new groom. However, according to Fruzzetti, this is not at all a very pleasant situation for the bride and her family. As she puts it - "if

negotiations are broken off and a girl is refused, her chances for a good alliance decrease. Other houses will demand a higher dowry, citing the previous refusal as justification."

Mies (1980), in her study of Indian women, also said similar things. In her studies, she finds that the situation of conflict arises in the case of studying and working women at around the twenty-second year of her life. "If a woman is still unmarried after this age, then with growing age and rising educational and professional status she is deviating more and more from the culturally prescribed norm of marriage." Society prescribes a "correct marriage age" (usually twenty-two or twenty-three years). If a woman is unmarried after this age, society imposes negative sanctions. "An independent, unmarried woman who is not living in religious celibacy is supposed to be an immoral woman and to lower the status of her family." She impairs, for example, the marriage prospects of her sisters and brothers. The family, thus, tries to marry her off, often by paying a high dowry.

If one compares the data on the expected and actual marriage age as well as educational qualification, one can conclude that many women are aware of these tensions and fears. In Ramanamma's (1968) study, 70% of the women spoke in favour of a marriage before the age of twenty-two. Those with a bachelor's degree and above twenty-three years of age knew that further education would have a negative effect on their marriage prospects and increase the dowry amount.

"Although many young women rebel against the degrading dowry system they are still not in a position to emancipate themselves from it." If they want to get married - and marriage is, as we have seen a social must - they must yield to the social pressure of their class and see to it that "they collect the price which is demanded for their entry into a respectable family." In fact, working women often contribute towards their own dowry. Mies discusses several case studies showing this connection between age, social sanction, and dowry. For an older woman (about thirty-two) the father must offer a high dowry (Pg 210). In one case, a girl had crossed the age at which a "decent" girl was married and a dowry of Rs 40,000 was demanded (Pg 238). "According to the system of arranged marriage, a girl must be married early so that she can adapt herself to an unknown man and his family without difficulty." Unmarried women, who have crossed the ideal marriage age are constantly plagued by a feeling of "guilt towards their fathers." They know that "they are a burden for the father, that his greatest worry is their marriage and the payment of an adequate dowry."

6. DOWRY AND HYPERGAMY:

One of the reasons why bargaining over the dowry amount is so important is that the practice of dowry is related to "hypergamy." Hypergamy relates to marriage to someone of higher social and economic status than oneself. As Tambiah (Pg 69) puts it, dowry may be conceived of as a direct exchange of status

for wealth. "It is a superb pawn to use in the formation of marriage alliance and in pursuing the game of hypergamy." Freedman (1966) says that a family makes considerable economic sacrifice in paying a dowry, because "their own status is at stake; a bride-giving family must, in order to assert itself against the family to which it has lost a woman, send her off in the greatest manner they can afford."

The process of giving dowry links the bride and her family with a desirable husband and son-in-law. Thus, a family of lower status but not necessarily of inferior wealth, attempts to raise its position and prestige by contracting a superior marriage for its daughters and sisters. We thus expect dowry to occur in situations where there is social stratification because of economic wealth and competition as to whose wealth is superior. A high value is placed in such societies on upward social mobility and this is achieved, to an extent, through dowry payment. It is this aspect of dowry that is seen in all the cultures where dowry-payment is accepted. We find that in Europe, families protected their lineage and property through dowry "endeavoring to maintain or enhance their class". A history of dowry in Europe is discussed in Kaplan and we find that overtime, as societies became more complex and hierarchical, the dowry system replaced brideprice (articles of Owen-Hughs, Reimer). In fact a woman's fate tended to hang on the size of their dowries: the greater the sum, the "better" they married, and the greater their status vis-a-vis their husbands and in-laws.

Authors, eg. Schneider(1980) and Davis (1977) have suggested that the practice of dowry has impeded the agrarian transformation and economic development in some cultures. Women have been engaged in preparing their trousseau , and this has made female labor unavailable for income-producing activities.

Also, dowries have been used to create economic and social alliances between families. Lambiri-Dimaki (1985) finds that in Greece dowry was a powerful status symbol as late as in 1970's. There was a "dowry inflation" in Greece. This was because there was a great demand for an "urban son-in-law" and competition among the brides' families increased the average dowry from $3000 to $4500 in five years.

This hypergamous aspect of dowry is still very much prevalent in the Asian countries.

Yalman (1967), has discussed this in length in the context of the Kandyan Sinhalese. He notes that, when both parties are simular in wealth and status, there is usually a balance in marriage gifts. However, the greater the status-difference, the larger the dowry. "It is the position of the son-in-law that dictates both the timing and size of the dowry." If he is an equal, and a member of the family then the girl will get nothing. If he is superior and demands dowry then some action will be taken: if he is a stranger or a very distant relation, then both he and his family

will insist that a dowry deed be actually signed and given to the girl. Dowry is thus paid when the groom is somehow 'superior.' But this superiority is not merely one of rank. He may be superior because of his position and influence. "He may be a Village Headman, or a Village Committee Chairman, or he may be a petty government servants.... The combination of prestige, influence and some stable income make such men the most desirable sons-in-law." Dowry may be paid, however, even when the son-in-law has no such position but is only richer than the father-in-law. It is the couple themselves who must be 'equal' in wealth. "The dowry brings the woman up to the same level as the groom." Hence, as long as a girl of a poor family gets enough of a dowry to raise her up to the level of the groom, the union will be considered successful even though her natal family may be impoverished as a result.

In India, according to some authors (eg. Kapadia(1968), Mies(1980)) the dowry system has been the result of hypergamy. Traditional Indian law allows the marriage of a girl with someone of equal and higher status only. The groom, on the other hand, is able to take a bride from a lower status family. A father who wants to have a son-in-law from a higher or richer sub-caste is often ready to pay fantastic sums as dowry.

Mandelbaum (1970) in his study of Patidars in Gujrat, India, notes that each Patidar father must give a dowry in order to get his daughter suitably married into

a higher section. He notes that throughout India in recent years dowry costs have risen sharply in the "heightened status competition for educated bridegrooms." In fact, large wedding expenses are intended to assure the social welfare of a family's children and to enhance the family's reputation.

Kurian (1961) finds that if daughters are not well educated and if they are below average in their physical appearance, it is rather hard for parents to find a suitable husband without payment of a dowry. The rates go up according to the academic and economic position of the bridegroom - ranging from Rs 1000 for a matriculate to Rs 25,000 or more for a well-paid, technical graduate.

Mies (1980) notes that the amount of dowry varies according to class and region. Rich landlord families of Andhra Pradesh pay dowries up to Rs 100,000 for a doctor or rich businessman. The poor are not exempt from paying dowry either. A clerk in Punjab, whose income was Rs 300 per month, spent Rs 15,000 for the marriage of his daughter.

Similar figures are given by Van Der Veen (1971) in his study of the Anavil Brahmans of Gujrat. In 80% of the marriages, dowry was given and the amount ranged from Rs 2000 to Rs 6000 in cash. Girls with academic training brought in smaller dowries than girls with less extensive education. The reason given is that the former would be able to earn a living after marriage - since her in-laws gain a right to her lifetime earnings, they demand a smaller dowry at marriage.

7. THE DETERMINANTS OF DOWRY:

Ghosh (1926) summarizes the characteristics of the families that are considered during marriage negotiations which determine the amount of dowry. The prestige of the girl's and boy's families is very important. This is followed closely by the unblemished character of the extended families to which the bride and groom belong. Land-holdings, education, personal features, family connections, nature of employment, etc. are all taken into consideration. In fact, the higher the relative position of the groom and his family with respect to each of these characteristics, the higher is the dowry payment.

Dowries are composed by various items -cash, jewelry, clothes, for the bride, groom, and the entire family of the groom; household items eg. refrigerators, utensils. Depending upon an urban or rural setting, the composition differs. In an urban area, it is not inconceivable for the groom's family to ask for a house, car, etc ; in a rural context, this might be translated into a bicycle, land, and so on.

8. DOWRY AS A SIGNAL FOR WEALTH:

It is no wonder, then, that such a marriage arrangement would be accompanied by a display of wealth by the bride's side. Harrel and Dickey (1985) see dowry as a social statement. We may thus expect dowry to occur in situations where there is social stratification and therefore the need for diverging inheritance and especially where a family wants to display its wealth publicly. This should occur

when: (a) there is unequal status among those families who frequently interact and intermarry; (b) this unequal status is partially or wholly determined by economic wealth; and (c) access to this wealth varies sufficiently over time that there is "conscious competition for wealth and its concomitant status." Families are thus concerned to validate their social status by the display of wealth. The dowry is then to be seen as a public statement of a family's wealth and status meant to be noticed, discussed and taken into account whenever questions of relative status arise, "as they will in fluid and competitive status systems."

9. DOWRY AS A COMPENSATION:

The idea that dowry is a compensation paid for marrying daughters into higher status families has been carried one step further by some authors. Instead of focusing on the honor/prestige aspect, they concentrated on the economic aspect. Dowry is seen as a payment made to the groom's family for accepting an "unproductive" woman. It is a way of compensating a woman's husband's family for the burden of supporting her for the rest of her life. Divale and Harris (1976) describe dowry as "compensation for the cost of maintaining an economically burdensome woman or as payment for the establishment of political, economic caste or ethnic alliances valuable to the bride's family." In other words, the bride's family stands to gain from the marriage and the groom's family loses, so compensation has to be paid. Spiro (1977) has mentioned a similar idea in trying to

explain marriage prestations - not only dowry and bridewalth, but also the rarer "male dower" that he found in Burma occurring where "the cost-benefit ratio of marriage to its principals is unbalanced.

Miller (1981) finds that in India, there is a correspondence between female labor participation and marriage costs. She notes that among the Northern propertied class, female participation in the labor force (FLP) is low and marriage costs are high. Among the unpropertied in both Northern and Southern India, FLP is high and marriage costs are low. Among the Southern propertied, a low-medium-high FLP corresponds to a low-medium-high marriage cost.

Epstein (1973) found that in two villages of Karnataka state in India, there was a tendency to replace brideprice with dowry.

Rajaraman (1983) explains this in terms of a declining FLP in these villages on the basis of census data.

Harrell and Dickey, however, do not agree. They use Murdock's "Atlas of World Cultures" to show that there is no connection between female labor participation in agriculture or animal husbandry and dowry payment.

10. A SUMMARY:

Let us, now, briefly summarize the literature that we have discussed. Broadly speaking, there are two main opposing views regarding the existence of dowry. On the one hand, we have the traditional view that looks at dowry as female

inheritance, where the woman gets her share of the property at marriage. On the other hand, we have the view that regards dowry as the outcome of a bargain struck between the families of the bride and the groom after a marriage negotiation process. The bargaining strength of the household of the bride is smaller than that of the groom, mainly because of social sanctions placed on an unmarried woman and her family. The dowry system that prevailed in Europe conformed to the traditional view; the system , as it now exists in Asia, is mainly of the latter type.

CHAPTER 2

THE DETERMINATION OF DOWRY THROUGH A BARGAINING

PROCESS

1. INTRODUCTION

What comes out of the literature is that the dowry system cannot be explained by any single cause. It is the result of an interaction of economic and social forces--each of which plays a very important role in determining the ultimate amount of dowry that is paid. For example, for reasons stated in the Introduction, any general explanation of dowry would have to take into account the idea of hypergamy and see how inheritance and bargaining between the two families ultimately leads to an agreement about dowry.

Marriage negotiations are generally initiated by the father or guardian of a marriageable girl. A girl's father may advertise to his relatives and friends that his daughter is available for marriage. He might use suggestions of relatives regarding the search for a groom. Sometimes, professional help is also taken, to supply information.

Initiating an inquiry with a particular family does not mean that the girl's guardian is obligated to follow through with his intentions. It is, however, necessary to get a favorable answer to the inquiry from the groom's house before a second step can even be considered. Once negotiations are in full motion and there is enough interest on both sides, questions are asked about dowry. But before any details can be discussed, the bride must pass certain tests : her appearance must be pleasing, her height proper, her bearing good. Her educational level, accomplishments, musical abilities, culinary skills, reputation, horoscope, etc. are also taken into consideration. These are essentially done by arranging an interview, where the groom's family comes to see and talk with the bride. Fruzzetti (1982), discusses the process in detail.

If the bride passes the "checks", the question of dowry begins to be discussed. The expectations of the groom's household are clearly stated, based on the characteristics of the bride they have observed. Besides this, the specifics of the dowry are stated--how much of it should be in cash, in goods (jewelry, household items), or in other property. The groom's side will ask for a higher dowry than they really expect to get. The bride's side makes a counter-offer basing their offer on the attribute of both the groom and the bride. An offer would typically be high if the status/wealth of the groom's family is high, and/or if the groom himself is well-educated and has a good job. A very important reason for asking for or

offering a high dowry would be the speed at which the bride's family wants the marriage to go through. If the bride has undergone a fairly large number of checks which have not ended in marriage, that signals to the groom's family that there is something that is not quite right about her. The bride's family, too, is aware of this adverse reputation, and hence offers a high dowry. As we have indicated in the survey of literature, this adverse reputational effect seems to be of primary concern in the settlement of a dowry in the Asian countries. Fruzzetti (1982), Sharma (1980), Miller (1987), Hooja (1969) and Yalman (1967), all of whom write about the dowry system in India and Sri Lanka, stress this point. For a woman, marriage is still the only honorable and viable alternative in most households, and it becomes the primary responsibility of the father and other members of the household to see that the woman gets married . This urgency of marrying off one's daughter is traditional and is probably the result of the writings of the old Hindu scriptures. These texts stress the need for the "purity" of women at marriage and stress that "kanyadan" (gift of a virgin) is the most sacred duty of the father of a daughter.

A direct corollary and implication is that the earlier a daughter can be married off, the better for the father and the household. Terms like "arakshaniya" (a woman who cannot be protected) evolved from this sense of urgency of a daughter's marriage. In fact, one of the main reasons for the development of the polygamous system of "Kulinism" stems from this. Tambiah (1973) discusses this

system of marriage. This system, prevalent among the Kulin subcaste of Rarhi Brahmins, allowed the marriage of Kulin women only to Kulin men, the reverse not being necessarily true. Thus, Kulin men could take brides from three other subcastes so the women could be in excess supply. As Tambiah puts it, "this superfluity, together with the duty incumbent on respectable Brahmans of getting their daughters married before puberty," has led to the practice of 'Kulinism' by which "a man of a Kulin subcaste would often marry a large number of brides, whom he never intended to support, in order to remove from their parents the risk of failure to get their daughters married."

The "code of Manu", as discussed in Tambiah (1973) also has the stricture that, of the two types of transfers made at the time of marriage, dowry is the most honorable. Brideprice amounts to the sale of a daughter, and higher castes should, therefore, refrain from it. Given these two traditional strictures--that it is the sacred duty of the father to marry off his daughters at an early age, and that dowry is the respectable from of marriage payment--it is not surprising to see a family being ready to pay higher dowry as the age of a daughter increases, in order to avoid the adverse reputational effect.

This phenomenon, however, is not confined to the higher castes. There has been a recent trend toward "Sanskritization" among lower castes, in which the latter have tried to emulate the customs and rules of the higher castes. (Rajaraman, 1983).

As Rajaraman has observed, there have been increasing instances where groups of people who traditionally had brideprice as a form of marriage payment have now taken up dowry. This has also been observed by Ahmed (1987) in the context of Bangladesh. Thus we find that the desire for a good reputation, or, conversely, the desire for avoiding bad reputation, has a significant effect on marriage negotiations and in the settlement of the actual amount of dowry that has to be paid.

Though reputation has a significant effect on dowry, there are other considerations, too, about the bride and her family that are taken into account in the process of negotiations. The educational level and other accomplishments of the bride are also considered, e.g., the family of a working woman could get away with paying a lower dowry. However, as Hooja (1969) has shown, there is a trade-off between education and age--girls and their families often get uncomfortable if marriage has not taken place by the time the girl is twenty-two or twenty-three. They are aware of the fact that later on they would have to pay a higher dowry.

Given the attributes of the bride and groom, haggling over the dowry amount proceeds and bargaining goes on until there is a convergence. We will discuss these attributes in detail later. There is, however, no guarantee that negotiations will end in marriage. The families of both the bride and the groom can break off negotiations at any time.

Both families have certain expectations about marriage. These expectations are formed on the basis of their own attributes and other social norms. Both families are concerned with the benefits that they can derive from the marriage. They will not accept a marriage if the standards that they set are not met. Hence, both families have a reservation level of utility that they derive from marriage and they will not go below this reservation level. If the reservation level is not achieved, the negotiations are broken off. One of the main reasons for negotiation to be broken off is disagreement about the amount of dowry. This has been discussed in Fruzzetti (1982) and Sharma (1981). The bride's family may find that the amount of dowry demanded by the groom's family is too high and the scope for reducing the amount is small. Also, the bride's guardians may not like the people in the groom's household. These reasons are sufficient for the bride's family to withdraw the offer of alliance. The groom's family can also terminate negotiations. Again, one of the main reasons for terminating negotiations is that they are unhappy with the amount of the dowry offered. Subsequent to the termination of negotiations, both families return to the marriage market and begin looking again. However, the effect of broken negotiations on the two families is not the same, as far as future alliances and negotiations are concerned. The groom and his family are not affected by it--they just go back and begin the search again. No social stigma

becomes attached to them since, as is borne out by the empirical evidence, an increase in the age of the groom does not jeopardize his chance of marriage.

The bride and her family, on the other hand, are affected adversely by the broken negotiations. The family begins to look for a new groom, keeping in mind that since the girl has been refused or negotiations have fallen through, her chances of a good alliance have decreased. Future grooms' families will demand a higher dowry, citing the previous refusal as justification.

Essentially then, the benefits and costs that can be derived from the marriage are considered by both sides, and the marriage takes place only when there are net benefits to both sides.

The model that we are about to lay down fits this description of negotiations over the dowry. Specifically, we analyze the problem of determination of dowry in the context of a model of bargaining that incorporates reputational effects. The amount of dowry that would be paid is the outcome of a bargain between the families of the bride and the groom.

As we have mentioned, empirically we find that the longer the bride remains unmarried, the lower becomes the probability of her getting married. In fact, the dowry amount is often positively correlated with the length of the unmarried state, implying that there is an adverse reputational effect associated with the fact that a bride is unmarried for a long period of time. It reveals the fact that there are some

characteristics that make the bride unsuitable in a match--that she has been "checked" a number of times, and found "wanting." This does not imply that she is necessarily unsuitable for the present match--only that it is difficult to remove the social stigma without a considerable dowry.

The dowry amount is, however, not determined by the reputation effect alone. An arranged marriage takes place because both parties gain from such an arrangement. Benefits accrue both to the family of the bride and that of the groom. We now discuss these benefits from marriage.

The most important benefit to the bride and her family from the marriage is the fact that they do not suffer from adverse reputational effect. As we have discussed earlier, a social stigma is attached to a bride who has been unmarried for a certain period of time. Fruzzetti (1982), Hooja (1969), etc. all consider this fact in detail. Marriage removes this social stigma. Not only does the bride gain from this, but her family also gains. If a social stigma gets attached to a family, then it becomes difficult for them to negotiate in the case of future marriages of daughters. Hence, the family is generally eager to remove the social stigma, and timely marriage becomes very desirable.

Again, the family of the bride is looking for a groom who can provide her with a "better life", both in terms of pecuniary gains and in terms of "quality of life." This is not to imply that in all cases hypergamy is of primary concern.

Gaining in social status may be one of the reasons for a marriage with a particular groom being desirable, but it is not the only reason, nor is it the primary reason in most cases. In almost all cases, it is the future 'happiness' of the bride that is of primary concern to her family. Hence, the services of family members and friends who know the family of the groom are called upon. Their recommendations are considered seriously in all cases. Pecuniary gains from the marriage are also considered. Most often, a bride's family will not consider negotiations with someone from a family which is at least not as wealthy as it is . Hence, the land, or any form of property, e.g. houses, etc owned by the groom's family are considered very important. These forms of asset, in the minds of the bride's family, assure a certain standard of living for the bride. Considerations will also be given to the number of members in the groom's family. A family with a large number of male members for example, will be preferred over one with a large number of female members. This is because, in the latter case there is a chance that the dowry given at this marriage will be recirculated in the payments of future dowries during marriages of the in-laws. All these considerations, however, could be secondary if the groom himself is desirable. His lifetime earning potential is a very important consideration. The primary indicator of this attribute, of course, is his education. The higher his education , the greater is his chance of high earnings. The latter, presumably, would mean a higher standard of living for the bride and also would enhance her prestige

and position in her in-law's household. A related attribute is the groom's occupation . If he is a clerk or school teacher, then even with high educational qualifications his earning potential would be low. Such a groom would not be preferred over, e.g., a doctor, engineer, lawyer, etc. Kurian (1961) lists the different types of jobs in order of preference and the corresponding amounts of dowry demanded and received. Another trait that is often an important consideration is where the groom lives. An urban son-in-law, e.g., would be preferred over a rural son-in-law. All these traits essentially, are to ensure that the bride has a decent life after marriage. Hence, in considering the benefits from marriage, these are the most important aspects of the match that are taken into account.

After considering the bride, the family then considers the gains that the family, itself, would receive from the marriage. A well-to-do groom, not only benefits the bride, but he also benefits the bride's family as well. He can provide some of the dowry in the case of subsequent marriages in the family. Also, the family can turn to him for loans, in an emergency. Thus, Rosenzweig (1987) has shown that in parts of Southern India the loans obtained from the groom and his family have been substantial in instances of crop failures due to drought and other natural calamities. In fact, for this very reason, families have sought alliances with those families that reside outside their own villages, and preferably outside the agro-climatic region in which their village lies. Hence, alliances that can provide

this type of insurance are preferred. Again, consideration is given to the fact that the groom might have to provide, as least partly, for the bride's parents during the latter's old age.

Besides these objectives, hypergamy, that is, marrying into a higher status, may be a consideration in the selection of the groom. The question of hypergamy has been discussed in detail in Chapter 1. Tambiah (1973), Kaplan (1985), and Yalman (1967) have all discussed this aspect of dowry, as we have noted before. Through hypergamy, a relationship to a family of higher status and wealth raises the status of the bride's family too. The latter takes pleasure in the fact that, in the eyes of their peers, they are now of a higher status since they could get their daughters married into a family with high status. This is a psychological benefit that the bride's family gets from marriage. As we have seen from the literature, it is by no means a trivial consideration.

The benefits of marriage to the groom's family have also to be considered. Of course, it is the groom's family which receives the dowry that the marriage brings. This dowry, besides satisfying the family's immediate needs, can also be re-used in subsequent marriages in the family. Again, gift-giving does not stop at dowry-payment just at the time of marriage. A stream of gifts are usually received, almost throughout the lifetime of the bride. Hence, there is an incentive to establish connections with a family that is wealthy. In the latter case, there is often a

substantial transfer of property through inheritance from the bride's family. Besides this, the groom's family also has rights over the lifetime earnings of the bride. If they own land, then they gain in terms of the marginal product of her labor. If she works outside, then her earnings normally accrue to the family. In fact, the more educated she is, the higher the gains for the groom's family in terms of her potential lifetime earnings. Besides these pecuniary gains, the psychological gains obtained from the status of the bride's family are also considered. Though it is rarely the case that they would look for a family with a higher status, they would like to be associated with a well known family. Again, the insurance considerations relevant in the case of the bride's family, are also relevant here. The groom's family would like to be able to turn to the bride's family in cases of emergency.

Taking everything together, there are gains to be obtained from a marriage. The dowry is obtained as the outcome of negotiations over a transaction which yields benefits to both parties. It is also the outcome of a bargain when there are reputational effects of being unmarried over a period of time. The following model tries to formalize some of this.

2. THE MODEL

Let us consider the following scenario. There are unmarried brides and grooms. A bride is either a "good match" for a particular groom of a "bad match."

Let us assume that the bride's family has no search costs, but can search only one groom per period. When the families of the bride and groom meet, they are unable to observe the true value of the match. They can only entertain beliefs about the probability of a good match.

Suppose that the groom's family can costlessly check the true quality of the match, and the check reveals whether the bride would be a good match or not. In fact, the check is really a learning process. But if the bride's family does not want to be checked out, or the groom's family does not want to check, then negotiations break off. The Nash bargaining concept is used where the threat point is the utility each family can achieve by cutting off present negotiations and going back for further search.

As we have seen before, marriage takes place if there are benefits to both families. In fact, the dowry is determined according to the expected benefit of each family.

Let $P(k)$ be the probability that a bride is a good match, given that she was checked k times. These checks are the number of failed negotiations that have gone before.

Suppose that a bride has been found to be a bad match and rejected for a certain number of periods. At the time of new negotiations this fact cannot be suppressed. We are here taking the case of arranged marriages. These marriages are

generally negotiated through members of the family and friends. Hence, it is not difficult for the groom's family to find out the number of checks the bride has gone through. In the absence of such information, the groom's family can look for proxies that can be used to estimate the number of checks. The age of the bride would be one such proxy. If the number of checks is high, it does not follow that the bride is going to be a bad match for the new family; but only that the probability of her being a good match is now smaller.

Suppose a bride can be one of two types : type "a" and type "b", where the probability of a match occurring in the case of type b is higher than the probability of the match in the case of type a for any randomly drawn groom.

Let E be the event that a groom will meet a bride of type b. Then let Pr[E/k] be the probability that a bride who has been unmarried for k periods is type b. For example, Pr[E/k=1] is the probability that the bride has been rejected once and that she is a "b" type. Then,

$$Pr[E|k=1] \quad = $$

$$\frac{Prob(b\text{-}type \ bride \ is \ checked \ once \ and \ found \ to \ be \ a \ bad \ match)}{Prob(bride \ is \ a \ bad \ match)}$$

$$= \frac{g(1-b)}{g(1-b)+(1-g)(1-a)}$$

by conditional probability, where g is the prior probability of a b-type. Then,

$$Pr[E|k=n] =$$

$$\frac{Pr[bride \ is \ b\text{-}type \ and \ found \ bad \ n \ times]}{Pr[bride \ is \ found \ bad \ n \ times]}$$

$$= \frac{g(1-b)^n}{g(1-b)^n + (1-g)(1-a)^n}$$

Let P(n)=the probability that a bride found bad n-times will be a good match

$$= Pr[\text{bride found bad n times is a-type}] \cdot a$$

$$+ Pr[\text{bride found bad n times is b-type}] \cdot b.$$

$$= \frac{g(1-b)^n b + (1-g)(1-a)^n a}{g(1-b)^n + (1-g)(1-a)^n}$$

Hence, P(n) is decreasing in n (we find this by differentiating with respect to n); i.e., $P(n) > P(n+1)$. From this we have the following result :

$$P(n) - P(n+1) \geq P(n+1) - P(n+2),$$

(subtracting recursively for all n). This is essentially a convexity condition. It implies that for both types of brides, the probability of being a good match falls over time. We now try to solve for dowry.

Let v_g be the expected utility of a groom's family, were the family not to accept a particular match. Negotiations could be broken off if the family did not

agree about the amount of dowry, as Fruzzetti says, or if it expected to receive more benefits from marriage to another bride.

Let $v_o(k)$ be the expected utility of the bride's family from "search", i.e., going back again and looking again. Here again, negotiations could break down over disagreement on the dowry amount or because the expected benefits are higher from some other marriage.

Let t be the time discount factor (common to bride and groom). Thus, $tv_o(k)$ and tv_g are the alternative values that the bride's and groom's family could obtain upon separation. They are therefore the disagreement outcomes in a bargain. A marriage will take place if there are net positive gains from it for both parties.

We thus get a rational outcome if

$$(1 + e + h) - tv_o(k) - tv_g > 0.$$

Here $1 + e$ = value of benefits obtained by bride's family, where 1 is the normalized benefit arising from the fact that the social stigma is lifted and e represents other benefits which we have already mentioned. Also h = benefits obtained by the groom's family besides dowry. (These benefits, again, have been already mentioned).

The nature of h and e have already been mentioned in the introduction to this chapter. They essentially take the form of pecuniary gains from the marriage

derived by both parties together with any benefits from hypergamy and insurance considerations.

Let d be the amount of dowry to be determined through negotiations. Dowry, then, is obtained as a solution to the following problem :

$$\underset{d}{Max}$$

$$[\{P(h+d)+(1-p)\ tv_g\}-tv_g]^{m_1}[\{P(1-d+e)+(1-P)\ tv_0\ (k+1)\}-tv_0\ (k)]^{m_2}$$

where :

$P(h+d)$ + $(1-P)tv_g$ represents the groom's expected benefit from the contract,

$P(1-d+e)$ + $(1-P)tv_o(k+1)$ represents the bride's benefit from the contract,

m_1 and m_2 are the respective weights. These weights signify the bargaining strengths of the two families. We use the Nash-bargaining solution concept in the model. It is the logical solution concept to use in the case of cooperative games.(van Damme, 1984).

The above maximization can be written as:

$$\underset{d}{Max}\quad (h+d-tv_g)^{m_1}[\{P(1-d+e)+(1-P)\ tv_0\ (k+1)\}-tv_0\ (k)]^{m_2}$$

The first order condition is

$$m_1(h+d-tv_g)^{m_1-1}[\{P(1+d-e)+(1-P)tv_o(k+1)-tv_o(k)]^{m_2}$$

$$= m_2[\{P(1\text{-}d+e) + (1\text{-}P)tv_o(k+1)\} - tv_o(k)]^{m_2^{-1}}.P(h+d\text{-}tv_g)^{m_1},$$

i.e.,

$$m_1(h+d\text{-}tv_g)^{-1} = m_2P[\{P(1+e\text{-}d) + (1\text{-}P)tv_o(k+1)\} - tv_o(k)]^{-1}$$

or,

$$[P(1\text{-}d+e) + (1\text{-}P)tv_o(k+1)] - tv_o(k) = \frac{P(h+d-tv_g)}{m}$$

where $m = m_1/m_2$.

Hence,

$$P(1+e) - Pd + (1-P)\, tv_0(k+1) - tv_0(k) = \frac{Pd}{m} + \frac{P(h-tv_g)}{t}$$

or,
$$\frac{d(mP+P)}{m} = \frac{Pm(1+e) + m(1-P)\, tv_0(k+1) - mtv_0(k) - P(h-tv_g)}{m}$$

or

$$d = \frac{mP(1+e) + m(1-P)\, tv_0(k+1) - mtv_0(k) - P(h-tv_g)}{P(m+1)}$$

Therefore, d is a function of k, i.e.,

$$(1) \quad d(k) = \frac{Pm(1+e)}{P(m+1)} + \frac{mt[\,(1-P)\, v_0(k+1) - v_0(k)\,]}{P(m+1)} - \frac{h-tv_g}{m+1}$$

Some interesting results follow from Equation (1). The higher the benefits that accrue to the bride's family from the marriage $(1 + e)$, the higher would be dowry-payment. Hence, dowry would be higher if the groom is educated, if his earnings are higher and if his family has a high stature. In fact, if the bride's family considers marriage expenses to be a reflection on their own status, then they would give a higher dowry. Any benefits arising from the lifting of the social stigma are subsumed in $1 + e$. Hence, the bride's family would be willing to pay a higher dowry to lift the social stigma.

Again, from (1), dowry payment would be negatively correlated with h. Hence, if a bride is educated (that is, her lifetime earnings are high), or if her family is wealthy (so that gifts and bequests are substantial), a lower dowry would be paid. If the groom's family can derive considerable benefits from the marriage, a lower dowry could be negotiated upon.

The reservation level of the bride's family can be written as follows :

(2) $v_o(k) = P(k).(1+e-d) + \{1-P(k)\}tv_o(k+1)$.

Substituting in for d, we get

$$v_0(k) = P(k)(1+e) - P(k)\left[\frac{m(1+e)}{P(m+1)} + \frac{mt[(1-P)v_0(k+1) - v_0(k)]}{P(m+1)} - \frac{h - tv_g}{m+1}\right]$$
$$+ [1-P(k)]tv_0(k+1)$$

After some manipulation, this gives

$$(3) \qquad v_0(k) = \frac{[P(k)\,(1+e+h-tv_g)+\{1-P(k)\}\,\{tv_0(k+1)\}]}{m+1-mt}$$

Equation (3) is a difference equation. The solution for this equation is given by :

(4) $f(k) = (r/q) \sum_{i=k}^{\infty} P(i)\,(t/q)^{i-k}[1/\{1-P(k-1)\}]\prod_{j=k}^{i} \{1-P(j-1)\}$

where $q = m + 1 - mt$, and $r = 1 + e - h - tv_g$.

Given these results, we can prove the following proposition :

Proposition 1. d is strictly increasing in k.

Proof. See Appendix.

This result relates the size of dowry to the number of "checks" - that is, the number of negotiations that did not result in marriage. It confirms the findings described in Fruzzetti (1982), Yalman (1961), etc. It also formalizes the casual observations that we might make about certain Asiatic societies --- that if a family cannot get a bride married off, they will have to pay a higher dowry as compensation.

Thus, the dowry increases as the probability of the bride's being "desirable" or "suitable" falls. The increase in dowry reflects the fact that ex-ante (before a check), a bride with a smaller number of checks is considered to be "better" than one with a larger number of checks. Thus, an increase in dowry reflects a

worsening in the bargaining position of the bride and her family which is in turn related to the number of checks she has been through. Families of grooms would expect a higher dowry if they accept a bride with a larger number of checks.

It has been observed by some authors, e.g. Bavinck (1981), that the payment of dowry often leads to increased indebtedness of the household paying the dowry. In fact, various authors, writing on the incidence of rural indebtedness in India, e.g. Basu (1984), have pointed to dowry payment as one of the main causes of these phenomena. This indebtedness is derived from the aforementioned urgency felt by the households to get their daughters married off. By extending our model to include the assets owned by each household, we can show very easily how dowry payment would lead to indebtedness of the household. From Equation (A.3) in the Appendix, we get

$$d(k) \quad = \quad \frac{v_0(k)}{P(k)} \; [\, \frac{m(m+1-mt)}{m+1} - \frac{mt}{m+1} \,] \quad + tv_g - h$$

Substituting from (4)

$$d(k) \quad = \quad (r/q) \cdot K \cdot [\, \frac{m(m+1-mt)}{m+1} - \frac{mt}{m+1} \,] \quad + \quad tv_g - h$$

where K represents the R.H.S. of (4).

Thus,

$$d(k) = \frac{1+e+h-tv_g}{q} \cdot K \cdot [\frac{m(m+1-mt)}{m+1} - \frac{mt}{m+1}] + tv_g - h$$

$$= \frac{1+e+h-tv_g}{q} \cdot K_1 + tv_g - h$$

$$where \quad K_1 = K[\frac{m(m+1-mt)}{m+1} - \frac{mt}{m+1}]$$

We now break up h into two parts -- one part arising from bequest only and the other encompassing all the other benefits obtained by the groom's family. As noted by authors like Fruzzetti (1982), the transfer to the daughter is comprised of two parts --- the part given voluntarily ("dan"), and the part given on demand ("pon"). It is the latter that corresponds to dowry, d(k), in our model.

Let voluntary gifts equal sw_0, where w_0 is the wealth of the family. Hence a proportion of the wealth is transferred to the daughter.

We redefine h as h_1, where h_1 is benefits less the gift. Then

$$d(k) = \frac{1+e+h_1+sw_0-tv_g}{q} \cdot K_1 \cdot [tv_g-h_1-sw_0]$$

$$= sw_0[\frac{K_1}{q}-1] + \{1+e+h_1-tv_g\}\frac{K_1}{q} + tv_g-h_1$$

Let us assume simple functional forms for h_1 and e:

$$h_1 = r_1 w_o, \text{ where } w_o \text{ is as defined before}$$

and $\qquad e = r_2 w_g$, where w_g is the wealth of the groom's family.

These functions just bring in the wealth owned by each family explicitly. Then,

$$d(k) = sw_0 [\frac{K_1}{q} - 1] + \frac{1 + r_2 w_g + r_1 w_0 - t v_g}{q} \cdot K_1 + t v_g - r_1 w_0$$

Thus, after some manipulation, we get:

$$\frac{d + sw_0}{w_0} = s[\frac{m(m+1-mt)}{m+1} - \frac{mt}{m+1}] + \frac{r_2 w_g K_1}{w_0 q} + \frac{r_1 K_1}{q} + \frac{K_1}{w_0 q} + \frac{t v_g}{w_0} \{1 - \frac{K_1}{q}\} - r_1$$

As w_o increases (for any given w_g), the second term decreases, the fourth term decreases, and if we make certain regularity assumptions, the fifth term decreases. The regularity assumption to be made is $K_1/q < 1$, which implies that if the "other benefits" to the groom's family (h) increase, then the dowry amount decreases. Thus we have the result that, as w_o increases, the total transfers as proportion to wealth of the bride's family falls. Hence, poorer families pay a higher proportion of their wealth in the form of dowry and other transfers than do the richer families.

Note that there is nothing in the model that prohibits $\frac{d+s_0}{w_0}$ from being

greater than one. in fact, as $w_0 \to 0$, $\frac{d+sw_0}{w_0} > 1$. Hence, for families with sufficiently

small levels of wealth, dowry would lead to indebtedness.

This model can be extended to incorporate search costs incurred by the two

families in going back and initiating a new search process. Again, the measure of

bargaining strength of the two families, m1 and m2, can be taken to be endogenous

rather than exogenous(as we have assumed). Such extentions will needlessly

complicate the model without providing additional insights.

3. Conclusion

The determinants of dowry have already been noted in the Introduciton. We

will go into the empirical testing of the model just described in Chapter 5.

The data set to be used in testing the model has been collected by the

International Crops Research Institute for Semi-Arid Tropics (ICRISAT). Data on

variables like household income, expenditure, productive resources, assets, family

membership, dowry paid or received at marriage, and the educational levels of

household members were collected for 10 years (1974/75-83/84). We consider the

villages Aurapalle, Shirapur and Kanzara for which data is available for all the ten years.

In the context of the model, the wealth of the bride's family is very significant. Since dowry is a transfer of family wealth, the whole family, essentially, pays it. Cash, clothes, utensils, etc. could be paid for out of the incomes of the father and brothers of the bride; jewelry could be handed down by the mother. The contributions of the brothers would depend on their number, on whether they live at the family residence or outside, on whether they remit money to the household and on their expected inheritance. However, there is no breakdown in the dataset about the contribution of each family member towards dowry. Our model would not require such a break-down. It is enough to have the total amount of dowry paid by the family as a whole. Again, the desire to give dowry would generally be negatively correlated to the educational level of the bride. The age of the bride should have a positive effect on the dowry amount. The security of the bride later on in life, could be a motivation for higher dowry payments, especially in cases where the age differential between the bride and groom is large. The ability to pay dowry would depend on family income, land and non-land assets.

From the point of view of the groom's family, the primary determinants of dowry are the wealth of the family, the education level of the groom, his income. All the above essentially capture the benefits from a marriage.

The other important aspect of the model is the number of checks that the bride goes through. Information on the exact number of checks is not available from the dataset. Actually, such information can be obtained from the relatives and friends initiating the negotiations. Without such information, the age of the bride can be used as a proxy for the number of checks. Hence, if the dowry amount is seen to go up with age, it would provide a test for the model. We will see in Chapter 5 that most of these conjectures are borne out by empirical evidence.

Appendix

Proof of Proposition 1.

From Equation (1),

$$(A.1) \quad d = \frac{1}{m+1} [m(1+e) + \frac{mt}{P} \{(1-P)v_o(k+1) - v_o(k) - h + tv_g]$$

From Equation (3)

$$(A.2) \quad (1-P) v_0(k+1) = v_0(k) [\frac{(m+1-mt)}{t} - P(k) \frac{(1+e+h-tv_g)}{t}$$

Substituting Equation (A.2) in Equation (A.1), we obtain

$$(A.3) \quad d(k) = \frac{v_0(k)}{P(k)} [\frac{m(m+1-mt)}{m+1} - \frac{mt}{m+1}] - (h-tv_g)$$

From Equation (4),

$$\frac{v_0(k)}{P(K)} = (\frac{r}{q}) [1 + \frac{t(1-P(k))P(k+1)}{qP(k)} + \frac{t^2(1-P(k))(1-P(k+1))P(k+2)}{q^2P(k)} + ...]$$

From the convexity condition obtained before,

$$\frac{P(k+i)}{P(k)} \quad < \quad \frac{P(k+i+1)}{P(k+i)} \quad for \quad all \quad i$$

Therefore, comparing term by term, and noting that P(k+i) is decreasing in i, we get

$$\frac{v_0(k+1)}{P(k+1)} \quad > \quad \frac{v_0(k)}{P(k)}$$

Thus $v_o(k)/P(k)$ is increasing in k.

Now, in (A.3), $v_o(k)/P(k)$ is increasing in k. Its coefficient is > 0 because

$$1 + m(1-t) > t, \text{ (since } t < 1)$$

so that $m(m+1-mt) > mt$.

Therefore, d(k) is strictly increasing in k.

CHAPTER 3

DOWRY AS A SIGNAL

1. INTRODUCTION

The bargaining model of the previous chapter assumed that both parties in the dowry transaction have complete information about the relevant variables that determine the benefits to the two parties from marriage. This assumption however, may not be valid in practice. It is possible, for instance, that the groom's family may not have perfect knowledge about the wealth of the bride's family - which is an important variable determining the potential benefits from marriage to the groom's family. As we have already discussed in Chapter Two, these benefits may take the form of future transfers in time of need, share of family inheritance, other indirect benefits from wealthy in-laws since wealth and social influence are positively correlated and of use in finding a job, etc. Direct observation of wealth may be difficult when a significant fraction of the wealth is held in non-land assets. Moreover, information on indebtedness may be difficult to obtain and as a result, net wealth may not be observable.

The wealth of the bride's family, of course, need not be the only variable about which asymmetry of information exists. However, because of its importance in determining the benefits to the groom's family, we have focused on this variable in the model that follows. Also, as we will see later, it is the only variable about which a dowry "offer" on the part of the bride's family is likely to convey useful information. For this reason, focusing on the wealth variable alone is justified.

Important information asymmetries may also exist regarding variables on the groom's side. However, again , to the extent that we view the dowry "offer" as being initiated by the bride's family, the dowry does not convey any information about these variables in the model. Possible ways of dealing with these information asymmetries would be to introduce subjective beliefs (i.e. probability distributions, possibly conditional on some observable attributes) on the part of the bride's family regarding these variables, and to consider the expected utility of the benefits from marriage as a function of these variables. However, this needlessly complicates the analysis without adding much insight; as a result, we avoid this complication by simply assuming that the benefits from marriage to the bride's family are independent of these unobservable attributes of the groom's family. However, we focus on some other variables for which asymmetry of information is important in our context. These are variables that affect the search strategy of the groom's family, e.g., their subjective discount rates and search costs.

As has been indicated above, then, the crux of the approach here is to look at dowry as a signal for unobservable characteristics of the bride's family, especially its wealth.

As will become clear, and as is commonly the case with signaling models, the approach requires us to assume that the emitor of the signal is able to credibly precommit to the signal. If the groom's family is allowed to make a counter offer, then it is possible that it might be in the interest of the bride's family to revise the dowry amount. Renegotiation, then, could upset the signaling equilibrium. This would call for a more general approach of bargaining under two-sided asymmetric information in which offers and counter-offers are allowed. Our analysis, in this chapter, does not go that far. However, we should point out that the commitment to a dowry amount is empirically observed. This is because planning for a specific dowry amount involves planning for a specific amount of liquidity in wealth. It may be very costly to acquire additional liquidity and revise the planned dowry amount. Often, the result of negotiation is to cause borrowing at very high cost--given the imperfect capital markets in societies in which dowry-payment is observed. Thus, while the initial dowry offer may be renegotiated, the renegotiated outcome may not be very different.

The formal model will be presented below. Here we discuss the basic structure of the model. The bride's family has private information about its own

wealth. The groom's family, on the other hand, can only infer about this wealth from signals. We consider the dowry offer by the bride's family to provide a signal about its wealth to the prospective groom's family. As is common in most signaling models of this type [e.g. Spence (1974), Leland and Pyle (1985)], the receiver of the signal-in this case the groom's family-has "beliefs" about the relation between dowry and wealth. In particular, higher dowry is taken to signal higher wealth .[1] Given these beliefs, the groom's family is able to infer the wealth and the potential benefits from marriage by observing the dowry offer. It is assumed that the potential groom's family follows a reservation-search strategy for a prospective bride-the reservation level of wealth depends on its "impatience" or discount factor, as well as the cost of search. This reservation level of any potential groom's family is unknown to any bride's family, which only knows the probability distribution from which the reservation levels are drawn. The potential bride's family, thus faces a trade-off. Given the "beliefs" of the prospective groom's family, there is an incentive to increase the dowry offer. But higher dowry payments also involve higher cost. Thus, given the beliefs of the groom's family about the relationship between dowry and wealth, there is an optimal dowry offer for each wealth-type. An equilibrium is defined by beliefs which are justified in terms fo the behavior of different wealth-types regarding their choice of the dowry amount.

The equilibrium described above [or more generally, equilibria, because there will be a continuum of equilibria in this situation out of which we select one--as in Spence(1974)], is a "separating equilibrium". Each wealth type selects a specific dowry amount and as a consequence, separates itself out from other wealth-type so that the groom's family is able to uniquely infer its type from the signal. Thus, in equilibrium, the probability of finding a match for each type is still the same as would be the case if the groom's family could perfectly observe the wealth of the bride's family. Signaling, therefore, involves a cost--the dowry payment--which could be avoided if wealth had been perfectly observable. For our purposes, here, "dowry" is defined to include any transfer that might represent the "share" of the bride. However, we will see that in the signaling equilibrium. the amount of dowry transfer will exceed what could be interpreted as the "inheritance share"--i.e., the transfer that would be voluntarily made if wealth had been perfectly observable and signaling considerations had not been present. It is in this sense that the dowry imposes a cost on the bride's family. Other costs might also result and are , in fact, commonly associated with dowry. These are the psychological costs of having to prepare for the dowry payments, the costs associated with indebtedness which is often the consequence of dowry payments, and, most importantly, perhaps, the hardships that the bride often has to endure in the groom's family if liquidity reasons force the family into paying the dowry in the

future, or if they cannot pay the entire amount. Two questions arise in this context. First, why is it necessary to signal about the amount of wealth instead of merely passing on that information--since signaling is costly in itself? Second, why does signaling take place at all, since in a separating equilibrium each wealth-type is correctly identified by the groom's family, so the probability of finding a match is the same if none of the wealth types signaled, or only agreed to transfer the optimal amount? The answer to the first question is that unless the information being passed on by the bride's side is verifiable, it would not be credible, since it is costless to communicate such information. Signaling communicates the true wealth because it is not costless. The answer to the second question is that, if every wealth-type were to only commit to transferring the inheritance share, then it would be in the interest of some low wealth-types to mimic the high wealth-types by deviating from the inheritance share and offering higher dowry amount. This, in turn, implies that every wealth-type (except possibly the lowest) will deviate from its inheritance amount so as to make it costly for the lower types to mimic. In equilibrium then, every wealth type but the lowest will deviate from the inheritance amount even though the probability of finding a match is completely unaffected.

These features, of course, are usual with most signaling models [e.g. Spence (1974), Leland and Pyle (1985)]. The model we outline below differs from these signaling models in some important aspects. First, as we have already indicated,

there is two-sided asymmetry of information to the extent that the reservation level of the groom is unknown to the bride's family and is essentially a random draw from a probability distribution, from their point of view. Second, the signaling model we outline is a repeated or multi-period signaling model. The prospective bride's family signals a dowry amount to a prospective groom's family in each period. The time period may be interpreted as the age of the bride in this model, and we assume age to be an observable or verifiable attribute. Thus, the groom's side has beliefs conditional on the observable attributes of the bride's family, of which age is one. (If some attributes of the groom's family are observable, and benefits from marriage to the bride's family depend on these attributes, then beliefs could be conditional on these attributes as well). We are able to characterize the equilibrium belief schedule and show that the signaling equilibrium will have desirable properties each period in our multi-period model. A multi-period framework is important in our context because the age-dependence, or time-dependence of dowry is empirically observed. We have discussed this in chapter one; it is important in the bargaining model in chapter two; and it receives considerable attention in our empirical work in chapter four.

2. THE MODEL

Let a set of observable attributes of the prospective bride's family be identified by a vector "a" ,and a set of observable attributes of the groom's family be identified by a vector "b". The utility to a groom's family from accepting a dowry offer D is assumed to be given by

(1) $$H (W,D; a, b)$$

where W represents the wealth of the bride's family and we assume:

$$H_W > 0, \ H_D > 0, \ H_{WW} \leq 0, \ H_{DD} \leq 0.$$

Without any loss of generality, we can take the function H (,) to be of the following form:

(2) $$H (W,D; a, b) = H (h(a,b).W + D)$$

where h (a,b) is a function depending on a and b, and hW may be taken to represent the present value of future benefits from marriage into a family with wealth W.

As we have discussed above, the wealth W of the bride's family is not directly observable to the groom's family. The groom's family can only observe the dowry offer D, and on the basis of that, infer the wealth of the bride's family. Thus, let us suppose that the prospective groom's family has "beliefs" given by :

(3) $$W = W(D; a,b)$$

where the function W(.) indicates their inference of a wealth W from an observed dowry offer D. Of course, in equilibrium, these beliefs will be justified.

Let us assume that the age of the prospective bride, while observable, is not included within the vector a. This is so because we want to emphasize the dependence of the equilibrium dowry offer on age, or the time period t. Accordingly, for each time period t, we have a belief function of the form in equation (3) above:

(3') $\qquad W = W_t(D_t; a,b), t = 1,....T$

where $t = 1$ is the "minimum marriageable age", and $t = T$ is the "maximum marriageable age", to be discussed further later.

Given beliefs of the form (3) or (3'), the utility to a groom's family from marriage is given by:

(4) $\qquad H(h \; W_t(D_t)+D_t; a,b) = H(r_t(D_t; a,b)]$

(5) $\qquad$ where $r_t(D_t; a,b) = h \cdot W_t(D_t)+D_t$

The groom's family will be assumed to have a reservation search strategy, which we do not explicitly model here. This search strategy is characterized by a reservation level $r_t(b)$ such that the offer is accepted and marriage takes place if and only if the dowry offer D_t satisfies $r_t(D_t; a,b) > \bar{r}_t$.

We now turn to the bride's family. The bride's family is assumed to know the search strategy of the prospective groom's family; however, there is an important information asymmetry on this side as well. The reservation level $r_t(b)$ of a perspective groom's family will depend on unobservable characteristics like the

discount factor and search costs. To a prospective bride's family then, this reservation level is a random variable which will be assumed to be drawn from a distribution $F(r;b)$. Given the common knowledge beliefs (3') of the prospective groom's family, the probability that a dowry offer D_t will be accepted is given by $F_t(r_t(D_t);b)$.

The utility function of a prospective bride's family is given by

(6) $\qquad\qquad U(W+B(a,b)-D) + g(D)$

with $U' > 0$, $g' > 0$, $U'' < 0$, $G'' < 0$,

where $B(a,b)$ denotes the benefits from marriage. The additively separable from is important for the subsequent analysis. The component $g(\ )$ represents the utility to the bride's family from a dowry transfer to the household in which the bride is supposed to live. [2] This function guarantees that even if signaling considerations are unimportant, some transfers would still take place which gives utility to the bride's household--this transfer can be interpreted as the "inheritance share". The component $U()$ is the utility to the household from the residual wealth plus the benefits from the marriage taking place. Risk aversion of the bride's family is crucial for the analysis. This is ensured by the assumption that both functions $U(\ )$ and $g(\ )$ are strictly concave.

3. OPTIMIZATION BY THE BRIDE'S FAMILY

The bride's family in any period t faces a finite horizon optimization problem. We assume that there is a maxium age T of the bride beyond which marriage is not possible. The precise definition of T is not important for our purposes. We can interpret T as the end of a woman's child-bearing age. In terms of the above model, this can be motivated as follows. The utility function of the groom's family may be taken to be of the form

(2') $H_t(W; D; a, b) = f_t(a,b) H(h(a,b)W + D_t)$ where $f_t(\ )$ is a time-dependent function of observable characteristics of both sides. We can then say that $f_t(a,b) = 0$ for all $t \geq T$.

This more general approach would imply that the reservation level of the groom's family will depend on a,b and t. This, in turn, implies that the distribution function $F(r; \ )$ will be parameterized by a,b and t. We avoid this complication for notational simplicity.

We also assume that if period T is reached and marriage has not occurred, then the inheritance amount $D*$ is transferred immediately to the unmarried woman, where $D*$ solves

$$\underset{D}{Max} \quad U(W-D) \ + \ g(D)$$

so that

(7) $g'(D*) = U'(W-D*)$

Now let us consider the optimization problem in the last period T-1. This optimization problem can be written as [3]

$$\underset{D_{T-1}}{Max} \quad V_{T-1}(W, D_{T-1}) =$$

$$F(r(D_{T-1}))[U(W+B-D_{T-1})+g(D_{T-1})]+[1-F(r(D_{T-1}))][U(W-D^*)+g(D^*)]$$

$$=F(r(D_{T-1}))[U(W+B-D_{T-1})+g(D_{T-1})-U(W-D^*)-g(D^*)]+[U(W-D^*)+g(D^*)]$$

The first-order condition for this maximization yields

(8) $\quad F'(r(D_{T-1}))[hdw/dD_{T-1}+1][U(W+B-D_{T-1})+g(D_{T-1})-U(W-D^*)-g(D^*)]$ -

$F(r(D_{T-1}))[U'(W+B-D_{T-1})-g'(D_{T-1}) = 0$

For given beliefs $W(D_{T-1})$, equation (8) gives dowry as a function of wealth:

$$D_{T-1} = D_{T-1}(W)$$

We are not interested in arbitrary belief functions $W(D_{T-1})$; we restrict ourselves to belief functions with an equilibrium property. We define an equilibrium belief function to have the property that these belief functions are self-confirming through equation (8), i.e.,

(9) $\qquad W_{T-1}[D_{T-1}(W)] = W$

Now, solving equation (8) as a differential equation in W and D_{T-1} gives a function $W^*(D_{T-1})$. From that we have--

$D_{T-1} = D_{T-1}(W) = D_{T-1}(W^*(D_{T-1}))$, which implies that

(10) $\qquad (W^*)^{-1} = D_{T-1}(\ )$,

provided the inverse exists.

Hence, $W^*[D_{T-1}(W)] = W$ so that $W^*(D_{T-1})$ satisfies equation (9), and hence is an equilibrium belief function. We, therefore, have proved the following:

Proposition 1

If an equilibrium belief schedule exists, then it is a solution to differential equation (8) . Conversely, every monotonic solution to differential equation (8) is a candidate for equilibrium belief function.

We now discuss the properties of the equilibrium belief function [4] and the associated equilibrium signaling behavior $D_{T-1} = D_{T-1}(W)$.

Proposition 2 states that in any such signaling equilibrium in period T-1, higher wealth types will signal a higher dowry amount. Thus, we get a fairly strong characterization of signaling behavior : under quite general conditions, higher wealth types signal their higher wealth to groom's families by offering higher dowry amounts. As we will see in the proof of proposition 2, risk aversion plays an important role in this result. Concavity of the utility function implies that the cost of signaling a given dowry amount is higher for lower wealth types. In a signaling equilibrium, therefore higher wealth types end up signaling higher amounts to prevent lower wealth types from mimicking them.

Proposition 2

In a signaling equilibrium ,the equilibrium belief function in period T-1 is strictly increasing in the dowry amount, which implies that higher wealth types signal higher dowry amounts.

Proof : See Appendix.

The next proposition can be interpreted as a welfare result. Signaling involves a "cost"-- this cost being due to the fact that the dowry offer (in period T-1) exceeds D^*, the amount that the bride's family would have optimally transferred if signaling considerations had not been important. As we have seen before, this "excessive" transfer may have other kinds of costs associated with it as well. We now have,

Proposition 3

In a signaling equilibrium, $D_{T-1} > D^*$. Moreover, $D_{T-1} - D^* < B$ which implies that the entire benefit from marriage is not dissipated in signaling.

Proof. From equations (18) and (8) , we see that

$U'(W+B-D_{T-1}) - g'(D_{T-1}) \geq 0.$

Let D_{T-1} satisfy $U'(W+B-D_{T-1}) - g(D_{T-1}) = 0$

Then, from the concavity of U ( ) and g ( ), it can be seen that B > 0 implies

$D_{T-1} \geq D_{T-1} > D^*$ (see fig.2 in Appendix).

It can also be seen that $U'(W+B-D_{T-1}) < U'(W-D^*)$, which implies that

$$B - D_{T-1} > - D^*$$

$$\text{i.e. } D_{T-1} - D^* < B$$

$$(QED)$$

We will see from the subsequent discussion, that the proof can be extended to

$t < T-1$ as well, so that $D_t > D^*$ for all $t < T$.

We now consider the problem in period T-2. The optimization problem of the bride's family in period T-2 is

$$\underset{D_{T-2}}{Max} \quad V_{T-2}(W, D_{T-2}) = F(r(D_{T-2})) [U(W+B-D_{T-2})] + [1-F(r(D_{T-2}))] V_{T-1}^*(W)$$

where $V_{T-1}^*(W)$ is the maximized value of the objective function in period T-1.

Or,

$$(19) \quad V_{T-2}(W, D_{T-2}) = F(r(D_{T-2})) [U(W+B-D_{T-2}) +g(D_{T-2}) - V_{T-1}^*(W)] + V_{T-1}^*(W)$$

The first-order conditions to this problem give--

$$(20) \quad F(r(D_{T-2})) \, [h \cdot (\frac{dW}{dD_{T-2}}) + 1] \, [U(W+B-D_{T-2}) + g(D_{T-2}) - V^*_{T-1}(W)]$$

$$-F(r(D_{T-2})) \, [U'(W+B-D_{T-2}) - g'(D_{T-2})] \quad = \quad 0$$

Equation (20) gives $D_{T-2} = D_{T-2}(W)$. As before, an equilibrium belief function for period T-2 will satisfy the differential equation (20). Let $W(D_{T-2})$ be an equilibrium belief function. Then $W^{-1} = D_{T-2}(\ )$.

We now have proposition 4, which establishes that in a signaling equilibrium of period T-2, higher wealth types signal higher dowry amounts.

Proposition 4

In a signaling equilibrium in period T-2, the equilibrium belief function is strictly increasing in the dowry amount, which implies that higher wealth types signal higher dowry amounts.

Proof: See Appendix.

The same method of proof can be extended to show that an equilibrium belief function is monotone increasing for any $t \leq$ T-1, so that higher wealth types in equilibrium signal higher dowry amounts.

We now briefly discuss the issue of uniqueness. Equilibrium belief functions have been shown to be solutions of differential equations like (8) or (20); hence, any solution to the differential equations with the monotonicity property is a

candidate equilibrium belief function. We choose one among these continuum of equilibria in which the lowest type, w_0, does not deviate from its complete information dowry offer $D^*(w_0)$. This is because the lowest wealth type will not be mimicked by any other wealth types---thus it has no incentive to deviate. On the other hand, we have already seen that in a separating equilibrium, each type is correctly identified by its dowry offer. So deviation is strictly inferior for the lowest possible type.

We have seen from the above results that families with more wealth pay a higher dowry than families with less wealth , i.e., wealthy families tend to signal the fact of their wealth. The ostentation that we observe in marriages in many countries corroborates this fact. The prestige of a family often depends on how much a daughter takes with her at marriage. By signaling its wealth through a higher dowry, a family can ensure that its daughters will get married off without much difficulty. It is , again, the social sanctions against unmarried women that induces a family to pay a higher dowry. The groom's family, knowing that such a family is wealthy, is encouraged to go through with the marriage because they can foresee future benefits from such a match.

The literature cited in chapter one corroborates this fact. Sharma (1980), Freedman (1966), Mies (1981), Mandelbaum (1970), Harrel and Dickey (1985) are

some of the authors who have taken note of the fact that families with more wealth generally signal their wealth through higher dowries.

Sharma (1980) notes that the amount of dowry often depends on how much the bridegroom's family will expect and how much it is necessary to give in order to maintain the family's prestige.

Freedman (1966) agrees saying that the bride's family is willing to pay a high dowry since its status is at stake. They must send the bride off " in the greatest manner they can afford." Mandelbaum (1970) notes that large wedding expenses enhance a family's reputation.

Mies (1981) notes that rich landlord families will pay up to Rs.100,000 in dowry.

Harrel and Dickey (1985) also see dowry as a social statement and take note of the fact that there is a display of wealth by the bride's side. Families validate their social status by the display of wealth , and the dowry is seen as a public statement of the family's wealth.

In our model we have tried to view dowry from this standpoint. Note, however, that wealthy families pay a higher dowry than the others not because they want to leave their daughters with a greater inheritance. We have shown in our model that the dowry amount will be greater than any inheritance share that the daughters get. A priori, one would expect wealthier families to pay a lower dowry

instead of a higher one because such a marriage benefits the groom's side and thus the latter would be satisfied with a lower dowry. The fact that the dowry amount is higher instead of lower indicates that the signaling and the display-of-wealth aspects of dowry dominate. We have shown this to be empirically true in chapter four, where we find that the per capita asset has a significantly positive effect on dowry.

4.SIMULATION RESULTS.

In this section, we report some simulation results that investigate the age-dependence of dowry as well as the effect on dowry of parameters like the benefits from marriage to the bride's family (B), the benefits derived by the groom from the wealth of the bride's family (the parameter h), parameters of the probability distribution from which the groom's reservation utility level is drawn , and risk aversion of the bride's family. This essentially involves solving differential equations (8) or (20). Since, even the most standard specifications of the utility and distribution functions did not permit us to derive analytical solutions, numerical methods had to be used. A Fortran subroutine was used to solve the differential equations numerically.

For the purposes of the simulations, (and for simplicity), we departed slightly from the model outlined above and assumed that the utility function of the bride's

family is given by U(W+B-D), which implicitly assumes that D is an amount

transferred in excess of the inheritance share that confers no utility to the bride's

family.

The following functional forms were assumed:

Utility function U(W) = ln (W) , W ϵ [1,3]

Distribution function F(r) = 1-e$^{-(r-\alpha)}$, ∞ > r $\geq$ α $\geq$ 0

Thus, the utility function of the bride's family is concave ; the highest wealth type

has three times the wealth of the lowest wealth type (which is normalized to unity),

the lowest possible utility from marriage to the groom's family is assumed to be α

$\geq$ 0 ,and the reservation level is assumed to belong to an exponential distribution.

With these specifications, differential equation (8) was solved numerically

for different parameter configurations. The "benchmark" parameter configurations

were chosen to be h = 0.4, B= 0.2, and α= 0.0 . This implies that the benefit to

the groom's family is of the order of 40% of the wealth of the bride's family (here

this benefit includes inheritance share), the benefit to the bride's family is 20% of

the wealth of the lowest wealth type, and the lowest possible reservation level is

assumed to be zero. The lower of the two curves in figure S.1 shows the solution

D=D(W) corresponding to the benchmark parameter values.

The comparative statics results are summarized below:

1. A higher value of α, indicating a shift of the distribution function to the right , implying that for any given dowry offer, the probability of marriage is smaller , raises the dowry offered by each wealth type. Thus, the function D(W) shifts up in figure S.1 as α is raised to 0.1.

2. Lower values of h, indicating smaller benefit to marriage to the groom's family, raises the dowry offered by each wealth type. Thus in figure S.2 the D(W) function is successively higher as h falls to 0.3 and 0.2 .

3. Higher values of B , indicating higher benefits to marriage to the bride's family, raise the dowry offered by each wealth type. Thus in figure S.3 , raising b to 0.3 and 0.4 successively shifts the D(W) function up.

4. We consider slightly more general utility functions of the form $[\ln W]^\beta$, $\beta > 1$. Although this utility function is not concave for wealth types in the neighborhood of W=1, the function D(W) in the "benchmark case" is increasing for $\beta = 1.25$. Moreover, a higher value of β ,indicating smaller risk aversion for all wealth types, is found to lower the dowry offer for all wealth types (see figure S.4).

5. Finally, for our purposes perhaps the most interesting comparison is between the D(W) schedules for two different time periods (corresponding to two different ages of the bride). Using the dynamic programming approach referred to above, we can solve for $D_T(W)$ and then $D_{T-1}(W)$. We solved equation (8) and then equation (20)

using this method for the benchmark case. In figure S.5 the higher schedule corresponds to the later period, indicating that dowry increases with the age of the bride.

ENDNOTES

1. These beliefs in any equilibrium are "self-confirming" through the induced signaling behavior of the bride's family.

2. There are two ways of dealing with the inheritance issue. One is to assume that the existing inheritance laws ensure for the bride a future share of the bequeathable assets of her natal household. In that case, the current dowry may be taken to reflect only the signaling component, with inheritance share going to the groom's family later. On the other hand, if such inheritance laws do not exist or are imperfectly implemented, we would expect the dowry to include bequealthable transfers. We have taken the latter approach here.

3. From here on, we suppress the observable attributes a and b, as they are treated as given parameters in the model.

4. We do not go into the difficult issue of existence of an equilibrium belief schedule here. We follow the usual practice in the literature [e.g. Leland and Pyle (1985)] in assuming that an equilibrium belief function exists and then discussing its properties.

APPENDIX

Proof of Proposition 2 :

In a signaling equilibrium, by equation (10)

$$\frac{dW^*}{dD_{T-1}} = \frac{1}{D'_{T-1}(W)}$$

We will show that

$$D'_{T-1}(W) > 0$$

We rewrite equation (8) as

(11) $\qquad K(W, D_{T-1}) = 0$

Hence, $K_W \, dW + K_D \, dD_{T-1} = 0$

(12) $\qquad$ Thus, $D'_{T-1}(W) = dD_{T-1}/dW = -K_W/K_D$

Now, $K_D < 0$ by the second-order condition in the maximization leading to equation

(8). Therefore

sign $(D'_{T-1}(W))$ = sign (K_W)

Now, $K_W = F'(r_{t-1}(D_{T-1}))$ $[h(dw/dD_{T-1})+1]$ $[U'(W+B-D_{T-1})-U'(W-D^*)]$

$$-F(r_{t-1}(D_{T-1}))\ U''(W+B-D_{T-1})$$

Expanding $U'(W-D^*)$ in Taylor's series around $U(W+B-D)$, we get

(13) $K_W = F'(r_{t-1}(D_{T-1}))$ $[h\ dw/dD_{T-1} + 1]$ $U''(W+B-D)(B-D_{T-1}+D^*)$

$$- F(r_{t-1}(D_{T-1}))U''(W+B-D_{T-1})$$

$$= U''(W+B-D_{T-1})F(r_{t-1}(D_{T-1}))[\{F'(r_{t-1}(D_{T-1}))/F(r_{t-1}(D_{T-1}))\}$$

$$.\{h\ dw/dD_{T-1}+1\}(B-D_{T-1}+D^*)]-F(r_{t-1}(D_{T-1}))U''(W+B-D_{T-1})$$

Substituting for the first expression within square brackets in equation (13) from equation (8), we get

$$K_W = [U''(W+B-D_{T-1})\ F(r_{t-1}(D_{T-1}))]$$

$$.[\{U'(W+B-D_{T-1})-g'(D_{T-1})(B-D_{T-1}+D^*)\}/\{U(W+B-D_{T-1})$$

$$- U(W-D^*)+g(D_{T-1})-g(D^*)\} - 1]$$

or,

(14) $K_W = [U''(W+B-D_{T-1})\ F(r_{t-1}(D_{T-1}))].$

$$[\{ \{U'(W+B-D_{T-1})-g'(D_{T-1})\}\{B-D_{T-1}+D^*\}$$

$$- \{U(W+B-D_{T-1})- U(W-D^*)+g(D_{T-1})-g(D^*)\} \}/$$

$$\{ U(W+B-D_{T-1})-U(W-D^*)+ g(D_{T-1})- g(D^*)\}]$$

Now, from the concavity of $g(\ )$, it follows that

$$(D_{T-1} - D^*)g'(D_{T-1}) < g(D_{T-1}) - g(D^*)$$

These can be seen from figure 1(a) and 1(b).

Thus, we can write--

$$-(D^*-D_{T-1})\, g'(D_{T-1}) < g(D_{T-1}) - g(D^*)$$

$$\text{i.e. } - g'(D_{T-1})B - (D^* - D_{T-1})\, g'(D_{T-1}) < g(D_{T-1}) - g(D^*) \quad (15) \qquad \text{or}$$

$$- g'(D_{T-1})(B-D_{T-1}+D^*) < g(D_{T-1}) - g(D^*)$$

Again, concavity of U ( ) implies

$$(16) \qquad (B-D_{T-1}+D^*)\, U'(W+B-D_{T-1}) < U(W+B-D_{T-1}) - U(W-D^*)$$

Adding equations (15) and (16) we get--

$$(17) \qquad (B-D_{T-1}+D^*)\, [U'(W+B-D_{T-1})-g'(D_{T-1})]$$

$$< U(W+B-D_{T-1})-U(W-D^*)+g(D_{T-1})-g(D^*)$$

Substituting this inequality in equation (14), we find that the expression within the square brackets is negative, because the numerator of that expression is negative by equation (17), and the denominator is positive. The denominator is positive, because we must have--

$$(18) \qquad U(W+B-D_{T-1}) + g(D_{T-1}) \geq U(W-D^*) + g(D^*)$$

The RHS of equation (18) is the last period level of utility that the bride's family is guaranteed in period T-1 (e.g. by not signaling at all). Since the expression with

square brackets in equation (14) is negative and $U'' < 0$, it follows that $K_W > 0$.

(QED)

Proof of Proposition 4 :

From equation (2), $\quad K(W, D_{T-2}) = 0$.

Then $dD_{T-2}/dW = -K_W/K_D$ and $K_D < 0$ (by the second order condition) Hence, we need to show that $K_W > 0$.

Now,

(21) $\quad K_W = F'(r(D_{T-2}))[h(dw/dD_{T-2}) + 1][U'(W + B - D_{T-2}) - (dV_{T-1}^*(W)/dW]$

$\quad\quad -F(r(D_{T-2}))[U''(W + B - D_{T-2}))$

From the envelope theorem we have that

$\quad dV_{T-1}^*(W)/dW = \delta V_{T-1}^*(W, D_{T-1}(W))/\delta W$

$\quad\quad\quad = U'(W - D^*) + F(r(D_{T-1}))[U'(W + B - D_{T-1}) - U'(W - D^*)]$

Thus,

(22) $\quad K_W = F'(r(D_{T-2}))[h(dW/dD_{T-2}) + 1][U'(W + B - D_{T-2}) - U'(W - D^*)]$

$\quad\quad - F(r(D_{T-2}))U''(W + B - D_{T-2}) -$

$\quad\quad F(r(D_{T-2}))[U'(W + B - D_{T-1}) - U'(W - D^*)].[h(dW/dD_{T-2}) + 1]$

Now, $\quad F'(r(D_{T-2}))[h(dW/dD_{T-2}) + 1][U'(W + B - D_{T-2}) - U(W - D^*)]$

$\quad\quad - F(r(D_{T-2}))U''(W + B - D_{T-2})$

$$= F(r(D_{T-2}))[h(dW/dD_{T-2})+1]U''(W+B-D_{T-2})(B-D_{T-2}+D^*]$$

$$-F(r(D_{T-2}))U''(W+B-D_{T-2})$$

after expanding $U'(W-D^*)$ around $U'(W+B-D_{T-2})$ in Taylor's series.

Therefore,

(23) $\qquad F'(r(D_{T-2}))[h(dW/dD_{T-2})+1][U'(W+B-D_{T-2})-U(W-D^*)]$

$$- F(r(D_{T-2}))U''(W+B-D_{T-2})$$

$$= U''(W+B-D_{T-2})[\{F'(r(D_{T-2}))/F(r(D_{T-2}))\}\{h(dw/dD_{T-2})+1\}.$$

$$\{B-D_{T-2}+D^*\}-1]F(r(D_{T-2}))$$

From the first order condition (20), we have

(24) $\qquad [F'(r(D_{T-2}))/F((D_{T-2}))][h(dw/dD_{T-2})+1]\{B-D_{T-2}+D^*\}- 1$

$$=\{[U'(W+B-D_{T-2})-g'(D_{T-2})]\{B-D_{T-2}+D^*\}/[U(W+B-D_{T-2})+g(D_{T-2})$$

$$-V_{T-1}^*(W)]\} - 1$$

It follows from the maximization in equation (19) that

$$U(W+B-D_{T-2})+g(D_{T-2}) \geq V_{T-1}^*(W)$$

because the bride's family can always set D_{T-2} such that the two sides above are equal, and get at least $V_{1-1}^*(W)$. We then have from equation (20) that $U'(W+B-D_{T-2}) - g'(D_{T-2}) > 0$. We can then say, as in the proof of proposition (3) that

$$U'(W+B-D_{T-2}) < U'(W-D^*) => B-D_{T-2} > -D^*$$

$$=> B-D_{T-2}+D^* > 0 \text{ (see fig. 2)}.$$

From this, and also from the fact that $V_{T-1}^*(W) \geq U(W-D^*)+g(D^*)$, we can use equations (23) and (24) to obtain

(25) $F'(r(D_{T-2}))[h(dw/dD_{T-2})+1][U'(W+B-D_{T-2})-U'(W-D^*)]$

- $F(r(D_{T-2}))U''(W+B-D_{T-2})$

$= U''(W+B-D_{T-2})[\{F'(r(D_{T-2}))\}/\{F(r(D_{T-2}))\}\{h(dw/dD_{T-2})+1\}$

$\{B-D_{T-2}+D^*\} -1]F(r(D_{T-2}))$

$= U''(W+B-D_{T-2})[\{U'(W+B-D_{T-2})-g'(D_{T-2})\}/\{U(W+B-D_{T-2})$

$+g(D_{T-2})-V_{T-1}^*(W)\}].\{B-D_{T-2}+D^*\}-1]F(r(D_{T-2}))$

$\geq U''(W+B-D_{T-2})[\{U'(W+B-D_{T-2}-g'(D_{T-2})\}/$

$\{U(W+B-D_{T-2})+g(D_{T-2})-U(W-D^*)-g(D^*)\}].[\{B-D_{T-2}+D^*\}-1]F(r(D_{T-2}))]$

We can proceed as in the proof of proposition 2 (equation 14) and show that the expression within the outer square brackets in equation (25) is negative. Since $U''(.)$ < 0, it follows that

(26) $F'(r(D_{T-2}))[h(dw/dD_{T-2})+1][U'(W+B-D_{T-2})-U'(W-D^*)]-F(r(D_{T-2}))$

$U''(W+B-D_{T-2}) > 0$.

From proposition (3) we have $U'(W+B-D_{T-1}) < U'(W-D^*)$.

Thus, the remaining term in equation (22) is strictly positive.

Thus, we have $K_W > O$.   (QED)
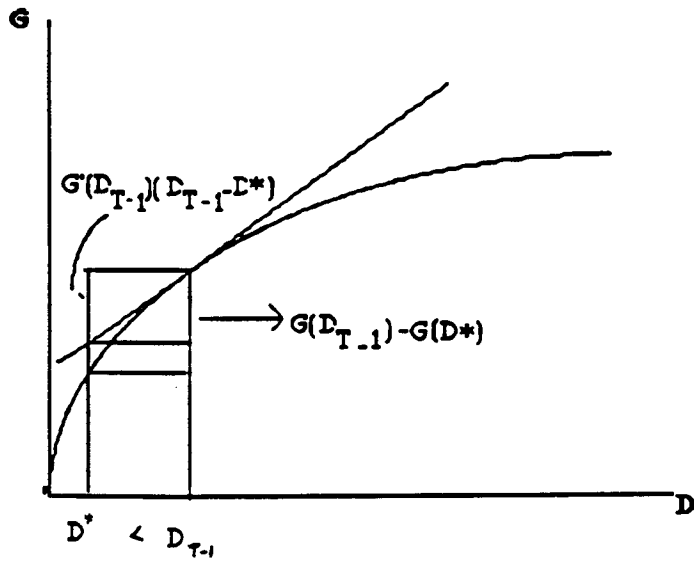
Fig. 1(a) $G(D_{T-1}) - G(D^*) > (D_{T-1} - D^*)G'(D_{T-1})$
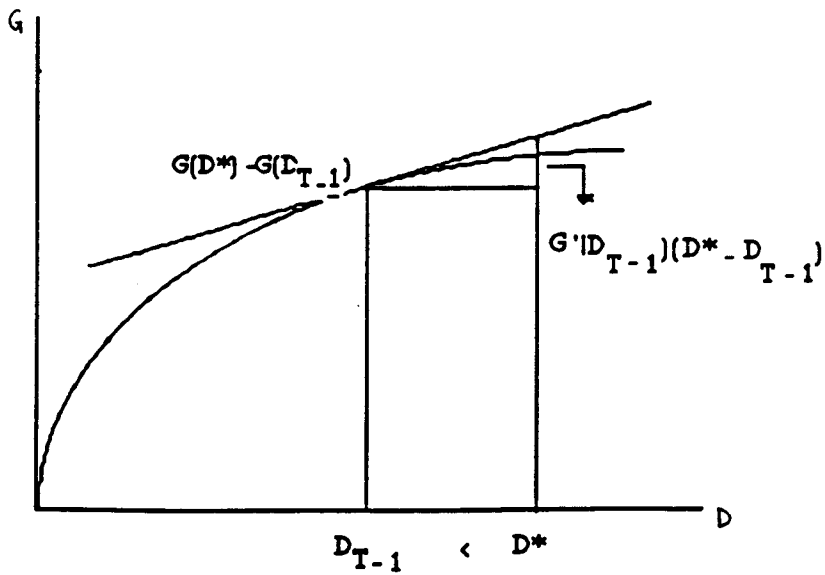
Fig. 1(b) : $G'(D_{T-1})(D^* - D_{T-1}) < G(D^*) - G(D_{T-1})$

FIGURE 1: CONCAVITY OF G( )   101
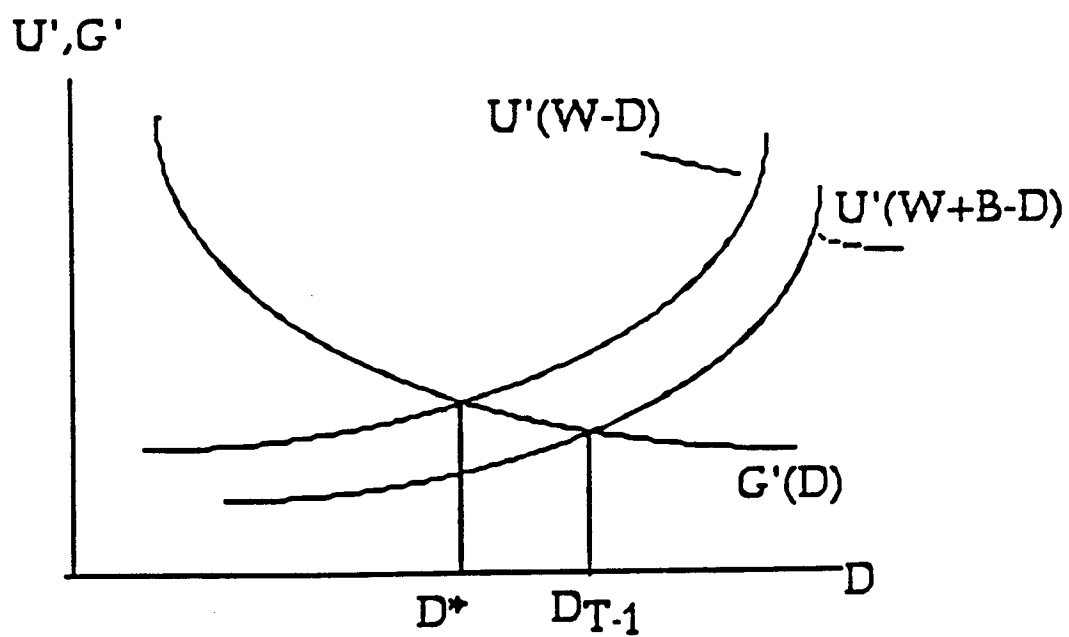
FIGURE 2: Proof that $B - D_{T-2} + D^* > 0$.
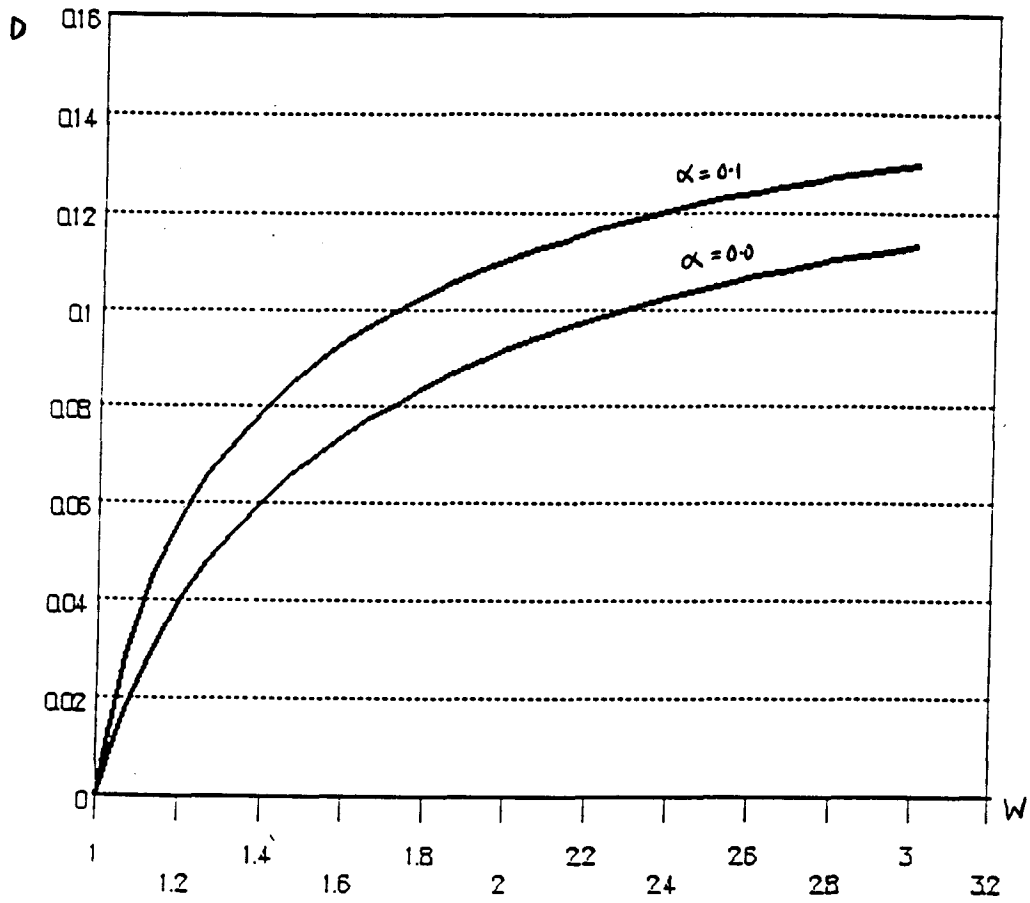
FIGURE S.1: EFFECT OF A CHANGE IN THE

PROBABILITY OF MARRIAGE
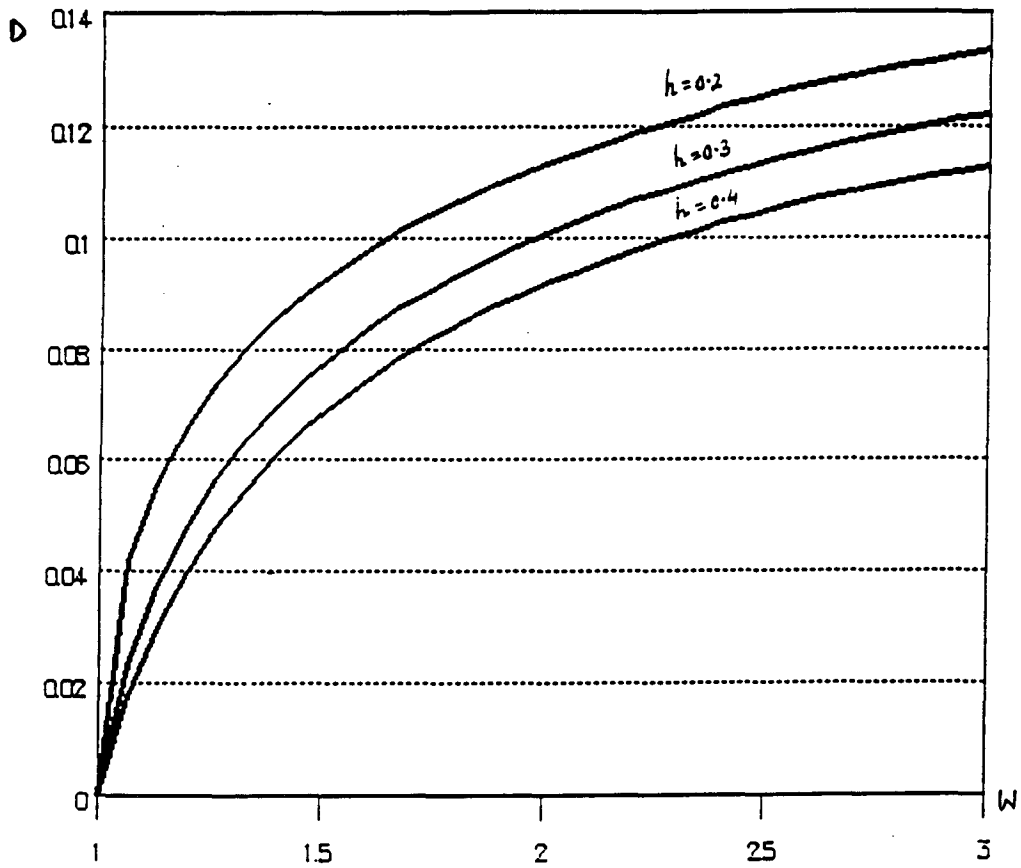
FIGURE S.2: EFFECT OF A CHANGE IN THE
BENEFITS TO THE GROOM
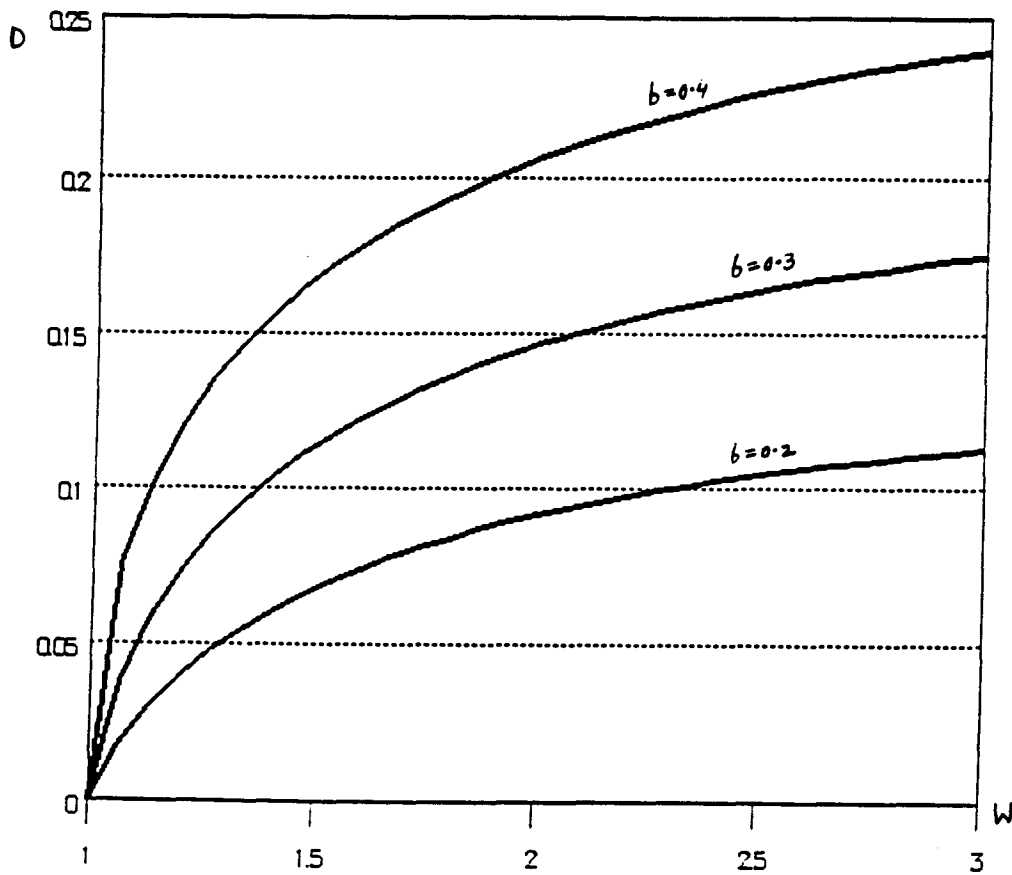
FIGURE S.3: EFFECT OF A CHANGE IN THE

BENEFITS TO THE BRIDE's FAMILY
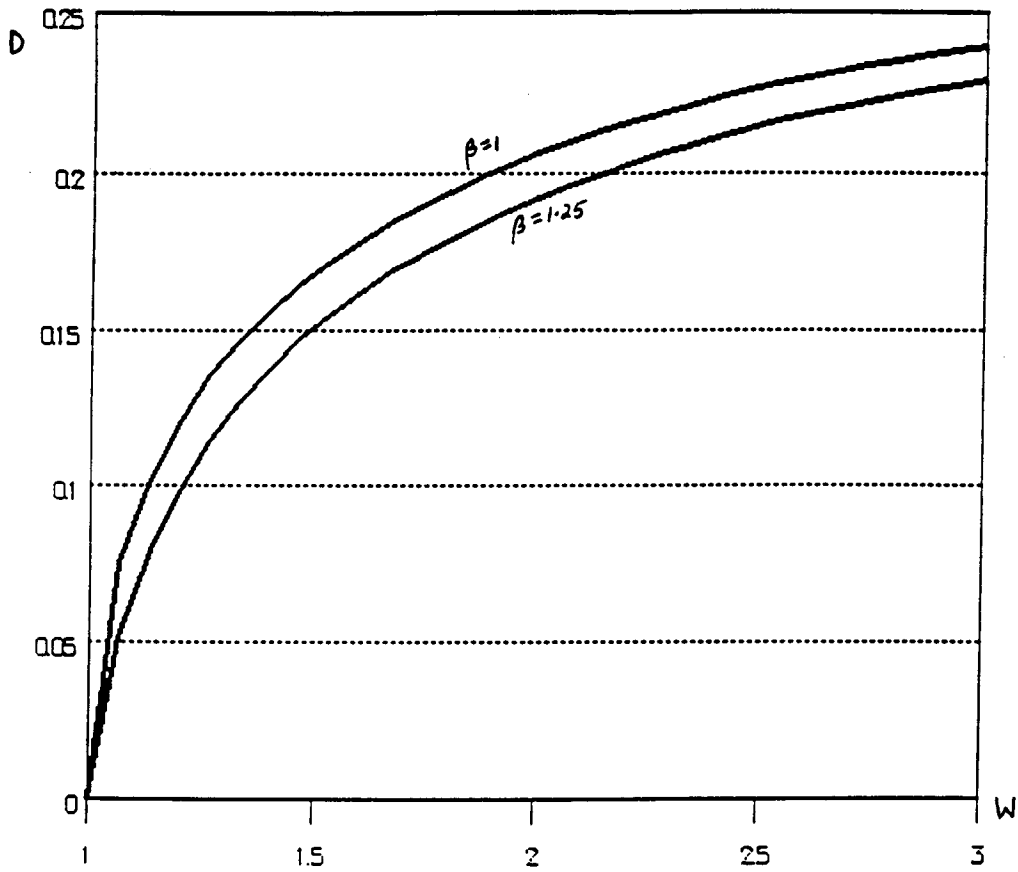
FIGURE S.4: EFECT OF A CHANGE IN THE RISK

AVERSION OF THE BRIDE's FAMILY
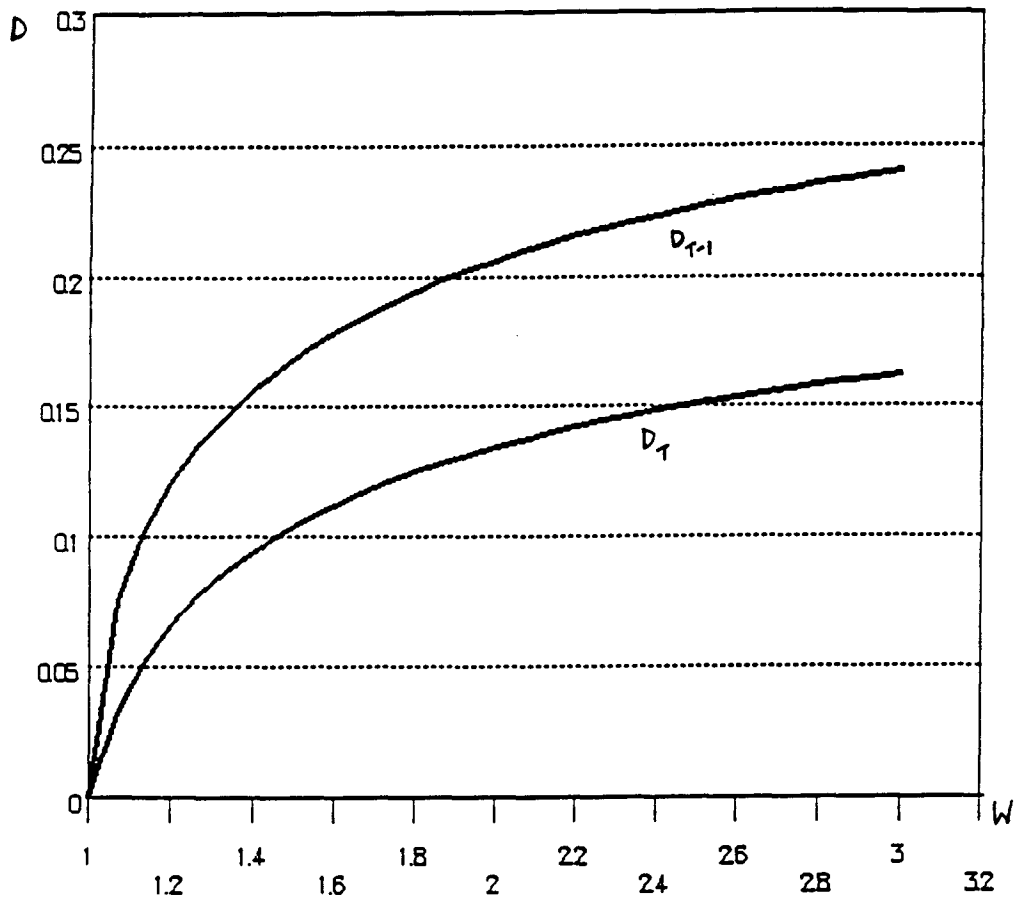
FIGURE S.5 : THE DEPENDENCE OF DOWRY ON THE
AGE OF THE BRIDE

CHAPTER 4

A DESCRIPTION OF THE VILLAGES

1.INTRODUCTION

In the two previous chapters, we have formulated theoretical models that explain dowry in the framework of bargaining and signaling. The next chapter provides an empirical test of the models already set out. The present chapter provide the socio-economic background of the area from which the data used in the next chapter was collected. The data was collected in India by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT).

ICRISAT collected socio-economic data from ten villages in the inland region of the northern part of South India over the ten year period 1975/76- 84/85. Characteristics of each family in the sample, together with various attributes of all family members have been recorded. One of the items recorded was the amount of dowry given or received in each of these households during marriage.

2.THE DATA

Since the main purpose of the village level studies was to understand the traditional farming system in different agroclimatic zones, five districts were selected so as to represent different environmental conditions within the farming sector. For this reason, factors like soil type, and pattern of rainfall, were

considered in making the selection. The five districts selected were -- Mahbubnagar in Andhra Pradesh, Sholapur and Akola in Maharashtra, Sabarkantha in Gujarat and Raisen in Madhya Pradesh.

At least one Taluka, which is a subdivision of a district, was selected from each district. Each Taluka represents a relatively homogeneous region within the district.

At least one village was chosen from each Taluka representing typical characteristics of the Taluka (in terms of cropping pattern, land-use, irrigation, etc.) so as to arrive at a total of ten villages. In order to assure that the selected villages were representative of the traditional situation, those having special programs, above-normal support or resource transfers from outside, or those located near towns and highways were excluded. Table 4.1 lists the villages selected.

In each village, forty respondent households were selected in such a way as to ensure representativeness of each component group of sample households -- laborers, small farmers, medium farmers and large farmers. For laborer households, a random selection of ten households was made from those who operated less than 0.2 hectares of land, and hired out as laborers as their main occupation and source of income. In the case of farm households, representation was given to small, medium and large farmers. No common criterion for classification of farm-size groups was adopted, since there is wide variation in land-man ratios, size of operational holdings and land productivity between districts and villages. In

each village, thirty households from the cultivator group, and ten households from the labor group were randomly selected. Table 4.2 gives for 1975/76 the farm-size classification of all the farms based on operational landholding for each of the ten villages.

Data on household members, animals, farm machinery and implements, farm buildings, material stocks, debt and credit as of the beginning of the cropping year (that is July) were collected for every year between 1975 and 1984. Data on price, household transactions, utilization of labor, animals and machinery, plot and cultivation were collected every month at intervals of three or four weeks.

The data used in this study are from three of the villages that were continuously sampled over the entire period 1975/76 to 1984/85. The villages studied are Aurapalle in the Mahbubnagar district of Andhra Pradesh, Shirapur in the Sholapur district of Maharashtra, and Kanzara in the Akola district of Maharashtra. Household information for each of the ten years is available on the forty sample households in each of these three villages. Aurapalle is located seventy kilometers from Hyderabad, whereas Shirapur is 336 kilometers and Kanzara is 528 kilometers from Hyderabad.

Various characteristics of the three villages are identified in Table 4.3. One important characteristic of these villages is that they are dominated by dry-land agriculture and are virtually untouched by the Green Revolution of India. Thus, the crops that are grown in this area are also the ones not seriously affected by the

Green Revolution, such as has been the case with wheat and rice. The main crops are different types of beans and non-rice cereals. The principal crops grown in Aurapalle are castor and sorghum (Indian millet). Sorghum is also grown in Shirapur and Kanzara, with cotton and mungbean being additional crops grown in the latter village. Being similar types of crops, the factor-intensities are similar.

Again, as shown in Table 4.3, the three villages have little irrigation, with irrigation being 22.2%, 10.4%, and 15.7% of the gross cropped area in Aurapalle, Shirapur and Kanzara, respectively. This is low even by South Indian standards, where the average is between 30% and 40% of total cropped area. Relative to the all-India average, the amount of irrigation is near the lower end of the scale, where the highest percent is found in Punjab with 81% and the lowest is in the Nagaland with less than 10%.

Both Aurapalle and Shirapur have low and erratic rainfall (the annual rainfall being 587 millimeters and 575 millimeters on the average, respectively). In the case of Kanzara, the rainfall is more certain, though still low in quantity (831 millimeters annually). This, again, is very low compared to the annual average rainfall in India as a whole (1250 millimeters), though rather typical of the Deccan Plateau region of South India, where the average is about 600 millimeters.

Shirapur and Kanzara have medium to deep vertisol[1] soils with little water-storage capacity. However, the soil-type in these two villages is better than

that in Aurapalle, which has Alfisol[2] soils with even less water-storage capacity than the others. This, again, is the typical situation for most of the Deccan Plateau.

Table 4.3 also shows that, as of 1975, the average size of operational holdings is 4.6 hectares in Aurapalle, 7.7 hectares in Shirapur and 6.2 hectares in Kanzara, the land-man ratios being .44, .74 and .72, respectively.

Aurapalle is also shown to be the largest of the three villages, with 476 households, followed by 297 in Shirapur and 169 in Kanzara. In terms of population density, Aurapalle has the highest with 167 persons per square kilometer, followed by Kanzara with 156 persons per square kilometer and Shirapur with 110 persons per square kilometer. These averages are all well below the national average of 550 persons per square kilometer, but again, consistent with the average for this region of South India, which is about 150 persons per square kilometer. The percentage distributions among laborer, cultivator, and artisan, trader and shopkeeper households are about the same in each of the three villages, i.e., (1) 30, 32 and 32 being the percentages of laborer households in Aurapalle, Shirapur and Kanzara, respectively, (2) 68, 62 and 64 being the respective percentages of cultivators, and (3) 2, 6 and 4 being the percentages of artisans, traders and shopkeepers. In India as a whole, however, the percentage of cultivators is almost three times that of the laborers. In Aurapalle, there are 146 laborer households, 332 cultivator households and 8 artisan households. The numbers for Shirapur are 97, 183 and 17 respectively, with those for Kanzara being 54, 109 and 6 respectively.

In our sample, forty households were selected from each village, with ten from the laborer class and thirty from the cultivator class. This gives us sampling fractions of 6.85% of the laborers and 9.32% of the cultivators in Aurapalle; 10.31% of the laborers and 16.39% of the cultivators in Shirapur; and 18.52% of the laborers and 27.52% of the cultivators in Kanzara. (These numbers express the number of households in the sample in a particular category as a percentage of the total number of such households in the villages.)

As also can be seen from Table 4.3, the average male daily wage-rate in 1975 rupees is Rs 3.08 in Aurapalle, Rs 3.79 in Shirapur and Rs 4.09 in Kanzara. This compares with some of the lowest in India, where the highest is about Rs 8.14 in Haryana. The average female daily wage ranges from Rs 2.01 to Rs 2.14.

As reported in the Indian Statistical Abstract (1978), the average years of schooling for the region as a whole is 2.5 years for men and 0.8 years for women.

These three villages are predominantly Hindu villages with Muslims and Christians forming a minority. Telegu is the principal language of Aurapalle, while Marathi is the principal language in Shirapur and Kanzara. The caste composition of these villages is like any typical Indian village. In our case, the castes of the households are ranked according to the social, religious and economic standing in the villages, with a slightly greater weight given to religious rank. Table 4.4 gives the caste rank for the different villages.

From the foregoing discussion, it is clear that the three villages sampled come from a region with subsistence, dry-land agriculture, little and erratic rainfall, poor soil conditions and insignificant irrigation. Agricultural incomes are among the lowest in India and educational attainment levels are also low. Inspite of the fact that the villages are economically backward and have poor conditions, it has been our contention in the last two chapters, that dowry is indeed an outcome of a bargaining and signaling process that goes on at the time of marriage. Evidence on the validity of this contention will be presented in the next chapter. From Tables 4.5 and 4.7, we find that dowries constitute a very significant portion of the budget of sample households in which a female got married. In Aurapalle, a household with an average yearly income of Rs 1104 and assets of Rs 11357, paid a dowry of Rs 7309. In the case of Shirapur and Kanzara too, we see a similar pattern. In Shirapur, a household with mean income of Rs 508 and mean assets of Rs 8126 paid Rs 3510 in dowry; in Kanzara, a household with mean income of Rs 706 and mean assets Rs 4572 paid Rs 2487 in dowry. Considering the fact that in South India the incidence of dowry is not as widespread as in Northern India (Miller, 1981), our findings on behavior with respect to dowry payments are all the more striking.

We next review some of the characteristics of the households in which marriage took place over this time period. These are the households sampled by ICRISAT.

During this ten year period, 150 marriages took place in the sample households in the three aforementioned villages; dowry was paid or received in the case of seventy-two of these marriages. Of the marriages that took place, there were seventy-nine cases of a male member of the family getting married, and seventy-one cases of a female member getting married. There were twenty- four households in which marriages took place involving both male and female members of the household. Of the family members who got married, there were seventeen cases where the members were "other relatives" (that is, they were not the spouse, son, daughter, parent or grandchild) of the head of the household. In four instances, a grandchild of the head got married; and there were two cases where the head, himself, got married. The rest of the marriages were either of sons or daughters of the household heads. However, as we will see later, analysis of the data shows that this had no special bearing on the dowry transactions in the marriages. This is in accordance with the very nature and spirit of the extended family system in India, in which two or three generations share the same living quarters. It is not uncommon to have unmarried sisters or brothers living with married brothers and their children. In such a case, the married brothers have equal responsibility as the parents to get their siblings married off. Hence, when the question of dowry arises, no discrimination is made between daughter and sister -- the dowry negotiations in every marriage are independently conducted and do not depend on any other marriage negotiation. The household is willing to pay the

dowry according to the terms of the negotiation, irrespective of who is getting married -- the daughter or the sister of the head.

It should be made clear, again, at this stage, that most of the marriages in India, especially in the villages, are still arranged by parents and family members, and the amount of dowry to be paid or received is determined by negotiations. This is the custom, and there is almost no deviation from it, as noted by authors like Ramanamma (1988),and Sharma (1980).

From the ICRISAT data, information on individual and family characteristics is available on only one of the parties in a marriage. Except for the age of the spouse, no information is available on the other marriage partner. Binswanger and Rosenzweig later collected data on marriage partners through a retrospective questionnaire. Some of this is reported in a study on migration by Rosenzweig and Stark (1987). They report that less than 7% of the household heads in these villages are born outside the village. 94% of the married women were not residents of the village before marriage. Despite geographic exogamy, almost all marital partners are also related by kinship.[3] Also, marriage took place between households with similar income-generating characteristics. In 82% of these marriages, the bride and the groom have parents with either similar amount of dry or irrigated landholdings, or with similar parental schooling level. The mean distance from a sample village to the origin villages of the daughters-in-law is 32 kilometers. Among 49% of the

households with two or more married women, almost 94% of the married women do not come from the same village.

We now turn to some of the characteristics of the sample households in those villages revealed by the ICRISAT data. Table 4.5 summarizes this information.

As shown in Table 4.5, the mean dowry received for males is Rs 9708.9 in Aurapalle, Rs 3649.3 in Shirapur and Rs 8695.0 in Kanzara. For females, the respective amounts paid are Rs 7309.2, Rs 3510.4 and Rs 2487.3. As noted earlier, relative to the average assets and average income of households in which a female got married, these are very high numbers. In Aurapalle, dowries form 64% of average assets and 662% of average income of a household. In Shirapur, dowries form 43% of average assets and 690% of average income of a household. In Kanzara, dowries form 54% of average assets and 352% of average income of a household. One significant fact emerges from this: namely, a very big discrepancy between the dowry received by males and the dowry paid by females in Kanzara. One possible explanation for this emerges from Tables 4.6 and 4.7. We find that in terms of education level, average assets, average income and average land, the male households of Kanzara are significantly better off than the female households. As we will see in the next chapter, higher levels of these traits lead to higher dowries. This could explain the differences in dowry levels.

The mean education levels of the grooms in these three villages in cases of dowry-receiving households are 2.36 years for Aurapalle, 3.88 years for Shirapur

and 11 years for Kanzara (Table 4.6). The mean education of the brides in the dowry-giving households are 5.3 years in Aurapalle, 2.9 years in Shirapur and 1.9 years in Kanzara (Table 4.7). These figures translate to 2.8 years, 4.8 years and 4.9 years in the case of grooms in households where no dowry was received (Table 4.6); and 1.6 years, 2.9 years and 0.4 years in the case of brides in households where no dowry was paid (Table 4.7). The average education of females is higher for dowry households than non-dowry households. This may appear surprising, given that women's "marriageability" increases with education, and the chances of a dowry-transaction taking place, thus, go down. However, since the likelihood of dowry is expected to increase with wealth, and since wealth and education are highly correlated for all three villages (as reported above) in this sample, this fact may not be surprising. For households that engage in dowry transactions, we expect dowry payments to be negatively related to education. The estimation results in chapter 5 confirm this. The multi-variate regression analysis enables us to separate out the otherwise closely related effects of wealth and education on dowry. The mean education of the heads of the households are comparable in the villages with 3.64 and 3.4 years being the numbers for Shirapur and Kanzara and 2.64 being that for Aurapalle (Table 4.5).

In terms of the mean level of assets owned by all the households, as shown in Table 4.5, the figures for Aurapalle and Shirapur are comparable with Rs 7086.24 and Rs 7236.41 respectively, while those for Kanzara are Rs 5623.36.

These are in 1975 rupees. However, we see a discrepancy in average asset holding between households with dowry and those without dowry. In the former case, the mean asset-holdings are Rs 8403.69, Rs 7670.34 and Rs 9102.23 in Aurapalle, Shirapur and Kanzara, respectively, while in the latter case, the respective numbers are Rs 5327.09, Rs 5645.34 and Rs 3167.69 (Table 4.5).

The case of Kanzara seems interesting. There is a large discrepancy between the education levels of the males who got married and the females who got married. Also, the amount of dowry received by male households is larger than the amount paid by female households. One possible explanation for this could be that the households where male members got married are richer than the ones in which female members got married.

The discrepancy between households with marriages that have dowry and those that do not is brought out more clearly if we break up the sample along gender lines as in Tables 4.6 and 4.7. We find that in all cases (with the exception of the female households in Kanzara) the households with dowry transactions have higher average asset level than the households without dowry. From this we can conjecture that males with higher asset levels can demand a dowry, since these assets can translate into greater benefits from marriage to the brides and their families. In the case of households where a female got married, we can argue that the ability to pay dowry is an important consideration at marriage, and households with higher asset levels are willing to pay dowry in order to get their daughters married off. Both

these conjectures are borne out in our regression results in the next chapter. A similar pattern emerges if we take the mean income of the households in these villages. Considering all households, Aurapalle and Shirapur have about the same income levels at Rs 573.3 and Rs 510.8, respectively, whereas Kanzara has a higher income level of Rs 825.1 (Table 4.5).

Again, there are discrepancies in income levels between households with and without dowry. The income levels are Rs 678.8, Rs 533.2 and Rs 1099.8 for those with dowry in Aurapalle, Shirapur and Kanzara, respectively, and Rs 445.5, Rs 428.6 and Rs 631.2, respectively, for those without dowry (Table 4.5). As in the case of assets, these discrepancies are brought out more strikingly if we disaggregate the households along male-female lines (Tables 4.6 and 4.7). We find that in all cases the households with dowry have higher average income levels than households without dowry. Our conjecture would be similar to that provided for average assets. Again, our regression results in Chapter 5, are consistent with these conjectures.

In the case of land (Tables 4.6 and 4.7) we have a different pattern between male and female households. From Table 4.6 we find that average landholdings for male households with dowry-transaction are 7.75 hectares, 5.44 hectares and 11.39 hectares in Aurapalle, Shirapur and Kanzara, respectively, while those for non-dowry households are lower in all cases -- 2.81, 2.58 and 2.08 respectively. This is in the spirit of our earlier findings with respect to average asset and average income in the case of male households. All three attributes reflect a household's

"wealth" and thus for families looking for a groom they signify greater benefits from marriage. Hence, these families are willing to pay a dowry in order to get their daughters married into these wealthier households. On the other hand, in the case of households where a female got married, it can be seen from Table 4.7, that the pattern is different. In particular, in Shirapur and Kanzara, the households without dowry have higher landholdings (5.77 and 4.92 hectares, respectively) than households with dowry (4.79 and 1.87 hectares, respectively). For Aurapalle, however, the situation is reversed with dowry households having a higher landholdings (11.6 hectares) than non-dowry households (9.42 hectares). The cases of Shirapur and Kanzara are consistent with our findings in Chapter 5. Since households lose the marginal product of (female) labor on land when a female household member is married off, they are less willing to pay a dowry.

The question might now be asked whether the differences in the means of the attributes considered so far are statistically significant. A Fisher's T- test was done to check this. With respect to average assets and average income, the difference in means is insignificant at the 99% level between Aurapalle and Shirapur, but significant at the 95% level between Shirapur and Kanzara. Considering dowry versus non-dowry households within villages, the difference in means of average assets and average income is insignificant in Aurapalle and Shirapur and significant at the 95% level in Kanzara. From these tests it appears that while the samples from Aurapalle and Shirapur seem to be drawn from the same population, the one

121

from Kanzara may have been drawn from a different population. In the next chapter, we introduce village dummies in the regressions to test whether this has any impact on the coefficients of the regression analysis.

Of the seventy-two cases where a dowry-transaction occurred, there were fifty-four cases of a reverse transfer. In the case of households where a male member got married, these reverse transfers would include gifts made by these households to the brides' families. In the case of households where a female member got married, these reverse transfers are the gifts received from the grooms' families. From Table 4.8, it can be seen that in all cases, the amount of reverse transfers is very low compared to the dowry, itself. For males, the average amount of dowry received is Rs 9708.9, Rs 3649.3 and Rs 8695.0 in Aurapalle, Shirapur and Kanzara, respectively, whereas, the corresponding amounts of reverse transfer made are Rs 2070.5, Rs 510.4 and Rs 358.0. Similarly, in the case of households where females got married, the average amounts of dowry paid are Rs 7309.2, Rs 3510.4 and Rs 2487.3 in Aurapalle, Shirapur and Kanzara respectively, whereas, the corresponding amounts received in reverse transfer are only Rs 568.3, Rs 1049.1, and Rs 379.3 respectively.

Despite the low amount of reverse transfers relative to the actual dowry amount, we find that the fact that a reverse transfer takes place during a marriage has a significant effect on the amount of dowry paid or received. It will be shown in the next chapter that the average level of net dowry is higher when reverse

transfers are made. As elaborated in the next chapter, reverse transfers presumably occur in "dowry-conscious" households and could be viewed as goodwill gestures after a hard bargaining process to determine the amount of dowry. The fact that reverse transfers indeed indicate a particular type of households is brought out in Table 4.10. A pattern emerges in Shirapur and Kanzara, which together make up about 73% of all households that engage in reverse transfers. We find that in both these villages the households that engage in reverse transfers have more assets, income, land and education level than the households that do not engage in reverse transfer. For Aurapalle, however, this pattern is reversed, except for the case of income.

A possible source of the practice of engaging in dowry transaction could be the caste of a household. Indeed traditionally, the incidence of dowry has been greater among higher caste families. In more recent years, however, lower castes have emulated the higher castes, resulting in increasing instances of dowry transactions among the lower castes (Rajaraman, 1988). Tables 4.9 and 4.10 provide data for each village on the incidence of dowry transactions across the different castes in both households where a male member got married and those where a female member got married. Among households with male marriages (Table 4.9), we find a distinctly higher propensity to engage in dowry transactions in the two upper castes (though in Kanzara castes belonging to rank 3 have a lower incidence of dowry). In the case of households where a female member got married (Table

4.10), the distinction is not so clear. For female marriages, it is difficult to know whether higher castes engage in dowry transactions more frequently than lower castes. This is consistent with our findings in the next chapter, where we see that the caste of a household is not a significant factor in explaining the variation in dowry.

We now turn to some of the other characteristics of the households that are surveyed in the ICRISAT sample. We first consider those households in which a male member was involved in a marriage during the period considered in the sample. Table 4.11 reports the correlation matrix between certain household characteristic variables for these households for each of the three villages.

The variables average income (over the time period of the sample), income in the year in which the dowry transaction occurred, average assets, assets in the year of the dowry transaction and the amount of land held in the year of the dowry transaction are all very highly correlated. This is not surprising because each of these variables should be positively related to the "wealth" of the household. The number of years of education of the groom is fairly highly correlated with the "wealth" variables for all three villages, especially with income and average income. This probably reflects the fact that higher "wealth" reduces the opportunity cost of time spent in education. The correlation between the age of the marriage partner and the education level of the groom is positive and quite high, especially for Shirapur and Kanzara. Considering that the average age at marriage of the bride

in these villages is sixteen, and that the lowest age is twelve, this may reflect that more educated men are unwilling to marry "underage" women.

We next consider the households in which a female member was married during the period considered in the sample (Table 4.12). The correlation between the "wealth" variables is, as before, high across all three villages. Moreover, the correlation between education and the "wealth" variables is also quite strong for females. If education is viewed as an "investment good" in these households, then the correlation between wealth and education should be less important for females than for males, because the benefits from education of female members do not accrue to the parental household. Our findings that higher wealth is associated with higher education lend additional support of the view that the opportunity cost of education is lower for wealthier households. The age at marriage of females is also positively associated with education, reflecting the fact that more educated women tend to delay the date of getting married.

We can also interpret this positive correlation as an indication of the fact that education increases "marriageability". More educated women can afford to stay in their parental households longer without lowering their marriage potential because higher education is a positive trait in marriage negotiations. Chapter 5 elaborates on this further.

3.CONCLUSION:

In this chapter we have tried to describe the socio-economic characteristics of the three villages, Aurapalle, Shirapur and Kanzara, sampled by ICRISAT. As mentioned earlier, ICRISAT has collected data on household characteristics from these three villages over ten years (1975/76 to 1984/85).

Here, we have tried to look at these villages in the all-India context. We have also tried to highlight various characteristics of these villages which are relevant to our study of dowry.

Broadly speaking, we find that all the three villages are economically backward relative to the all-India average. Inspite of this fact, dowry-payment constitutes a very significant proportion in the family budget (64%, 43% and 54% of average assets in Aurapalle, Shirapur and Kanzara respectively). As mentioned earlier, this is all the more striking because the incidence of dowry is relatively lower in South India (Miller, 1981).

Examining the average dowry data in these three villages, we find, from Table 4.5, that in all cases the amount of dowry received by households in which a male member got married is higher than the dowry paid by households in which a female member got married. In Aurapalle, the dowry received in the former case is Rs 9708, while the dowry paid in the latter case is Rs 7309. In Shirapur, the respective numbers are Rs 3649 and Rs 3510, respectively, while in Kanzara, the numbers are Rs 8695 and Rs 2487, respectively. These differences may be

attributed to reporting biases. It is possible that in order to enhance the prestige of a household, the household where a male got married would have a tendency to over-report the amount of dowry received. Similarly, the tendency for a household in which a female got married, would be to under-report the amount of dowry paid because admitting publicly to dowry-payment may be demeaning for the household.

The correlation matrices presented in Tables 4.11 and 4.12 help us in formulating our empirical model in the next chapter. We find that some of the wealth variables are highly correlated. Hence, in our regressions, we cannot include all these variables simultaneously. We explain this further in the next chapter, where we present a correlation matrix for all the villages taken together.

ENDNOTES

1. Vertisol refers to soils with a mixture of sand and loam.

2. Alfisol refers to soils with a high degree of sand content.

3. Kinship means families with at least one common ancestor.

TABLE 4.1

LOCATION OF SAMPLE VILLAGES

Village	Taluka	District	State
Aurapalle	Kalvakurthi	Mahbubnagar	Andhra Pradesh
Dokur	Atmakur	Mahbubnagar	Andhra Pradesh
Shirapur	Mohol	Sholapur	Maharashtra
Kalman	N. Sholapur	Sholapur	Maharashtra
Kanzara	Murtizapur	Akola	Maharashtra
Kinkheda	Murtizapur	Akola	Maharashtra
Boriya	Prantij	Sabarkanthe	Gujarat
Rampura	Prantij	Sabarkanthe	Gujarat
Papda	Gairatganj	Raisen	Madhya Pradesh
Rampura Kalman	Gairatganj	Raisen	Madhya Pradesh

Source:'Manual of Instructions for Economic Investigators' by Singh,
Binswanger and Jodha (1985)

TABLE 4.2

FARM-SIZE CLASS OF POPULATION

Village	Small	Medium	Large
Aurapalle	0.2 - 2.5	2.51 - 5.26	> 5.26
Dokur	0.2 - 1.01	1.02 - 3.04	> 3.04
Shirapur	0.2 - 2.5	2.51 - 5.87	> 5.87
Kalman	0.2 - 6.07	6.08 - 10.77	> 10.77
Kanzara	0.2 - 2.26	2.27 - 5.59	> 5.59
Kinkheda	0.2 - 3.0	3.01 - 5.6	> 5.6
Boriya	0.2 - 0.97	0.98 - 1.98	> 1.98
Rampura	0.2 - 2.37	2.38 - 4.53	> 4.53
Pepda	0.2 - 2.5	2.51 - 5.0	> 5.0
Rampur Kalman	0.2 - 3.64	3.65 - 6.1	> 6.1

Source:Manual of Instructions (1985)

TABLE 4.3

VILLAGE CHARACTERISTICS

	Aurapalle	Shirapur	Kanzara
Soil Type	Alfisol	Medium to Deep Vertisol	Medium Vertisol
Principal Crops	castor, sorghum	sorghum	cotton, sorghum, mungbean
Annual Rainfall (mm)	587	575	831
Average Size of Operational Holding (he)	4.6	7.7	6.2
Irrigation (% of Gross Cropped Area)	22.2	10.4	15.7
Land-Man Ratio	0.4	0.7	0.7
Population Density (number/sq. km)	167	110	156
Number of Households	476	297	169
Number of Laborer Household	146	97	54
Number of Cultivator Household	322	183	109
Number of Artisan Household	8	17	6
Village Daily Wage (1975 Rs) (Males)	3.1	3.8	4.1

Source: (1) Ballabh, V. and T.S. Walker (1986)
(2) Manual of Instructions (1985)

TABLE 4.4

CASTE RANK

AURAPALLE	SHIRAPUR	KANZARA
RANK	RANK	RANK
1	1	1
Brahmin, Reddy, Velaura, Komati	Maratha, Koshti, Rajput,Brahmin	Maratha, Kumbi
2	2	2
Padmasal, Bogaua Sevaka, Telaga	Wani, Mali	Gosavi, Mali
3	3	3
Gavla, Wadla, Kurma	Dhangar, Kumbhar Teli, Koli	Sonar, Kumbhar Sutar
4	4	4
Mali, Madiga	Wadder, Chambar Maher	Parit, Maher, Marg

Source: `Manual of Instructions for Economic Investigators' by Singh, Binswanger and Jodha (1985)

TABLE 4.5

HOUSEHOLD CHARACTERISTICS

	Aurapalle	Shirapur	Kanzara
Mean dowry-in (males) Rs	9708.9	3649.3	8695.0
Mean dowry-out [reverse payment] (males) Rs	2070.5	510.4	358.0
Mean dowry-out (females) Rs	7309.2	3510.4	2487.3
Mean dowry-in [reverse payment] (females) Rs	568.3	1049.1	379.3
Mean education of household head (years)	2.6	3.6	3.4
Mean assets (1975 Rs) (all households)	7086.2 (7132.5)	7236.4 (5932.1)	5623.4 (7176.2)
Mean assets in households with dowry (1975 Rs)	8403.7 (8311.6)	7670.3 (6214.2)	9102.2 (8290.2)
Mean assets in households without dowry (1975 Rs)	5327.1 (5410.4)	5645.3 (4404.7)	3167.7 (4976.3)
Mean income (1975 Rs) (all households)	573.3 (374.5)	510.8 (176.8)	825.1 (679.2)
Mean income in households with dowry (1975 Rs)	678.8 (389.1)	533.2 (167.1)	1099.8 (875.2)
Mean income in households without dowry (1975 Rs)	445.5 (357.2)	428.6 (186.9)	631.2 (394.3)

(The standard deviations are within parentheses)

TABLE 4.6

CHARACTERISTICS OF SAMPLE HOUSEHOLDS IN WHICH
A MALE MEMBER GOT MARRIED

		Aurapalle	Shirapur	Kanzara
Education (years)	Households with dowry	2.4	3.9	11
	Households without dowry	2.8	4.8	4.9
Average Assets (1975 Rs.)	Households with dowry	8108.6 (7506.3)	7774.2 (4929.2)	13670.1 (8112.4)
	Households without dowry	5761.1 (5831.1)	5357.3 (3768.1)	2352.5 (2002.7)
Average Income (1975 Rs.)	Households with dowry	608.3 (205.6)	564.8 (190.8)	1497.7 (958.1)
	Households without dowry	525.3 (339.3)	499.6 (215.5)	546.1 (148.1)
Land (hectares)	Households with dowry	7.8 (10.7)	5.3 (3.2)	11.4 (8.9)
	Households without dowry	2.8 (2.9)	2.6 (1.9)	2.1 (2.8)

(The standard deviations are within the parentheses)

TABLE 4.7

**CHARACTERISTICS OF SAMPLE HOUSEHOLDS IN WHICH
A FEMALE MEMBER GOT MARRIED**

		Aurapalle	Shirapur	Kanzara
Education (years)	Households with dowry	5.3	2.9	1.9
	Households without dowry	1.6	2.9	0.4
Average Assets (1975 Rs.)	Households with dowry	11357.3 (10681.7)	8126.7 (7125.4)	4572.9 (4433.7)
	Households without dowry	7567.2 (8401.8)	8079.3 (7286.8)	5010.1 (6692.9)
Average Income (1975 Rs.)	Households with dowry	1104.3 (850.2)	508.4 (154.1)	706.2 (388.6)
	Households without dowry	467.4 (214.2)	434.8 (130.2)	624.4 (377.3)
Land (hectares)	Households with dowry	11.7 (12.5)	4.8 (4.9)	1.8 (1.9)
	Households without dowry	9.4 (12.6)	5.8 (5.5)	4.9 (7.6)

TABLE 4.8

REVERSE TRANSFER HOUSEHOLDS AND
NON-REVERSE TRANSFER HOUSEHOLDS (IN SAMPLE)

		Aurapalle	Shirapur	Kanzara
Education (years)	Households with reverse transfer	3.3	3.7	8.5
	Households without reverse transfer	4.3	1.5	4.5
Average Assets (1975 Rs.)	Households with reverse transfer	8138.5	8042.6	13859.7
	Households without reverse transfer	14485.7	7457.9	4549.1
Average Income (1975 Rs.)	Households with reverse transfer	822.3	533.5	1589.9
	Households without reverse transfer	744.1	530.3	623.1
Land (hectares)	Households with reverse transfer	6.8	5.2	8.6
	Households without reverse transfer	15.9	3.2	4.4

TABLE 4.9

INCIDENCE OF DOWRY AMONG DIFFERENT CASTES IN SAMPLE MALE HOUSEHOLDS

		Aurapalle	Shirapur	Kanzara
Caste 1	% of Households with dowry	80	75	60
	% of Households without dowry	20	25	40
Caste 2	% of Households with dowry	100	100	54.5
	% of Households without dowry	0	0	45.5
Caste 3	% of Households with dowry	62.5	100	0
	% of Households without dowry	37.5	0	100
Caste 4	% of Households with dowry	16.6	25	20
	% of Households without dowry	83.4	75	80

TABLE 4.10

INCIDENCE OF DOWRY AMONG DIFFERENT CASTES IN SAMPLE FEMALE HOUSEHOLDS

		Aurapalle	Shirapur	Kanzara
Caste 1	% of Households with dowry	75	46.1	0
	% of Households without dowry	25	53.9	100
Caste 2	% of Households with dowry	100	100	50
	% of Households without dowry	0	0	50
Caste 3	% of Households with dowry	60	83.3	0
	% of Households without dowry	40	16.7	100
Caste 4	% of Households with dowry	0	40	33.3
	% of Households without dowry	100	60	66.7

TABLE 4.11

CORRELATION MATRIX FOR MALE HOUSEHOLDS

Aurapalle

	Ed	Land	Income	Asset	Average Income	Average Asset	Age
Ed	1.0						
Land	.23	1.0					
Income	.51	.59	1.0				
Asset	.48	.87	.83	1.0			
Average Income	.65	.63	.96	.84	1.0		
Average Asset	.54	.86	.89	.98	.86	1.0	
Age	.46	.50	.82	.64	.85	.66	1.0

Shirapur

	Ed	Land	Income	Asset	Average Income	Average Asset	Age
Ed	1.0						
Land	.42	1.0					
Income	.43	.78	1.0				
Asset	.39	.94	.80	1.0			
Average Income	.53	.69	.88	.77	1.0		
Average Asset	.45	.91	.81	.96	.82	1.0	
Age	.66	.71	.85	.72	.89	.76	1.0

TABLE 4.11 (continued)

CORRELATION MATRIX FOR MALE HOUSEHOLDS

Kanzara

	Ed	Land	Income	Asset	Average Income	Average Asset	Age
Ed	1.0						
Land	.54	1.0					
Income	.61	.58	1.0				
Asset	.61	.79	.79	1.0			
Average Income	.81	.44	.71	.62	1.0		
Average Asset	.81	.59	.55	.69	.88	1.0	
Age	.77	.47	.67	.54	.81	.61	1.0

TABLE 4.12

CORRELATION MATRIX FOR FEMALE HOUSEHOLDS

Aurapalle

	Ed	Land	Income	Asset	Average Income	Average Asset	Age
Ed	1.0						
Land	.8	1.0					
Income	.49	.48	1.0				
Asset	.75	.71	.85	1.0			
Average Income	.69	.58	.79	.94	1.0		
Average Asset	.81	.78	.69	.95	.9	1.0	
Age	.62	.59	.73	.66	.71	.66	1.0

Shirapur

	Ed	Land	Income	Asset	Average Income	Average Asset	Age
Ed	1.0						
Land	.45	1.0					
Income	.26	.29	1.0				
Asset	.30	.79	.21	1.0			
Average Income	.43	.54	.66	.56	1.0		
Average Asset	.54	.93	.28	.88	.64	1.0	
Age	.56	.53	.53	.49	.87	.62	1.0

TABLE 4.12 (continued)

CORRELATION MATRIX FOR FEMALE HOUSEHOLDS

Kanzara

	Ed	Land	Income	Asset	Average Income	Average Asset	Age
Ed	1.0						
Land	.16	1.0					
Income	.47	.68	1.0				
Asset	.38	.83	.82	1.0			
Average Income	.65	.69	.81	.83	1.0		
Average Asset	.55	.78	.71	.89	.94	1.0	
Age	.49	.48	.72	.56	.82	.63	1.0

CHAPTER 5

EMPIRICAL EVIDENCE

1.INTRODUCTION

The prevalence of dowry has been noted in the Introduction. As we have seen, it is still a dominant form of marriage payment in a significant part of Asia. It was an important consideration at the time of marriage in parts of Europe also, at least until recently.

We have also seen, in the Introduction, that marriage is often an economic and social necessity for women in many Asian countries. As such, dowry payments, which in many societies are a virtual prerequisite to marriage of daughters, become very important in the context of family budget decisions. Often, families are obliged to pay more than they can afford, and hence, indebtedness occurs. In fact, productive investments often suffer because of dowry payment (Bavinck, 1984). This is true of our sample of the three villages of Aurapalle, Shirapur and Kanzara. As noted in the previous chapter, we find that relative to average assets of households, dowries constitute 64% in Aurapalle, 43% in Shirapur and 54% in Kanzara. Relative to average income the percentages are more striking -- 662% in Aurapalle, 690% in Shirapur, 352% in Kanzara. Given such importance in household budget considerations of a large part of the world's population, the lack

of systematic empirical studies of the determinants of dowry payments has been surprising. The studies that we have mentioned earlier have been mostly descriptive and anecdotal. Almost without exception, data collection in these studies has been scanty and no attempt has been made to show any causal link between the different attributes of the marriage partners and dowry. As a result, there have been no rigorous tests of hypotheses regarding the factors that influence dowry, nor has there been any attempt to test the relative significance of these factors. The focus of these studies has been narration of instances in which dowry payment was made, without any attempt at analysis.

In the case of other studies, the primary focus has not been marriage or dowry, but rather the broader anthropological issues like the living patterns of entire races and clans. These studies have mentioned dowry in passing, without going into any kind of analysis of the subject. Thus the existing empirical work on dowry has neither been systematic nor central to the study of the determinants of dowries.

The primary reason for the absence of empirical studies has been the lack of systematically collected data which is in turn attributable to the inherent difficulty of obtaining information on items of such a private nature. To my knowledge, the only data set available for analyzing dowry is the one collected by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in Hyderabad, India. Details of the data set, as well as the socio-economic characteristics of the villages, have been discussed in Chapter 4.

2.THE EMPIRICAL MODEL

The basic motivation of our empirical work is to test the hypothesis that dowry is determined primarily through a bargaining process. The theoretical foundations for this view were developed in Chapter 2. An alternative explanation of dowry to be found in the literature is the view that dowry is a "pre-mortem inheritance". Our contention throughout this dissertation has been that the "pre-mortem inheritance" thesis, though perhaps adequate in explaining dowry payment in Europe, fails to capture the true nature of dowries in Asia. As such, it is the relevant alternative hypothesis in our context. The other hypothesis explaining dowry to be found in the literature is that dowry is the outcome of an unfavorable male-female ratio. Unfortunately, our data set does not enable us to consider this alternative hypothesis.

As mentioned in Chapter 4, the dowry data that was collected includes both cash and kind payments. The value of all transfers at marriage was included in dowry. Hence, the value of jewelry, clothing, utensils, etc. together with any cash transfer, were included in dowry. Further, as mentioned above, an important consideration in this study is the distinction between dowry and "pre-mortem transfers of inheritance". As a proxy for inheritable wealth, per capita assets of a family were used. Per capita assets is a good proxy for inheritable wealth, since it includes livestock, consumer durables (e.g., houses, furniture, utensils, bicycles,

145

etc.), farm equipment (e.g. ploughs, seed drills, tractors, etc.), savings, financial assets, etc.

The bargaining model outlined in Chapter 2 has identified several factors, e.g., the education of the bride and groom, the age of the bride, respective family wealth, assets, landholdings, etc. as important determinants of dowry. Therefore, if these variables are found to be significant and of the right sign, then that would tend to support the bargaining view; whereas, the alternative hypothesis would suggest that only the per capita assets of a family would be significant. Variables, like the age of the bride, education of the bride and the groom, the wealth of the groom's family are not relevant in the "pre-mortem inheritance" thesis. Since the alternative hypothesis maintains that the transfer should equal bequeathable wealth, an appropriate test of this hypothesis would be to determine whether or not the coefficient of per capita bequeathable assets is significantly different from one. However, it may be noted that the dividing line between bequeathable and non-bequeathable assets is rather tenuous, and the available data on assets is not aggregatable. With per capita assets consisting of all assets other than land being measured in rupees , and land being measured in hectares, neither separate measure is an exactly appropriate measure of bequeathable assets. However, since all these assets are in principle bequeathable, we would expect the coefficient of both variables to be close to unity.

A major shortcoming of the data for purposes of testing the determinants of dowry is that relevant information is available for only one of the parties of each marriage. Thus, e.g., in a case in which a female member of the village got married, even if the groom is from within the village, no information is available about the groom's family, its wealth or other attributes. Similarly, in the case in which a male member of the village got married, no matter where the bride is from (inside or outside the village), the only information available about the bride's side is the age of the bride.

This data shortcoming, however provides us with an alternative way of testing the null hypothesis that dowry is primarily a matter of "pre-mortem inheritance." For the regressions in which the groom is from one of the three villages and the bride is from outside, (henceforth called the "male regression"), we do not have data on assets per capita of the bride's family. The null hypothesis would imply that the regressions involving the variables suggested by the bargaining approach would have no explanatory power as measured by an F-test.

In the bargaining view, the most important attributes of the family that determine the level of dowry are--the education of both the bride and groom, the amount of land owned by the families, the per capita income and asset of the families, and very importantly, in the case of marriage of females, the age of the bride. Let us examine the effect of each of these in turn. In our empirical work, we test the following hypotheses.

(i) The amount of education received by the bride and the groom seems to be a very important attribute upon which a bargaining process can be initiated. More years of education of any spouse increases the lifetime earning potential of that spouse and therefore of the family. Purely on these terms, a groom who has a good educational background would demand a higher dowry. He would be better able to provide for his own family and also his in-laws if the situation arises. Hence, from the point of view of the bride's family, he would be a better match, and they would be able to turn to him in times of need, e.g., a crop failure. The family of a groom with a higher education would thus demand more dowry, and the family of the bride would, correspondingly, be willing to pay a higher dowry. However, if the bride herself has a good education, then her family would be losing her lifetime earning potential by marrying her off. As a result, they would be willing to pay a smaller dowry and the groom's family may be willing to accept a smaller dowry.

In our empirical work, we test for the effect of education on dowry and examine whether the effect is significant. We also examine whether this would be affected by caste and other family characteristics.

(ii) What has been said about education would also hold true in case of land, assets and income. If a groom's family is well endowed with these three attributes, they would demand a higher dowry and the bride's family would be willing to pay the higher amount. The effect of the wealth of the bride's family is

somewhat less clear, a priori. While higher wealth increases the "ability to pay" dowry, higher wealth could also provide potential future benefits to the groom's family (e.g. insurance, family connections) and cause dowry payments to be lower. Note that the inheritance view would always imply that the effect of wealth on dowry would be positive.

Among the wealth variables, the role of land owned by the female household is particularly ambiguous. It could be expected that the higher amount of land owned by the bride's family, the lower the amount of dowry that they would be willing to give. Since women work in family owned land, the more land owned by the bride's household, the more the loss of (marginal) productivity when the bride leaves her natal household. Hence, to compensate for this, a lower dowry would be offered.

For the purposes of our regression analysis, the land and assets of the previous year (i.e. the year before the marriage occurred) have been used. Actually, in the current year, dowry transfers would already have been made at the time of marriage. Negotiations are carried on before marriage, and therefore, a family's ability and willingness to pay dowry would be based on its wealth and other characteristics before any transfer. Thus, wealth of the previous year is a more appropriate measure than current wealth. Alternatively, one can use average income and assets over the period. Being a measure of permanent income and asset,

these would give a truer picture of a household's ability to pay dowry for females and its potential to receive dowry for males, at the time of marriage.

(iii) We next consider the question of the age of marriageable females. It is customary in India, and more so in the rural areas, to marry the daughters off very early. The average age is around sixteen or seventeen, with instances of still lower age not being uncommon. Almost no one takes heed of the fact that the legal age of marriage is eighteen. The women of the family are married off as soon as a suitable groom is found. As the daughter gets older, the family feels the pressure of marrying her off and would do so even at the cost of paying a higher dowry. As our bargaining model suggests, the dowry becomes a payment in order to lift the social stigma that would be attached to the family and the unmarried bride, as she gets older. This should be more realistic in the case of wealthy families who are willing to pay larger amounts if their daughters cross the acceptable marriageable age. Thus one would expect to see the effect of age on dowry to be stronger for wealthier families.

It should be pointed out here that in many of the instances where marriage took place, reverse transfers have been recorded--i.e., the family of the bridegroom has also made a transfer to the family of the bride. As will be discussed in detail below, the average level of net dowry was significantly higher when such reverse transfers were present. We do not suggest that such reverse transfers constitute reliable strategy for significantly affecting the net transfers being made, (e.g., as

a gesture of good will to the other family)--if so, then it would be hard to explain why every family would not take advantage of this to increase the net transfer to itself.   Rather, since   there is considerable difference across families in their attitudes towards dowry, families that engage in this reverse transfer are, in all probability, families in which dowry transactions are an especially well accepted and integral part of marriage. We conjecture that the practice of reverse transfers may have become important historically as a means of ameliorating the other party after hard bargaining during dowry negotiations. As such, we can expect families engaging in reverse transfers to be more "dowry conscious" than others.

As mentioned in Chapter 4, during this ten year period, 150 marriages took place in sample households in these villages and dowry was paid or received in the case of 72 of these marriages. Of the marriages that took place, there were 79 cases of a male member of the family getting married, and 71 cases of a female member getting married, with 24 households in which both   male and female members got married. Of the family members who got married, there were 17 cases where the members were "other relatives" (i.e., they were not the spouse, son, daughter, parent or grandchild) of the head of the household. In four instances, a grandchild of the head got married; and there were two instances where the head himself got married. The rest of the marriages were either of sons or daughters of the household heads. However, as we will see later, analysis of the data shows that the relationship of the party getting married to the household head

had no special bearing on the dowry transaction in the marriages. This is in accordance with the very nature and spirit of the extended family system in India in which two or three generations share the same living quarters. It is not uncommon to have unmarried sisters or brothers living with married brothers and their children. In such cases, the married brothers have equal responsibility as the parents to get their siblings married off. Hence, when the question of dowry arises, no discrimination is made between daughter and sister; in every marriage, the dowry negotiations are independently conducted and do not depend on other marriage negotiations. The household is willing to pay the dowry according to the terms of the negotiation, irrespective of who is getting married--the daughter or the sister of the head.

As noted many times earlier (e.g., in Chapter 2), the social norm is to get the female members of a household married off early. Otherwise, a social stigma is attached to them and indirectly to the family and it becomes increasingly difficult to get them married off. Hence, a household will go to great lengths to pay dowries in order for their females to be married off.

In what follows, we have broken up the data set for purposes of the regression analysis along male-female lines; i.e., separate regressions have been run for marriages of male and female households members. In the case of males, the dependent variable is "dowry in", i.e. the amount of dowry received by the household at the time of marriage. In the case of females, the dependent variable

is "dowry out"--the amount of dowry paid by the household at the time of marriage. Since not all marriages involve dowry transactions, we have, here, a case where the dependent variable, 'dowry' is either positive or zero. Thus, the dependent variable has a number of its values clustered at the limiting value of zero. We have here a censored regression framework. We use the Tobit technique, (formulated by Tobin in 1958), to estimate our regression equation. This technique uses all observations, both those at the limit and those above it, to estimate a regression. An alternative technique, like OLS, gives us asymptotically biased estimates. There will be bias due to the fact that the error term will not be independent of the explanatory variables, and $E[u|x] \neq 0$ (Madalla, 1985). The Tobit estimator, on the other hand, gives us consistent maximum likelihood estimates of the coefficients of the regression equation and the variance. The basic equations to be estimated are :

$$DOWOUT_i = H_1 + \Sigma_i b_i X_i + e_i \qquad (1)$$

$$DOWIN_i = H_2 + \Sigma_i s_i X_i + \epsilon_i \qquad (2)$$

Equation 1 is relevant to the cases where a female family member got married. Here, $DOWOUT_i$ represents the dowry paid out by the ith household at

the time of marriage. This is zero or positive. x_i is a vector of explanatory variables which we will specify later and e_i is the random error term. The other coefficients have standard interpretation.

Equation 2 pertains to the cases where a male family member got married. Here $DOWIN_i$ represents the dowry received by the ith household at the time of marriage. It is zero or positive. x_i is defined as in equation (1) and ϵ_i is a random error term.

Table 5.1 describes the explanatory variables that are used in equations 1 and 2 --

TABLE 5.1: Variable Definitions Used In Explaining

Dowry

1. ED: Years of education of the
        household member who got married.

2. CASTE: Dummy for the caste to which
           the household member belongs.
           (Table 4.4 provides details).

3. INC: Total income per capita of the
         household in the current year.

4. PRELAND: Amount of land (in hectares) owned
             by the household in the year
             previous to the one in which the
             marriage took place.

5. PREASSET:	Amount of asset per capita other than land owned by the household in the year previous to the one in which marriage took place.
6. AVEINC:	Average income per capita of the household over the 10 year period.
7. AVEASSET:	Average asset per capita of the household over the 10 year period.
8. AGE:	Age of the bride at the time of the marriage.
9. FDOWCON:	Amount of dowry received by a household. This is a reverse transfer and is an explanatory variable in the case of a female member getting married.
10. MDOWCON:	Amount of dowry paid by a household. This is a reverse transfer and is an explanatory variable in the case of a male member getting married.
11. DUM 1:	Dummy created for MDOWCON (in case of males)
12. DUM:	Dummy created for household in which both male and female members got married.

In what follows, we discuss the results obtained from estimating the

parameters of equations (1) and (2) using both OLS and Tobit methods of

estimation. For the reasons given above, the Tobit estimates are the more appropriate ones. However, we also give the OLS estimates for comparison purposes. Note that, although the relevant information is missing for one of the parties in the marriage transactions, for the _female_ regressions, under the null hypothesis that only the wealth variables on the female side should be significant in accordance with the "pre-mortem bequest" view of dowry, the omission of other information does not cause a mis-specification problem. For the male regressions, however, the omission of information on the female wealth variables represents a mis-specification. When the regression equations are mis-specified to begin with, it is no longer clear that Tobit is superior to OLS. A test of the null hypothesis here is whether a model that leaves out the female wealth variables as explanatory variables can have any explanatory power.

Table 5.3 gives the results of the female regressions from both OLS and TOBIT procedures.

Table 5.5 gives the results of the male regressions, again for both OLS and TOBIT techniques. In all cases, the figures in parentheses are the relevant t-ratios.

The main results obtained from the empirical exercise are summarized below. We will discuss these results in detail as we discuss each regression, when we will be referring to specific tables. For now, we merely state the main results.

In the case of households where a female got married, the following results are obtained.

1. As conjectured, education of the bride (ED) seems to be quite an important variable in dowry decisions. In all the cases where it is significant, it has a negative effect on dowry, indicating that expectations about the potential lifetime earnings of the bride improves the bargaining position of the bride's household. This effect is more pronounced for those brides with higher levels of education.

2. Average income and average assets (or previous period assets) are found to have significantly positive effects on dowry. This is consistent with both the "pre-mortem bequest" and bargaining views. From the standpoint of the latter view, it indicates the dominance of the "ability to pay" effect (which would imply that higher female wealth leads to higher dowry) over the "insurance" effect.

3. An important result is that, in contrast to other forms of wealth, land owned by the household has a significantly negative effect on dowry. We suggest that this may be because the bride's household values her productive labor.

4. Rather importantly, our conjecture about age is borne out by the empirical results. Specifically, other things being equal, as age of the bride increases, dowry-payment increases, and the rate of increase also rises with age. This supports the notion that a social stigma is attached to a unmarried woman after a certain age -- the household is willing to pay a higher dowry in order to marry her off and hence to avoid this stigma. Also, if a woman is older, a higher educational level does not seem to diminish the amount of dowry to be paid. As pointed out by Ramanamma (1980), this is true even in an urban setting. Hence,

the result is quite general. Also, dowry seems to increase with age more markedly in the case where the bride's family is able to pay the higher amount. Hence, the ability to pay seems to be a very important consideration in the negotiating process.

5. Households differ in terms of their attitudes towards dowry. It is observed that some households have the custom of engaging in a reverse transfer, i.e., a payment originating from the male household to the female household. It may be conjectured that the level of this transfer reflects dowry consciousness. In our regressions we find that the reverse payment in terms of gifts that are received by the bride's family at the time of marriage always has a significantly positive effect on dowry.

6. Dowry to be paid in the case of female members does not seem to be affected by any expectations about dowry to be received in marriage of male members. Hence, the expenditure on each marriage is independent of that on any other marriage in the family. This again, could be seen to support the bargaining view of dowry. The dowry in each marriage is determined solely by the merits of that marriage and the bargain struck between the parties.

In the case of a household where a male member got married, the following results are obtained. Again, we do not go into detail here.

a. As hypothesized, the educational level of the groom is a very important factor in determining the dowry. The quality of life improves if a groom is educated, and thus a higher level of dowry results.

b. As hypothesized, average income, land and other assets owned by the groom's family all have significantly positive effects on the dowry received.

c. As in the case of the female regressions, the reverse transfer has a positive effect on dowry.

d. Age of the bride, by itself, is insignificant in the regressions. One reason for this could be that we could not bring in the effect that the ability to pay dowry has on age, because of data limitations.

For grooms with higher average income, land and other assets, the dowry received increases with the age of the bride. This result supports our conjecture that dowry is settled through bargaining and the fact that the age of the bride is important in dowry negotiations.

Before discussing the regression results in detail, we briefly outline the manner in which the regressions are presented.

Table 5.2 provides a correlation matrix of the variables used in the regressions for households in which female members got married. Since there is a high degree of correlation between some variables (e.g., between land currently held and assets held in the previous year, land held in the previous year and average assets, etc) not all variables could be used in the same regression. Also, since the number of observations is relatively small (76 in the cases of families where a male member got married, and 72 in the cases of families where a female member got married), our strategy has been to use only a few of the variables at a time in order

to preserve the degrees of freedom. This has resulted in having to report a fairly large number of regressions. As is customary, we only report the ones with relatively high R^2. In our detailed discussion of the regressions, the focus of each has been discussed.

In the cases of both the male and female regressions, our preferred specifications are the first regressions reported in Tables 5.3 and 5.5 respectively. The other regressions are variants of this "standard", and serve to investigate a specific issue . For example, Regression F8 in Table 5.3 addresses the issue of whether the relationship of the person who got married to the household head has any bearing on dowry payments, etc.

We now provide a brief justification as to why we consider Regression F1 in Table 5.3 to be the representative regression for households where a female got married. Firstly, the correlation matrix in Table 5.2 shows us that none of the explanatory variables used in this specification are highly correlated to one another. Second, the explanatory power of the regression, measured by R^2, is highest among all regressions (being .68). Third, the coefficients of all the variables, except average income (AVEINC) are statistically significant in the regression. We have included AVEINC in the regression, and also a term for the interaction of AVEINC with the age of the bride (AGE) mainly because we wanted a 'flow' variable in the regression (as opposed to only 'stock' of wealth variables like land and other assets held by the household).[1]

3.FEMALE REGRESSIONS :

Let us now discuss Regression F1 of Table 5.3 in detail.

Here, the explanatory variables considered are--(1) education of the bride (ED), (2) land and other assets owned by the bride's household in the year previous to the one in which the marriage took place (PRELAND and PREASSET), (3) age of the bride (AGE), (4) the amount of transfer received by the household from the family of the groom FDOWCON, (5) and average income of the household (AVEINC). In order to allow for nonlinearities in the effects of and interactions among the explanatory variables, certain non-linear and interactive explanatory variables are introduced in certain cases, namely (6) squared terms for the age and education of the bride are [AGE^2 and ED^2]. Additionally, (7) age and education in the case of the bride, and (8) age of the bride and average income of the household are considered as interactive variables.

The latter two variables pick up the effect of the age on dowry payment when age varies together with education and income, respectively. The use of squared terms of age and education is to see if the effects of age and education on dowry are more or less than proportional for higher levels of the variables.

From both the OLS and Tobit results presented in Table 5.3, it can be seen that the effect of education on dowry is negative. Thus, as we conjectured, the higher the education level of the bride, the lower would be dowry. This may indicate that education increases the bargaining power of the bride's family. We

can conjecture that the potential lifetime earnings of the bride would increase with education, and that these earnings would be enjoyed by the groom's family. Hence, the bride's family would be less willing to pay a higher dowry. It is also possible that more educated brides may be more opposed to the practice of dowry, although other studies seem to reject this possibility (Ramanamma [1980]). Education is significant at the 5% level in the case of OLS and at the 10% level in the case of Tobit.

Moreover, the fact that the ED^2 variable also is negative (and significant at the 1% level in Tobit) adds to the strength of the negative effect of female education on the dowry paid by the bride's family. Thus for higher levels of education of the bride, the amount of dowry paid would be more than proportionately lower. The value of assets owned by the household in the previous year (PREASSET) has a positive effect, as hypothesized, and is significant at the 1% level in the case of both Tobit and OLS results. Hence, the higher the value of assets possessed in the bride's family, the higher would be the amount of dowry paid. The same is true, of the average income (AVEINC) of the bride's family. Both these reflect the ability to pay dowry. The higher the ability to pay, the higher would be the amount paid.

At the same time, however, note that land owned by the household in the previous year (PRELAND), has a negative effect and the coefficient is significant a the 1% level. As will be seen later, in all the regressions PRELAND has a

negative sign. Thus, the greater the land owned by the bride's household, the lower is the amount of dowry paid. This may well suggest that, in the Indian context in which at marriage the bride moves out of her natal household into that of the groom, when the woman gets married, the family loses her productive power on their land. This loss is greater (her marginal productivity is higher) the greater the amount of land owned by the bride's family. Hence, the amount of dowry that the bride's family is willing to pay declines as the amount of land held by the bride's family increases.

Another explanatory variable in this regression is the amount of gifts, etc., received by the bride's family from the groom's, i.e. the "reverse transfer." The effect of this variable is positive and significant (at the 1% level) in both OLS and Tobit results. As discussed above, these reverse transfers reflect the fact that in such families, dowries may be better accepted as a form of payment than in others or it may be that if the bargaining is particularly hard, then these gifts are goodwill gestures on the part of the groom's family after a difficult negotiation process.

The most important result of this regression for the validity of the model developed in Chapter 2, is that pertaining to the age of bride (AGE). Note that the coefficient of AGE is positive and significant at the 1% level for both the OLS and Tobit versions. In fact, when age enters non-linearly as when AGE^2 is introduced, it too has a positive effect and is significant at the 1% level in Tobit and 5% level in OLS. Hence, as the age of the bride increases, dowry-payment increases, and

the rate of increase in dowry rises with age. This supports the idea of a social stigma about the inability to marry off a daughter. As age increases, an unmarried woman is more likely to be thought of as a "lemon." Hence, a higher dowry has to be paid in order to get her married off. And, since marriage is the only viable and honorable alternative, especially in the rural parts of India, a household would be more willing to pay a large dowry to marry her off the older she is.

A related result derives from results obtained from the interaction of the age of the bride and her education. As we have seen before, education by itself, has a strong negative effect on dowry and age a strong positive effect. The interaction of age and education picks up the effect of education on dowry payment when age varies. We find this variable to be positive and significant at the 1% level in both OLS and Tobit versions. Hence, as the age of the bride increases, the depressing effect of education on dowry declines.

The last variable considered in this regression is the interaction of age and average income. This is introduced to see whether or not , and how, the effect of age on dowry is modified by the ability to pay. This variable is insignificant in both the OLS and Tobit results.

Because of the several terms ,including both non-linear and interactive terms, involving both education and age and the fact that age at marriage and education may be jointly determined, the calculation of the net effects of additional education and age on the dowry is not exactly straightforward. Consider a family in which the

bride delays marriage one year in order to attend school an extra year. For such a family, increasing the age of marriage by one year would imply an increase in the number of years of education by one year also. Since an additional year of education and an increase in the age of marriage by an additional year have opposite effects on dowry, the net effect may be either positive or negative. Assuming the age of marriage in such a family is at the average level of sixteen years, implies that the number of years of education at marriage is eleven. Assuming that the income of such a family is also at the average level of Rs 636.4, the coefficients of Regression F1 in Table 5.3 imply that if age at marriage increases by one year, there is a net positive effect on dowry.[2]

Below, we report some additional regressions that are of interest. In some of these regressions, we isolate the effect of additional explanatory variables. Because of the relatively small number of observations and the correlation among some of the explanatory variables demonstrated in Table 5.2, making it dangerous to include many explanatory variables in the same regression, the sensitivity to alternative specifications is investigated in a series of alternative models.

It should be pointed out that in the dataset there were three instances in which the age of the bride was not recorded. Given the importance of the age of the bride at marriage to the model, it would seem important to test the sensitivity of the results to the method used in treating these missing values. All the above regressions were done by replacing the missing age observations by the average age

at marriage (sixteen). We then repeat the same regressions already presented but substituting either twelve or twenty-four for the missing age , at marriage for the bride. These values were chosen since they are, respectively, the minimum and maximum age of the brides at marriage recorded in the sample.[3] As can easily be seen, the results are quite insensitive to those different assumptions about the missing values for the bride age. Since we have taken regression F1 to be the 'best' regression, we write down regression F1(a) and F1(b), for comparison purposes. Specifically, in Regression F1(a), the missing age is set to twelve; in F1(b), it is set to twenty-four. In terms of R^2, regression F1(a) performs better than regressions F1 and F1(b). In all the subsequent regressions, the missing age has been set to sixteen, the mean age.

In regression F2, we examine further the interaction between age and "ability to pay," as measured by assets and land. In regression F2, age is found to have a positive effect on dowry in the Tobit estimation (significant at 1% level), as is the interaction term of previous period's assets with age (significant at 5% level). This further confirms the "stigma" view of dowry presented in Chapter 2.

Regression F3 is another variant of the same exercise. Here, age is dropped, but the interaction of age and average income is considered. This coefficient is positive and significant at the 10% level, indicating that the marginal effect of age on dowry is positive, and increases with the ability to pay of the bride's family. Note the substantial reduction in explanatory power of this

alternative . However, the other results are not very sensitive to the omission of the AGE and AGE^2 terms.

In regression F4, the focus is on the effect of education on dowry. Regression F1 has already indicated this to be a negative relationship. Here, we consider additionally the interaction of education with average income and average assets. The interaction term with average income is found to be negative and significant at the 1% level, indicating that the effect of additional wealth on dowry is negatively related to the education of the bride.

Regressions F5 through F7 report the results when the interaction and square terms are omitted. The results are somewhat weaker than in regression F1 (especially age is found to be insignificant); however, the conclusions regarding the reverse transfer variable (FDOWCON), the asset variables and education are not significantly altered. The considerably lower explanatory power of the model without the non-linear and interactive terms demonstrates the importance of their inclusion as suggested by our theoretical model.

There are about twenty-five cases in the dataset where, over this ten-year period, the same household experienced marriages of both male and female members. To see whether this had any effect on the dowry payment, we introduce, in regression F8 , a dummy variable (DUM) for households in which both the male and female members got married. Note, however, that the effect of this dummy variable (DUM) on DOWOUT does not turn out to be significant. Nor are the main

167

results discussed so far vitiated by the inclusion of this dummy variable. The significance of this dummy variable is that it tries to capture the effect of expectations of other marriages in the family on the amount of dowry paid. The fact that the variable turns out to be insignificant shows that these expectations have no role in deciding the dowry amount in any particular marriage. This could be said to support the bargaining theory in which each marriage is judged on its own merit, and is independent of any other. Hence, this result shows clearly that the amount of dowry paid is determined solely by the attributes of the groom and bride involved in that particular marriage and the ability of the bride's family to pay the dowry.

Next in Regression F9 we explicitly examine the effect of caste in the determination of dowry. Dummy variables are introduced for the castes ranking 1, 2, and 3. We have seen in Chapter 4 that these refer to the higher castes. As can be seen from regression F9, none of these variables is significant in the regressions. Hence, the caste of the household to which the bride belongs seems to have no effect on the dowry. This result seems somewhat surprising since traditionally it has been true that only the higher castes paid dowry in India. However, the result is perhaps not surprising if we consider the evidence of Epstein (1973) and Rajaraman (1985) on the extent to which Sanskritization has taken place in India. These authors have noted that in many instances, brideprice of the lower castes has been replaced by dowry. Hence, differences in the customs of different castes as to the

form of marriage payment seem to be disappearing, and dowry is emerging as the common form of marriage payment.

Regression F10 examines our claim that the amount of dowry paid does not depend on the identity of the particular female who is getting married in the household. Here the dummy variable REL is used when it is a person other than the daughter of the household head who got married. We find that REL is insignificant in the regression, and that the other results of the regression are similar to those obtained from Regression F1.

Regression F11 examines whether or not the fact that the household lives in a particular village has any bearing on the amount of dowry. Dummy variables VIL 1 and VIL 2 have been introduced to represent two of the three different villages surveyed. None of these dummies is significant in the regressions and neither are the results very different from the ones obtained in Regression F1.

Regression F12 was performed only for households in the sample of marriages which actually paid a dowry. Again, we find that none of the results of Regression F1 are negated.

We wanted to examine whether the fact that a female got married before a male had any bearing on the results. However, there were very few such cases in the dataset -- so the exercise could not be performed.

4.MALE REGRESSIONS :

We now turn to the "male regressions" in Table 5.5. The relevant dependent variable in this case is DOWIN--that is, the amount of dowry received by the household of the groom at the time of marriage. The null hypothesis tested here is that the explanatory variables being used in the male regressions have no explanatory power. This is because under the "pre-mortem" inheritance view of dowry, only the female wealth variables should have any explanatory power. These latter variables are absent in the male regressions since only data on the groom's family is available. In all the regressions given in Tables 5.3 and 5.5, the F-statistics are reported. From Table 5.5 we find that in every regression the F-statistic is significant at the 1% level. This enables us to reject the null hypothesis.

Table 5.4 provides a correlation matrix of the variables used in the following regressions. As before, we use this matrix to justify the inclusion or exclusion of the variables used in the regressions in Table 5.5 (e.g., land owned in the previous year and current assets could not be used together; nor could net wealth and all other measures of wealth,etc.).

We now discuss the male regressions individually.

Regression M1 in Table 5.5 represents the basic regression in this case. The criteria used for considering this to be the 'best' are similar to those provided for Regression F1 in the case of females. Here, the explanatory variables considered

are (1) education of the groom (ED), (2) average income of the groom's family (AVEINC), (3) land and (4) asset owned by the groom's family in the previous year (PRELAND and PREASSET), and (5) the amount of transfer made by the groom's family at the time of the marriage to the bride's family (MDOWCON).

The educational level of the groom (ED) is significant at the 1% level in both the OLS and the Tobit estimations. As conjectured, it is positive -- so that higher the education of the groom, the greater is the amount of dowry demanded and received. A bride's family is always looking for a good match both for the sake of the bride and for themselves. An educated groom would, presumably, improve the quality of life for the bride because of higher lifetime earnings. He also might be able to help his in-laws out at the time of need. Thus, education is a very desirable trait of the groom--and his family being fully aware of that would demand a higher dowry. The bride's family, likewise would be willing to pay a higher dowry.

Average income (AVEINC) is significant at the 1% level in both the Tobit and OLS estimates. Again, as conjectured, the coefficient is positive, indicating that at the higher the income, the higher would be the dowry received. Land in the previous year (PRELAND) is also significant at the 1% level in both Tobit and OLS. As expected, the coefficient is positive. Both these variables reflect the desirability of the groom's family. One of the reasons that a higher dowry is paid is that the bride's family wants to get connected to a wealthy family, and possibly

one with a high status. As expected, the coefficient of assets in the previous year (PREASSET) is also positive but is insignificant. However, one reason for the insignificance of the asset variable could be that the asset level of the groom's family is not easily verifiable by the bride's family, e.g., it is not possible to guess how much jewelry the groom's family has. Hence, though assets like farm machinery, etc. would be considered in dowry negotiations, typically less weight would be put on them by the bride's family when coming to an agreement.

The other variable that is significant at the 1% level and positive, is the amount of reverse transfer made by the groom's family to the bride's at the time of marriage (MDOWCON). Thus, for households that do receive dowry, the dowry amount increases with the reverse payments. As we have noted earlier, this might reflect the fact that these families are more dowry conscious than the others and reverse payments are goodwill gestures, made to appease the bride's family after a tough bargaining process. Another reason for including the variable MDOWCON is that it serves as a proxy for the wealth of the side that is missing--in this case the bride's side.[3]

In regression M2, a new variable is introduced--the age of the bride (AGE). This variable has the expected positive effect on DOWIN but is insignificant at conventional levels in both OLS and Tobit. ED becomes significant at 1% level in both the OLS and the Tobit. Assets in the previous year (PREASSET) is also

insignificant in both. Average income (AVEINC) is significant at the 1% level in both, as is MDOWCON.

In regression M3, MDOWCON is replaced by the dummy variable DUM1 in order to test for the differential effect on dowry of the households that make the reverse payment and those that do not. As such , DUM1 is an alternative measure of dowry consciousness. As the reader can see, there is no qualitative difference between the results of this regression and those of regression M1. DUM1 has a significant positive effect on DOWIN as do ED, PRELAND, PREASSET and AVEINC.

Regression M4 investigates whether AVEASSET performs any differently than the preferred measure of non-land assets PREASSET in the regression. As can be seen , there is little difference --AVEASSET, like PREASSET, is insignificant, and all the other variables perform similarly as in regression M1.

One interesting point (regression M5) is that the higher caste dummy variables (CASTE), by themselves, with no interaction with wealth variables, are insignificant. However,as the next regression (M6) shows, when the caste dummies are interacted with AVEINC, the interaction of caste #3 and AVEINC is significant at the 1% level in Tobit, and interactions of castes #2 and 3 with AVEINC are significant in OLS. Thus, caste of the groom's family seems to affect the effect of wealth on dowry. Education and PRELAND are not significant in this particular regression.

In regressions M7 and M8, we bring in two more explanatory variables--the age of the groom (GAGE) and a (1,0) dummy variable (DUM) set equal to one in those households in which both males and females got married over this period .

In regression M7, DUM is introduced. This dummy variable allows us to capture the differential effect on dowry of households having both male and female marriages. This variable has a negative impact in both the Tobit and OLS cases and this effect is significant at the 5% level in the case of the Tobit estimates. The fact that the effect is negative in both cases implies that dowry is smaller in households in which marriages took place for both male and female members. The rest of the variables perform in a manner similar to that in regression M1.

In regression M8, GAGE is introduced. It is insignificant in both cases.

In regression M9, we introduce an interaction term between age of the bride and average income of the groom. We find that this term is significant at the 1% level in OLS and at the 5% level in Tobit. It is positive in both the cases. Hence, the effect of higher age of the bride is to increase dowry, and this effect is stronger the larger is the groom's income . This supports our bargaining theory of Chapter 2. As the bride's age increases, a higher dowry has to be paid, and this effect is reinforced as the average income of the groom's family increases. In the latter case, the benefits to the bride's family from the marriage increases, so one can expect the dowry amount to be higher--and, if the age of the bride is also high, then the dowry is still higher. This effect of interacting the bride's age with wealth

variables of the groom's family is confirmed in other regressions choosing alternative wealth variables (see regressions M10 through M12).

In regression M13 and M14, to test for non-linearity in the effect of AGE and ED on dowry, we introduce quadratic terms $(AGE)^2$ and $(ED)^2$. The variable $(AGE)^2$ is introduced in equation M13, and is found to be insignificant. $(ED)^2$, is introduced in regression M14 and is found to be significant at the 1% level with both OLS and Tobit estimation procedures showing that an increase in the groom's education has a more than proportional effect on the dowry received.

In regression M15, we introduce a variable for the difference in ages of the bride and the groom (DIF). It is insignificant, however,in both OLS and Tobit estimates.

Regressions M16 examines whether residence in any one of the particular villages had any differential effect on the dowry payment. Dummy variables VIL1 and VIL2 were introduced to determine this. However, all these variables are insignificant, suggesting that the villages have no effect on dowry.

Regression M17 introduces the dummy variable REL for other relatives who got married, that is relatives other than the son of the household. We find that this variable is insignificant, suggesting that the dowry amount does not depend on who is getting married .

Regression M18 was performed only for households that received only positive dowry. We find that the results are not significantly different from that in regression M1.

5. Conclusion:

This chapter has attempted to test the hypothesis that dowry is determined through a bargaining process and with signalling. We have obtained results that support both these aspects of dowry. We have found that in order to avoid the social stigma that becomes associated with a woman and her family if she remains unmarried for a long time, a household will try to get its daughters married off early and will be willing to pay a higher dowry as her age increases. The ability of the household to pay the dowry is also important in this context, so that the wealthier the family, the higher is the dowry that it has to pay as a woman gets older.

The fact that dowry has a signalling aspect-- signalling wealth of the bride's family--is borne out by the fact that wealthier families pay a higher rather than a lower dowry. This signal eases the negotiation process and possibly helps to get a woman married off easily.

We have seen from the regressions that certain household and individual characteristics affect the amount of dowry. In the case of a household in which a

female member got married, the dowry paid is positively affected by the income and non-land asset levels of the household, the age of the bride and the dowry-consciousness of the household. For such a household ,the amount of dowry paid is negatively affected by the education level of the bride and by the amount of land owned by the household. The dowry level seems to be unaffected by the caste of the household, the village to which the household belongs, the relationship of the bride to the head of the household, and expectations that the household might have regarding marriage of its male members.

The results obtained from the households in which it was male members who got married reinforce our findings. Thus grooms with wealth and education received higher dowries.

These observations show that dowry is not simple "pre-mortem inheritance." If it were so, then the male regressions would have had no explanatory power and factors like the age of the bride would not be important in the female regressions. Also, if dowry were just "pre-mortem inheritance", the effect of land owned by the bride's family would have been positive rather than negative as obtained from our analysis.

ENDNOTES

1. For some households, there may be sources of income which may not be derived from stock variables like land and other assets. For example, family members may hire out as labor. It is therefore appropriate to include income as well as some other variable as a proxy for wealth. On the other hand, assets like jewelry have no corresponding income flows associated with them; hence, income alone may not correctly proxy for wealth.

2. The following chart illustrates these calculations:
   (a) Effect of an increase in AGE by 1 year at AGE=AVEAGE
   $$= 13593.3 + 2.0*407.95*(AVEAGE) - 408.44*(\# \text{ of years of education at } AGE=AVEAGE) - 0.25*(AVEINC)$$
   $$= 13593.3 + 2.0*407.95*16 - 408.44*11 - 0.25*636.4$$
   $$= 21995.8$$

   (b) Effect of an increase in ED by 1 year at AGE=AVEAGE
   $$= -5714.28 - 2.0*211.1*(\# \text{ of years of education at } AGE=AVEAGE) + 408.44*(AVEAGE)$$
   $$= -5714.28 - 2.0*211.1*11 + 408.44*16$$
   $$= -3823.4$$

   (c) Net effect of an increase in age by 1 year at AGE=AVEAGE
   $$= (a) - (b)$$
   $$= 18172.4$$

3. In India, the legal minimum age at marriage is eighteen. As seen from the sample, the age at marriage of many of the respondents was less than that. Hence, it is possible that some of the missing data on age at marriage was due to the respondent's unwillingness to reveal the true age, if that was below the legal limit. In that case, substituting the minimum age at marriage for the missing data would be reasonable. On the other hand, social stigma could cause a woman to not reveal her age if the age at marriage was rather high. If that were the case, substituting the maximum age in the sample would make sense.

TABLE 5.2   CORRELATION MATRIX (FEMALES)

	Education	Current Land	Current Income	Current Assets	Net Wealth
Education	1.0				
Current Land	.33	1.0			
Income	.07	.19	1.0		
Asset	.25	.65	.31	1.0	
Net Wealth	.24	.65	.31	.99	1.0

	Education	Current Land	Current Income	Current Assets	Net Wealth
Land in previous year	.34	.91	.15	.65	.66
Assets in previous year	.28	.71	.23	.94	.94
Average Income	.26	.35	.56	.61	.61
Average Assets	.43	.75	.19	.88	.88
Age	.33	.07	.15	-.09	-.08

	Land in Previous year	Assets in Previous Year	Average Income	Average Assets	Age
Land in previous year	1.0				
Assets in previous year	.54	1.0			
Average Income	.37	.61	1.0		
Average Assets	.78	.72	.63	1.0	
Age	.11	-0.09	-0.03	-.008	1.0

TABLE 5.3   FEMALE REGRESSIONS

DEPENDENT VARIABLE: DOWOUT

REGRESSION F1

	Direct	OLS Interaction with AGE	Direct	TOBIT Interaction with AGE
ED	-5714.38	408.446	-5724.08	562.233
	(2.617)	(3.362)	(1.409)	(2.697)
INC				
PRELAND	-479.06		-518.07	
	(2.353)		(2.104)	
PREASSET	.550337		.578732	
	(3.478)		(2.71)	
AGE	13593.3		13571.8	
	(2.977)		(2.074)	
FDOWCON	.691197		1.05058	
	(2.065)		(3.913)	
AVEINC	13.6168	-.253743	7.394	.237903
	(.954)	(.304)	(.515)	(.298)
AVEASSET				
AGE^2	407.951		432.267	
	(3.02)		(2.178)	
ED^2	-211.103		-507.772	
	(1.774)		(2.86)	
DUM				
CASTE				
CONST	-115870		-115873	
	(3.0)		(2.16)	

R^2 = .68

F = 8.39*

Number of observations = 72
t-ratios are in parentheses
* significant at the 1% level

Table 5.3 (continued)

REGRESSION Fl(a)

	OLS		TOBIT	
	Direct	Interaction with AGE	Direct	Interaction with AGE
ED	-6154.73 (2.827)	419.273 (3.502)	-6165.62 (1.486)	582.475 (2.762)
INC	..		..	
PRELAND	-452.058 (2.288)		-494.629 (2.098)	
PREASSET	.584601 (3.713)		.607109 (3.291)	
AGE	13920.4 (3.332)		13894.5 (2.098)	
FDOWCON	.82149 (2.574)		1.12186 (4.301)	
AVEINC	13.847 (.988)	-.30874 (.375)	6.735 (.503)	.251546 (.329)
AVEASSET				
AGE^2	418.636 (3.345)		443.409 (2.185)	
ED^2	-195.303 (1.658)		-507.949 (2.909)	
DUM	..		..	
CASTE	..		..	
CONST	-11672 (2.4)		-12573.1 (1.9)	

R^2 = .69
F = 8.83*

Table 5.3 (continued)

REGRESSION F1(b)

	OLS		TOBIT	
	Direct	Interaction with AGE	Direct	Interaction with AGE
ED	-3716.81 (2.065)	271.733 (2.872)	-3953.26 (.846)	402.308 (1.886)
INC	..		..	
PRELAND	-436.641 (2.112)		-473.769 (1.76)	
PREASSET	.58046 (3.553)		.56312 (1.846)	
AGE	8566.37 (2.492)		7754.48 (1.846)	
FDOWCON	.988218 (3.011)		1.5104 (3.99)	
AVEINC	13.79 (.952)	-.38056 (.449)	24.7387 (1.199)	-.98685 (.82)
AVEASSET				
AGE^2	242.312 (2.59)		218.462 (1.219)	
ED^2	-188.267 (1.552)		-442.051 (1.766)	
DUM				
CASTE				
CONST	-10998.2 (1.9)		-11254.3 (2.7)	

R^2 = .67
F = 7.97*

Table 5.3 (continued)

REGRESSION F2

	OLS		TOBIT	
	Direct	Interaction with AGE	Direct	Interaction with AGE
ED	-320.131 (1.029)		-366.08 (.976)	
INC	..		..	
PRELAND	639.262 (2.79)		-698.497 (2.225)	
PREASSET	.88842 (1.418)	.00931 (2.153)	-1.0905 (1.072)	.1078 (1.869)
AGE	-327.86 (.644)		649.69 (2.11)	
FDOWCON	.97484 (2.913)		1.30016 (6.591)	
AVEINC	5.8287 (2.131)		6.7547 (2.078)	
AVEASSET	.10038 (.344)		.1541 (.457)	
AGE^2	..		..	
ED^2	..		..	
DUM				
CASTE				
CONST	-45102 (1.3)		-45102.1 (1.12)	

R^2 = .62
F = 8.41*

Table 5.3 (continued)

REGRESSION F3

	OLS		TOBIT	
	Direct	Interaction with AGE	Direct	Interaction with AGE
ED	−297.74 (1.085)		−516.16 (1.57)	
INC				
PRELAND	−421.70 (1.997)		−819.81 (4.282)	
PREASSET	.46567 (2.792)		.72303 (5.498)	
AGE				
FDOWCON	1.0416 (3.048)		1.2059 (5.895)	
AVEINC	.4622 (.052)	.44284 (.867)	−6.1419 (.735)	.64934 (1.319)
AVEASSET				
AGE^2				
ED^2	−190.23 (1.48)		−458.39 (1.85)	
DUM				
CASTE				
CONST	−5063.5 (.93)		−5063.9 (.78)	

R^2 = .58
F = 9.88*

Table 5.3 (continued)

REGRESSION F4

	OLS Direct	Interaction AGE	ED	TOBIT Direct	Interaction AGE	ED
ED	-1413.91 (.72)	93.29 (.979)		-1423.67 (.473)	127.53 (.853)	
INC						
PRELAND	-464.902 (1.866)			-589.115 (1.779)		
PREASSET	.41818 (2.489)			.47256 (2.207)		
AGE	258.626 (.347)			236.764 (.231)		
FDOWCON	.89365 (2.531)			1.11702 (4.952)		
AVEINC	24.007 (1.163)	-.594 (.533)	-1.448 (1.582)	27.065 (1.015)	-.405 (.32)	-2.31 (1.9)
AVEASSET			.0023 (.764)			.004 (.833)
AGE²	419.32 (2.03)			401.56 (2.31)		
ED²	-181.03 (1.63)			-410.77 (2.03)		
DUM						
CASTE						
CONST	-46216.5 (1.32)			-46216.7 (1.16)		

$R^2 = .62$
$F = 6.42*$

185

Table 5.3 (continued)

	REGRESSION F5		REGRESSION F6	
	OLS	TOBIT	OLS	TOBIT
ED	-232.45	-188.90	-586.76	-618.65
	(.777)	(.416)	(1.817)	(1.611)
INC	3.04	2.63		
	(1.728)	(.829)		
PRELAND	-476.35	-591.24	-520.49	-560.87
	(2.312)	(2.236)	(2.373)	(1.921)
PREASSET	.64	.75		
	(4.352)	(4.241)		
AGE	272.80	43.24	309.10	12.50
	(.65)	(.054)	(.741)	(.019)
FDOWCON	1.05	1.42	1.15	1.53
	(2.971)	(5.168)	(3.174)	(8.325)
AVEINC				
AVEASSET			.80	.90
			(4.536)	(5.868)
AGE^2				
ED^2				
DUM				
CASTE				
CONST	-7114.3	-7135.2	-5485.9	-5507.3
	(.45)	(.43)	(.24)	(.25)

R^2 = .53
F = 8.29*

R^2 = .49
F = 8.46*

Table 5.3 (continued)

REGRESSION F7

	OLS	TOBIT
ED	-372.53	-399.04
	(1.29)	(1.414)
INC		
PRELAND	-397.30	-455.32
	(1.983)	(2.438)
PREASSET	.45	.53
	(2.829)	(3.197)
AGE	378.08	72.69
	(.958)	(.141)
FDOWCON	1.04	1.40
	(3.051)	(7.612)
AVEINC	7.75	8.34
	(2.964)	(3.681))
AVEASSET		
AGE^2		
ED^2		
DUM		
CASTE		
CONST	1836.9	1817.4
	(.22)	(.29)

R^2 = .58
F = 9.93*

Table 5.3 (continued)

REGRESSION F8

	OLS		TOBIT	
	Direct	Interaction with AGE	Direct	Interaction with AGE
ED	−5991.02 (2.711)	412.62 (3.4)	−6000.04 (1.42)	567.59 (2.63)
INC				
PRELAND	−442.25 (2.13)		−481.9 (1.9)	
PREASSET	.52 (3.2)		.548 (2.46)	
AGE	14025.8 (3.05)		14006.3 (2.09)	
FDOWCON	.66 (1.9)		1.01 (3.17)	
AVEINC	17.06 (1.15)	.43 (.51)	10.98 (.76)	.004 (.59)
AVEASSET				
AGE^2	418.69 (3.1)		443.13 (2.18)	
ED^2	−193.22 (1.59)		−491.9 (2.73)	
DUM	−1653.5 (.88)		−1656.4 (.65)	
CASTE				
CONST	3441.5 (.41)		3421.2 (.32)	

R^2 = .69
F = 8.43*

Table 5.3 (continued)

REGRESSION F9

	OLS			TOBIT		
ED	-293.65			-450.43		
	(1.04)			(1.32)		
INC						
PRELAND	-354.67			-677.89		
	(1.77)			(3.17)		
PREASSET	.328			.563		
	(1.92)			(4.03)		
AGE	13027.3			13372.4		
	(1.39)			(2.1)		
FDOWCON	1.088			1.27		
	(3.14)			(5.8)		
AVEINC	9.28			5.53		
	(3.19)			(2.4)		
AVEASSET						
AGE^2	403.05			414.3		
	(2.32)			(1.9))		
ED^2	-234.52			-523.7		
	(1.34)			(2.3)		
DUM						
CASTE	1298.63;	-3177.4;	-2290.7	1282.9;	-3184.2;	-2303.5
	(.42)	(.96)	(.86)	(.301)	(.73)	(.53)
CONST	-6650.7			-6719.3		
	(.98)			(.53)		

R^2 = .53
F = 7.63*

Table 5.3 (continued)

REGRESSION F10

	OLS		TOBIT	
	Direct	Interaction with AGE	Direct	Interaction with AGE
ED	-5718.25 (2.599)	410.88 (3.348)	-5829.25 (1.28)	599.48 (2.58)
INC				
PRELAND	-493.72 (2.33)		-383.45 (1.19)	
PREASSET	.559 (3.44)		.471 (1.601)	
AGE	13565.6 (2.94)		13487.4 (2.7)	
FDOWCON	.6823 (2.01)		1.194 (3.78)	
AVEINC	13.872 (.96)	-.2692 (.319)	17.63 (.927)	-.3668 (.346)
AVEASSET				
AGE^2	407.05 (2.98)		431.32 (1.8)	
ED^2	-215.55 (1.78)		-575.61 (2.45)	
DUM				
CASTE				
REL	-779.02 (.291)		-763.49 (.185)	
CONST	-11439.6 (2.6)		-10675.7 (2.9)	

R^2 = .68
F = 7.52*

Table 5.3 (continued)

REGRESSION F11

	Direct	OLS Interaction with AGE	Direct	TOBIT Interaction with AGE
ED	-5476.6 (2.5)	397.4 (3.3)	-5486.2 (1.3)	546.17 (2.48)
INC				
PRELAND	-526.1 (2.5)		-573.2 (2.0)	
PREASSET	.49 (3.1)		.543 (2.3)	
AGE	13683.3 (3.0)		13663.1 (2.01)	
FDOWCON	.64 (1.9)		.994 (3.49)	
AVEINC	8.1 (.55)	.13 (.157)	1.24 (.07)	.654 (.69)
AVEASSET				
AGE^2	414.8 (3.1)		438.6 (2.15)	
ED^2	-211.5 (1.8)		-500.32 (2.79)	
DUM				
CASTE				
VIL1	5218.6 (1.6)		5220.4 (1.38)	
VIL2	2456.3 (.99)		2460.6 (.699)	
CONST	-12547.8 (1.8)		-16547.9 (2.8)	

R^2 = .63
F = 7.4*

Table 5.3 (continued)

REGRESSION F12

| | OLS | | TOBIT | |
	Direct	Interaction with AGE	Direct	Interaction with AGE
ED	-5714.4 (2.6)	408.4 (3.36)	-5834.3 (1.4)	562.2 (2.69)
INC				
PRELAND	-479.1 (2.3)		-518.1 (2.2)	
PREASSET	.55 (3.5)		.76 (2.8)	
AGE	13593.3 (2.9)		13683.9 (2.5)	
FDOWCON	.69 (2.1)		1.2 (3.9)	
AVEINC	13.62 (.95)	.254 (.3)	7.43 (.62)	.25 (.39)
AVEASSET				
AGE^2	407.9 (3.1)		453.3 (2.4)	
ED^2	-211.1 (1.78)		-517.3 (3.1)	
DUM				
CASTE				
CONST	-11324.8 (3.8)		-12768.1 (3.1)	

R^2 = .61
F = 8.39*
N = 35

TABLE 5.4   CORRELATION MATRIX (MALES)

	Education	Land	Income	Assets	Net Wealth
Education	1.0				
Current Land	.07	1.0			
Income	.28	.21	1.0		
Asset	.25	.34	.57	1.0	
Net Wealth	.39	.48	.21	.62	1.0

	Education Land	Income	Assets	Wealth	Net
Land in previous year	.25	.69	.34	.69	.84
Assets in previous year	.39	.67	.48	.79	.52
Average Income	.31	.65	.71	.72	.83
Average Assets	.35	.56	.53	.65	.71
Age	.23	.14	-.06	.03	.29

	Land in Previous year	Assets in Previous Year	Average Income	Average Assets	Age
Land in previous year	1.0				
Assets in previous year	.58	1.0			
Average Income	.61	.62	1.0		
Average Assets	.62	.71	.59	1.0	
Age	.21	.22	.18	.21	1.0

TABLE 5.5   MALE REGRESSIONS

DEPENDENT VARIABLE: DOWIN

REGRESSION M1

	OLS	TOBIT
ED	245.08	305.28
	(2.78)	(3.003)
INC		
PRELAND	187.07	277.57
	(2.73)	(2.904)
PREASSET	.0718	.0446
	(1.683)	(1.352)
AGE		
MDOWCON	3.024	3.352
	(3.301)	(2.978)
DUM1		
AVEINC	5.32	4.8
	(4.08)	(2.3)
AVEASSET		
AGE^2		
ED^2		
DUM		
CASTE		
GAGE		
DIF		
CONST	-3700.7	-5772.1
	(5.18)	(6.49)

R^2 = .70
F = 13.88*
N = 76

t-ratios are within parentheses
* significant at 1% level

Table 5.5 (continued)

REGRESSION M2

	OLS	TOBIT
ED	85.78	198.39
	(1.996)	(2.193)
INC		
PRELAND	180.19	205.18
	(1.8)	(1.3)
PREASSET	.04	.09
	(0.46)	(.51)
AGE	137.9	184.75
	(0.99)	(.52)
MDOWCON	4.07	6.13
	(7.43)	(5.57)
DUM1		
AVEINC	6.29	7.26
	(4.25)	(2.15)
AVEASSET		
AGE^2		
ED^2		
DUM		
CASTE		
GAGE		
DIF		
CONST	−5948.4	−6015.8
	(2.5)	(1.03)

R^2 = .68
F = 24.68*

Table 5.5 (continued)

REGRESSION M3

	OLS	TOBIT
ED	176.3	298.5
	(1.9)	(2.6)
PRELAND	181.3	190.5
	(1.9)	(2.1)
PREASSET	.24	.26
	(2.7)	(4.2)
DUM1	4235.7	8387.4
	(5.7)	(2.9)
AVEINC	3.2	3.5
	(2.1)	(2.2)
CONST	-4728.3	-3603.9
	(1.8)	(1.9)

R^2 = .69
F = 18.3*

Table 5.5 (continued)

REGRESSION M4

	OLS	TOBIT
ED	111.21	181.21
	(1.5)	(1.2)
PRELAND	188.18	68.54
	(2.28)	(.45)
MDOWCON	4.03	5.21
	(7.37)	(5.29)
AVEINC	6.28	1.64
	(4.3)	(.61)
AVEASSET	.05	.29
	(.44)	(1.8)
CONST	-3687.2	-4614.3
	(5.18)	(3.5)

R^2= .68
F = 29.38*

Table 5.5 (continued)

REGRESSION M5

	TOBIT	OLS
ED	190.19	101.3
	(1.8)	(1.4)
INC		
PRELAND	153.38	-1600.3
	(1.06)	(2.3)
PREASSET	.22	.003
	(1.538)	(.5)
AGE		
MDOWCON	5.751	3.32
	(6.87)	(4.5)
DUM1		
AVEINC	2.85	3.5
	(1.6)	(2.3)
AVEASSET		
AGE^2		
ED^2		
DUM		
CASTE	-103.8; -139.7;-1719.1	-123.5; -150.3; -1632.3
	(1.3) (.5) (.8)	(.3) (1.2) (1.1)
GAGE		
DIF		
CONST	-5432.6	-5328.9
	(2.1)	(2.5)

R^2 = .61
F = 13.26*

Table 5.5 (continued)

REGRESSION M6

	OLS		TOBIT	
	DIRECT	INTERACTION WITH CASTE	DIRECT	INTERACTION WITH CASTE
ED	51.8		121.6	
	(.67)		(.89)	
PRELAND	72.03		42.25	
	(.73)		(.32)	
PREASSET	.07		.16	
	(.66)		(1.5)	
MDOWCON	4.06		5.64	
	(7.4)		(7.5)	
AVEINC	9.5	−1.9;−6.7;−10.9	9.13	.8;−3.9;−8.7
	(5.3)	(.8);(2.2);(3.7)	(3.5)	
(.3);(.9);(2.1)				
CASTE1	231.4		−258.7	
	(.13)		(.01)	
CASTE2	3082.0		2506.4	
	(1.5)		(.7)	
CASTE3	5067.2		4644.6	
	(2.7)		(1.2)	
				AVEASSET
AGE^2				
ED^2				
DUM				
GAGE				
DIF				
CONST	−6329.5		−5431.9	
	(2.3)		(3.0)	

R^2 = .74
F = 16.99*

Table 5.5 (continued)

REGRESSION M7

	OLS	TOBIT
ED	111.5 (1.5)	141.37 (1.6)
INC		
PRELAND	195.6 (2.03)	212.09 (1.619)
PREASSET	.034 (.34)	.19 (.73)
AGE		
MDOWCON	3.98 (7.1)	5.36 (7.3)
DUM1		
AVEINC	6.03 (3.8)	5.5 (2.2)
AVEASSET		
AGE^2		
ED^2		
DUM	-429.7 (.62)	-2158.7 (1.73)
CASTE		
GAGE		
DIF		
CONST	-3437.9 (4.13)	-6030.6 (4.7)

R^2 = .67
F = 24.36*

Table 5.5 (continued)

REGRESSION M8

	OLS	TOBIT
ED	73.4	222.3
	(.9)	(1.03)
PRELAND	194.3	193.2
	(2.03)	(.88)
PREASSET	.04	.10
	(.43)	(.48)
MDOWCON	4.0	6.24
	(7.3)	(5.7)
AVEINC	6.36	6.78
	(4.3)	(1.97)
GAGE	-91.9	-145.3
	(1.05)	(.55)
CONST	-5645.7	-5751.5
	(2.8)	(1.07)

R^2 = .68
F = 24.68*

Table 5.5 (continued)

REGRESSION M9

	OLS		TOBIT	
	Direct	Interaction with AGE	Direct	Interaction with AGE
ED	58.99 (.87)		138.54 (.84)	
INC				
PRELAND	50.87 (.58)		61.48 (.342)	
PREASSET	.04 (.51)		.17 (.93)	
AGE	867.8 (3.7)		1147.2 (1.5)	
MDOWCON	3.59 (7.4)		5.4 (4.7)	
DUM 1				
AVEINC	24.3 (3.9)	1.66 (5.02)	24.71 (1.43)	1.72 (1.857)
AVEASSET				
AGE^2				
ED^2				
DUM				
CASTE				
GAGE				
DIF				
CONST	12627.2 (2.9)		12625.5 (.93)	

R^2 = .76
F = 32.18*

Table 5.5 (continued)

REGRESSION M10

	OLS		TOBIT	
	Direct	Interaction	Direct	Interaction
		with AGE		with AGE
ED	59.3 (.78)		169.96 (.88)	
INC				
PRELAND	1239.5 (2.31)	69.49 (2.68)	1271.8 (1.92)	71.57 (1.32)
PREASSET	.069 (.67)		.225 (.93)	
AGE	110.65 (.68)		426.57 (.86)	
MDOWCON	4.07 (7.78)		6.13 (5.4)	
DUM 1				
AVEINC	5.02 (3.35)		5.74 (1.6)	
AVEASSET				
AGE^2				
ED^2				
DUM				
CASTE				
GAGE				
DIF				
CONST	-765.8 (.25)		-809.12 (.09)	

R^2 = .71
F = 24.08*

Table 5.5 (continued)

REGRESSION M11

	OLS		TOBIT	
	Direct	Interaction	Direct	Interaction
		with AGE		with AGE
ED	53.24		147.95	
	(.78)		(.79)	
INC				
PRELAND	39.12		43.83	
	(.38)		(.19)	
PREASSET	1.35	.08	1.29	.08
	(4.06)	(4.1)	(2.1)	(2.3)
AGE	305.26		602.83	
	(2.23)		(1.3)	
MDOWCON	3.92		5.88	
	(7.89)		(5.45)	
DUM 1				
AVEINC	4.62		5.32	
	(3.31)		(1.6)	
AVEASSET				
AGE^2				
ED^2				
DUM				
CASTE				
GAGE				
DIF				
CONST	2834.7		2815.6	
	(.93)		(.29)	

R^2 = .71
F = 28.48*

Table 5.5 (continued)

REGRESSION M12

	Direct	OLS Interaction with AGE	TOBIT Direct	Interaction with AGE
ED	29.38 (.55)		85.11 (.61)	
INC				
PRELAND	54.28 (.61)		86.75 (.35)	
PREASSET				
AGE	330.05 (2.1)		614.96 (1.13)	
MDOWCON	3.88 (7.9)		5.75 (5.7)	
DUM 1				
AVEINC	4.42 (3.2)		4.89 (1.9)	
AVEASSET	1.78 (4.6)	.12 (4.6)	1.83 (2.73)	.13 (1.9)
AGE^2				
ED^2				
DUM				
CASTE				
GAGE				
DIF				
CONST	3376.3 (1.16)		3370.1 (.34)	

R^2 = .72
F = 30.45*

Table 5.5 (continued)

REGRESSION M13

	OLS	TOBIT
ED	82.09	130.35
	(1.02)	(.76)
INC		
PRELAND	180.78	154.14
	(1.8)	(.76)
PREASSET	.04	.103
	(.43)	(.56)
AGE	404.75	280.02
	(.34)	(.11)
MDOWCON	4.9	6.22
	(7.4)	(6.75)
DUM1		
AVEINC	6.35	7.95
	(4.4)	(2.57)
AVEASSET		
AGE^2	7.14	13.79
	(.23)	(.19)
ED^2		
DUM		
CASTE		
GAGE		
DIF		
CONST	-8383.8	-8164.6
	(.75)	(.36)

R^2 = .68
F   = 20.87*

Table 5.5 (continued)

REGRESSION M14

	OLS	TOBIT
ED	374.14	1130.5
	(1.9)	(2.7)
PRELAND	161.8	141.7
	(1.8)	(.84)
PREASSET	.05	.11
	(.49)	(.64)
MDOWCON	3.63	4.57
	(6.67)	(4.38)
AVEINC	6.57	4.4
	(4.6)	(1.8)
ED^2	37.46	88.21
	(2.7)	(3.7)
CONST	-2936.7	-3486.4
	(3.9)	(2.7)

R^2=.71
F=27.93*

Table 5.5 (continued)

REGRESSION M15

	OLS	TOBIT
ED	236.6	1127.6
	(1.9)	(1.9)
PRELAND	150.3	138.3
	(1.7)	(1.8)
PREASSET	.03	.32
	(.5)	(.59)
MDOWCON	4.1	4.23
	(5.2)	(4.10)
AVEINC	5.92	4.38
	(3.5)	(1.9)
DIF	70.71	198.3
	(.46)	(.85)
CONST	-3539.6	-3469.8
	(2.1)	(2.5)

R^2=.68
F=20.5*

Table 5.5 (continued)

REGRESSION M16

	OLS	TOBIT
ED	186.06 (2.24)	228.4 (2.0)
AVEINC	1.08 (1.07)	2.98 (1.9)
PRELAND	162.47 (1.05)	154.5 (1.3)
PREASSET	.224 (1.12)	.443 (3.25)
AGE		
MDOWCON	4.37 (7.1)	6.39 (8.64)
DUM1		
VIL1	-972.1 (1.03)	-1878.4 (1.4)
VIL2	1676.5 (1.68)	-2038.3 (1.5)
CONST	6293.6 (1.8)	5342.3 (2.7)

R^2 = .62
F = 15.95*

Table 5.5 (continued)

REGRESSION M17

	OLS	TOBIT
ED	186.1	263.9
	(2.24)	(2.8)
AVEINC	1.08	1.49
	(1.07)	(2.2)
PRELAND	152.5	192.9
	(1.06)	(1.8)
PREASSET	.235	.32
	(2.12)	(2.86)
AGE		
MDOWCON	4.38	5.94
	(7.1)	(10.7)
VIL2	-704.5	-1234.2
	(.75)	(1.3)
VIL3	-972.1	-158.2
	(1.02)	(.126)
CONST	-4527.9	-3036.7
	(1.8)	(1.78)

R^2 = .62
F = 15.95*

Table 5.5 (continued)

REGRESSION M18

	OLS	TOBIT
ED	231.75	277.89
	(2.96)	(2.85)
AVEINC	1.53	1.471
	(1.5)	(1.56)
PRELAND	174.17	161.8
	(1.63)	(1.470)
PREASSET	.105	.347
	(1.06)	(2.4)
AGE		
MDOWCON	4.26	6.75
	(7.05)	(9.31)
REL	−1403.6	−265.7
	(1.54)	(.16)
CONST	−3701.8	−4856.9
	(3.8)	(2.7)

R^2 = .62
F   = 17.57*

Table 5.5 (continued)

REGRESSION M19

	OLS	TOBIT
ED	110.8	136.45
	(1.5)	(2.08)
AVEINC	1.5	2.5
	(1.5)	(2.3)
PRELAND	126.2	271.3
	(1.1)	(2.9)
PREASSET	.12	.05
	(1.0)	(.34)
AGE		
MDOWCON	3.14	3.2
	(3.4)	(2.6)
DUM1		
CONST	3650.7	5476.9
	(3.8)	(2.9)

R^2 = .64
F   = 17.62*

CONCLUSION

This dissertation is an empirical as well as theoretical investigation of dowry. It shows that the traditional model of dowry does not address some of the crucial aspects of the institution as it exists in much of Asia. Traditionally, dowry is seen as "pre-mortem inheritance" -- it is the woman's share of her natal property, and she gets it at marriage. As such, it has been viewed as a transfer which the woman's family willingly makes at marriage, and which depends on its own wealth but not on the attributes of the woman, the groom and his family.

We have shown that this view of dowry, though perhaps true of societies in Europe where dowry existed, does not capture the main features of the institution as it exists today in a large part of Asia, and especially in India. In these Asian countries, at least, dowry is not a mere transfer of wealth; it is the end-product of a negotiation process between the families of the bride and the groom. The bargaining strength of the families, their status and wealth, and the attributes (e.g., the educational level, income earned) of the bride and the groom become important in this context.

If the traditional view of the institution of dowry were correct (it being a transfer at marriage reflecting the inheritance share) then a dowry payment would be

a welfare-improving transfer in accordance with individual preferences. However, in many Asian countries and especially in India, dowry is looked upon as an unmitigated social evil. Many of the unpleasant aspects of dowry can be understood when seen as the outcome of a bargaining process, as we have suggested.

While the focus of our study has been on the socio-economic determinants of dowry, we believe this is crucial to understanding why there are strong objections to the practice , not only among women's groups , but also among society at large; and why the institution persists even though everyone seems to be against it. Although laws have been passed abolishing dowry in India, the institution persists and seems to be encompassing a wider population (Rajaraman,1985).

As we have noted above, the negative side of the institution of dowry seems to be the fact that dowry is determined through a bargaining process. The marriage negotiation process essentially becomes a test of power of the families of the bride and groom. The process is often long and drawn out. The family of the bride is often at a disadvantage, since it has to take account of the fact that society looks down upon unmarried women. Often, the payment of dowry at marriage is not enough for the family of the groom. In particular, the groom's family often demands more payment later, and maltreatment of the wife results if her family is unable to pay. In extreme cases, inability of the woman's natal family to make future payments has led to fatalities. It has even been alleged that the allure of dowry from a second marriage has been responsible for mistreatment of women in the in-law's households. As already mentioned, these practices would not have existed if the

bargaining aspect of dowry were absent. The groom's family knows that, if it is wealthy, or if the groom is educated or has a good job, it can demand and expect to get a very high dowry. Also, because of societal norms, the bride's family has to marry off their daughter, and do so as early as possible. This not only results in misallocation of resources (as when productive investment cannot be made because of dowry payment), and, in some cases, indebtedness of the bride's family, but also in the persistence of a practice that society does not condone but cannot get rid of.

The persistence of the institution of dowry seems surprising, given the sentiments against it. However, if we consider the role of social norms and individual relationships in society, then the persistence of dowry can, perhaps, be explained. Individuals in society adhere to certain common norms. Every individual, in following his "selfish calculus", is curtailed by certain norms. Also, these "norms, customs and even power structures can be sustained in an atomistic market through a network of interpersonal conjectures and sanctions" (Basu, 1986). As Basu notes, "triadic relations" exist in a society (that is, relations with uninvolved third parties). This kind of relationship enables us to show that "Pareto suboptimal equilibria can get sustained even though each individual pursues his selfish ends". In the case of dowry, each family with an unmarried woman, for fear of being looked down upon by others in society, conforms to the rules of the system. As Basu puts it, "even those who harass do so because they are worried that if they do not harass the disloyal, they themselves may be labeled disloyal".(Basu, 1986). Thus, each

person, through his own little rational acts, helps sustain a regime which he might not actually want.

However, as the recent experience of East Europe and the U.S.S.R has shown, even norms that seem firmly entrenched can change--sometimes rather dramatically. Some recent studies (e.g., Kuran(1987a,1987b,1988)), have focused on "critical mass" or "threshold models" to explain the change in an institution. People's behavior depends on how many individuals behave in a particular way, and what is the way in which they behave. Thus people's choices are interdependent, e.g. because of fear of isolation. However, each has a "threshold" which is the point where the perceived benefits to him from the action exceed the costs from the given action . It is the point at which a particular action becomes profitable. Each member of a group will take a particular action, only if the expected number of people taking the same action is above the threshold of this particular member. Depending on the individual thresholds ,the behavior of otherwise identical groups of people may be different. If sufficiently many people are expected to choose a certain option, this option is chosen by a large majority. Hence, there is a bandwagon effect.

In our context, the problem would be to arrive at the "critical mass" from which the bandwagon process against the institution of dowry can begin. For society to give up the institution of dowry , a "critical mass" may be required. It is generally hard to predict when such a critical mass will form, or even how. Sometimes, when "payoff functions in a certain society are linked to a performance measure based on some comparison with outsiders" (Kuran, 1988), the status quo may be weakened.

However, in the Indian context, such a process of endogenous change of the institution of dowry seems to be unattainable, especially in light of the fact that more rather than fewer people are adopting the practice of giving dowry. Hence, it would seem that the legislative measures may be needed to abolish the practice. Indeed, rigorous enforcement of the existing legislative measures may provide the boost needed for the formation of the "critical mass".

It is not difficult to see why anti-dowry legislation has failed in India. In the legislation, the penalties for giving or taking dowry are not severe. A small fine is all that is imposed if any family is found to be giving or receiving dowry. Stricter measures are thus called for if the practice is to be abolished.

(It seems that the key to curtailing the practice of dowry is to take away the bargaining aspect. Hence, a step in the right direction seems to be a 1986 ruling by the Indian Supreme Court that defines dowry as "stridhan" (female wealth). Let us recall that this is the view taken of dowry by Tambiah and Goody (1973). This is the form in which dowry existed in Europe, and, as we have seen, a form in which it does not exist in Asia or India. The aim is to limit dowry transfers to the woman's inheritance share through stricter enforcement of inheritance laws. Though there is legislation in India providing equal division of property between sons and daughters, this is hardly ever enforced. If it is possible to enforce the legislation that daughters will only get their legislated share of the property, no more no less, the dowry would probably be just the daughter's rightful share and not dependent on the quality of a

marriage. In such a case, as argued above, dowry would be a welfare improving transfer in accordance with individual preferences.

Some other policy measures also deserve trial. For example, one way in which the situation could be improved is by enabling a woman to have full control over the natal property transferred to her at marriage (that is, her inheritance). As we have seen, this is generally not the case. If a woman gains control over her dowry, then it could be used to her advantage. It would give the woman some power in the in-laws' household, and would reduce mistreatment. If mistreated, she could simply return the dowry to the natal household, where it could be held "in trust" for her. Thus, giving women enforceable property rights and inheritance rights would perhaps solve much of the problem. A corollary of this would be making it legal for dowry to be returned to the natal family in case of divorce or death of a woman. Then, perhaps, we would hear less of maltreatment and dowry death than we do today.

Finally, we discuss certain limitations of our study. As mentioned earlier, the study was conducted with a data set that had information on only one of the parties in a marriage. No information was available on the other party (except the age of the bride in the case of families where a male member got married). As such, we have not been able to make an integrated study of the bargaining process that goes on at the time of marriage. The lack of a complete dataset has also made the specification of the empirical model incomplete. Any future research on this topic should address this issue.

The other limitation of the study has been the limited scope of the geographical area studied. The problem has been studied only in the context of three villages in a part of India that is economically backward compared to the rest of the nation. Future research should concentrate on more affluent areas and should include urban areas where the incidence of dowry has been found to be more prenounced in these areas (Ramanamma, 1985).

However, one complication should be taken into account in this context. As we have mentioned above, dowry is illegal in India. As such, any dataset could have reporting biases. Establishing rapport with the respondents and double-checking all relevant information should solve this problem.

Bibliography

Ahmed, R. (1987). Changing Marriage Transactions and Rise of Demand System in Bangladesh. _The Economic and Political Weekly_, Volume 22, 17, 22-26.

Arberry, A. J. (1964). _The Koran Interpreted_. Oxford University Press

Ballabh, V. and T.S.Walker (1986). Land Fragmentation, Subdivision and Consolidation in India's Semi-Arid Tropics(SAT). _Mimeo_.ICRISAT,India.

Basu, K. (1986). Markets, Power and Social Norms in a Development Context. _Occasional Paper No. 9_. Center for Advanced Study of International Development.

Bavinck, M. (1984). _Small Fry_. London: Academic Press.

Becker, G. S. (1974). A Theory of Marriage. In T. W. Schultz (Ed.), _Economics of the Family_. Chicago and London: The University of Chicago, 229-344.

_____ (1981). _A Treatise on the Family_. Cambridge, Massachusetts and London, England: Harvard University Press.

Berkovitch, E.(1985). Reputation Effect in Equilibrium Search and Bargaining. _Mimeo. Paper 668. Northwestern University_.

Binswanger, H.P. (1978). Risk Attitudes of Rural Households in Semi-Arid Tropical India. _Economic and Political Weekly_, Volume 13, 25, 49-62.

Camerer, C. (1988). Gifts as Economics Signals and Social Symbols. _American Journal of Sociology_, 94, 180-214.

Comaroff, J. L. (Ed.) (1980). _The Meaning of Marriage Payments_. Introduction. London, New York: Academic Press Inc.

Divale, W. T., and M. Harris (1976). Population, Warfare and the Male Supremacist Complex. _American Anthropologist_, 78, 521-38.

Dumont, L. (1983). _Affinity as a Value -- Marriage Alliance in South India_. Chicago and London: University of Chicago Press.

Epstein, T. S. (1973). _South India: Yesterday, Today and Tomorrow -- Mysore Villages Revisited_. New York: Holmes and Meier Inc.

Epstein, T. S. (1962). _Economic Development and Social Change in South India_. London: Manchester University Press.

Freedman, M. (1966). Chinese Lineage and Society: Fukien and Kwantung. _L.S.E. Monographs on Social Anthropology_, 33.

Friedl, E. (1967). The Position of Women: Appearance and Reality. _Anthropological Quarterly_, 40(3), 97-108.

Fruzzetti, L. M. (1982). A Gift of a Virgin. New Brunswick, New Jersey: Rutgers University Press.

Fruzzetti, L. and A. Ostor (1984). Kinship and Ritual in Bengal. New Delhi: South Asian Publishers.

Ghosh, B. R. (1980). Urbanisation and Change in Marriage Trends. In L. P. Vidyarthi, B. N. Sahay, P. K. Dutta (Eds.). Aspects of Social Anthropology in India. New Delhi: Classical Publications, 259-272.

Goody, J. (1973). Bridewealth and Dowry in Africa and Eurasia. In J. Goody and S. J. Tambiah (Eds.) Bridewealth and Dowry. London and New York: Cambridge University Press, 59-169.

_____ (1976).   Production and Reproduction. Cambridge.

Government of India (1978). The Indian Statistical Abstract. New Delhi.

Grossbard-Shechtman, A. (1986).   Economic and Jewish Perspectives on Marriage. Hebrew in Dinei Israel, A Journal of Science and Jewish Law.

Gupta, G. R. (1974).   Marriage, Religion and Society -- Pattern and Change in an Indian Village. New York and Toronto: John Wiley and Sons.

Gupta, G. R. (1979). The Joint Family. In M. S. Das and P. D. Bardis (Eds.) The Family in Asia. London: George Allen and Unwin.

Harrel, S. and S. A. Dickey (1985). Dowry Systems in Complex Societies. Ethnology, 24, 105-120.

Harris, M. (1979). Cultural Materialism. New York.

Hershman, P. (1981). Punjabi Kinship and Marriage. Delhi: Hindustan Publishing Corporation .

Hooja, S. L. (1969). Dowry System in Inda: A Case Study. Delhi: Asia Press.

Inden, R. B. (1976). Marriage and Rank in Bengali Culture. Berkeley and Los Angeles: University of California Press.

Kapadia, K. M. (1968).   Marriage and Family in India. London: George Allen and Unwin.

Kaplan, M. A. (Ed.) (1985). The Marriage Bargain: Women and Dowries in European History. Introduction. The Institute for Research in History and Haworth Press, Inc.

_____ (1985). For Love or Money: The Marriage Strategies of Jews in Imperial Germany. In M. A. Kaplan (Ed.) The Marriage Bargain. The Institute of Research in History and Haworth Press Inc., 121-164.

Kapur, P. (1979). Women in Modern India. In M. S. Das and P. D. Bardis (Eds.) The Family in Asia. London: George Allen and Unwin.

Kuran, T. (1987a). Chameleon Voters and Public Choice. <u>Public Choice</u>, 53, 53-78.

_____ (1987b). Preference Falsification,Policy Continuity and Collective Conservatism. <u>Economic Journal</u>, 97, 642-665.

_____ (1988). The Tenacious Past: Theories of Personal and Collective Conservatism and Behavior. <u>Journal of Economic Organization</u>, 10, 143-171.

Kurian, G. and M. John (1975). Women and Social Customs within the Family: A Case Study of Attitudes in Kerala, India. In D. Raphael (Ed.) <u>Being Female -- Reproduction, Power and Change</u>. Paris: Mouton Publishers, 255-266.

Kurian, G. (1961). <u>The Indian Family in Transistion -- A Case Study of Kerala Syrian Christians</u>. The Hague, The Netherlands: Mouton and Co.

Lambiri-Dimaki, J. (1985). Dowry in Modern Greece: An Institution at the Crossroads between Persistence and Decline. In M. A. Kaplan (Ed.) <u>The Marriage Bargain</u>. The Institute for Research in History and the Haworth Press, Inc.,165-178.

Leland, H.E. and D.H. Pyle (1977). Informational Asymmetries, Financial Structure and Financial Intermediation. <u>Journal of Finance</u>, 2,371-387.

Madan, T. N. (1965). <u>Family and Kinship: A Study of the Pandits of Rural Kashmir</u>. New York: Asia Publishing House.

Mandelbaum, D. G. (1970). <u>Society in India -- Continuity and Change</u>. Berkeley, Los Angeles, London: University of California Press.

Mies, M. (1980). <u>Indian Women and Patriarchy -- Conflicts and Dilemmas of Students and Working Women</u>. New Delhi: Concept Publishing Company.

Miller, B. D. (1981). <u>The Endangered Sex</u>. Ithaca and London: Cornell University Press.

Murdock, G. P. (1981). <u>Atlas of World Cultures</u>. Pittsburg, PA: University of Pittsburg Press.

News Report (July 14, 1979). Burn Her and Try Again. <u>Economist</u>, 59.

Nuhane, C. (1967). <u>Kinship and Economic Organization in Rural Japan</u>. London.

Owen-Hughes, D. (1985). From Brideprice to Dowry in Mediterranean Europe. In M. A. Kaplan (Ed.), <u>The Marriage Bargain</u>. The Institute for Research in History and The Haworth Press, Inc., 13-58.

Papademitriou, T. (1985). Marriage and Marital Property Under the New Greek Family Law. <u>Monograph. Law Library, Library of Congress</u>. Washington D.C.

Parish, W. and M. K. Whyte (1978). <u>Village and Family in Contemporary China</u>. Chicago.

Radcliff-Brown, A. R. (1935). Patrilineal and Matrilineal Succession. <u>Iowa Law Review</u>, 20, 286-303.

Rajaraman, I. (1983). Economics of Brideprice and Dowry. <u>The Economic and Political Weekly</u>. Vol. 18, 8, 275-79.

Ramanamma, A. (1988). <u>Position of Women in India -- with Special Reference to Poona</u>. University of Poona.

Ramu, G. N. (1977). <u>Family and Caste in Urban India</u>. Bombay: Vikas Publishing House.

Rheubottom, D. B. (1980). Dowry and Wedding Celebrations in Yugoslav Macedonia. In J. L. Comaroff (Ed.), <u>The Meaning of Marriage Payments</u>. New York: Academic Press, 221-250.

Reiner, E. S. (1985). Women, Dowries and Capital Investment in Thirteenth Century Siena. In M. A. Kaplan (Ed.), <u>The Marriage Bargain</u>. The Institute for Research in History and the Haworth Press, Inc., 59-80.

Rosenzweig, M. R. and O. Stark (1987). Consumption Smoothing, Migration and Marriage: Evidence from Rural India. <u>Mimeo. Economic Development Center</u>. <u>University of Minnesota</u>.

Rosenzweig, M.R. (1987). Risk, Implicit Contracts and the Family in Rural Areas of Low Income Countries. <u>Mimeo. Economic Development Center. University of Minnesota</u>.

Roy, M. (1975). <u>Bengali Women</u>. Chicago and London: University of Chicago Press.

Schneider, J. (1985). Trousseau as Treasure: Some Contradictions of Late Nineteenth Century Change in Sicily. In M. A. Kaplan (Ed.), <u>The Marriage Bargain</u>. The Institute for Research in History and Haworth Press Inc., 81-120.

Schultz, T. W. (1973). Fertility and Economic Values. In T.W.Schultz (Ed) <u>Economics of the Family</u>. Chicago and London: The University of Chicago 345-370.

Sharma, U. (1980). <u>Women, Work and Property in North-West India</u>. London and New York: Tavistock Publications.

Singh, R. P., H. P. Binswanger and N. S. Jodha (1985). <u>Manual of Instructions for Economic Investigators in ICRISAT's Village Level Studies</u>. Patancheru.

Spence, M. (1974). Competitive and Optimal Response to Signals: An Analysis of Efficiency and Distribution. <u>Journal of Economic Theory</u>, F, 296-332.

Spiro, M. (1975). Marriage Payments: A Paradigm from the Burmese Perspective. <u>Journal of Anthropological Research</u>, 31, 89-115.

_____ (1977). <u>Kinship and Marriage in Burma -- A Cultural and Psychodynamic Analysis</u>. Berkeley, Los Angeles and London: University of California Press.

Strathern, A. J. (1980). The Central and the Continent: Bridewealth among the Melpa and the Wiru. In J. L. Comaroff (Ed.), <u>The Meaning of Marriage Payments</u>. London, New York: Academic Press Inc., 49-60.

Srinivas, M. N. (1984). <u>Some Reflections on Dowry</u>. J. P. Naik Lecture. Oxford University Press. Delhi.

Tambiah, S. J. (1973). Dowry and Bridewealth and the Property Rights of Women in Southern Asia. In J. Goody and S. J. Tambiah (Eds.), <u>Bridewealth and Dowry</u>. London and New York: Cambridge University Press, 59-169.

Tambiah, S. J. (1973). From Verna to Caste through Mixed Unions. In J. Goody (Ed.), <u>The Character of Kinship</u>. Cambridge, 191-230.

Van Der Veen, K. W. (1971). <u>I Give Thee My Daughter -- A Study of Marriage and Hierarchy Among the Anavil Brahmans of South Gujrat</u>. Assen: Koninklijke Van Gorcum and Comp. N. V.

Van Damme, E. (1984). The North Bargaining Solution is Optimal. <u>Discussion Paper No. 597. Northwestern University</u>.

Vreede-De Stuers, C. (1970). <u>Girl Students in Jaipur</u>. Assen, The Netherlands: Koninklijke Van Gorcum and Comp. N. V.

Yalman, N. (1967). <u>Under the Bo Tree</u>. Berkeley and Los Angeles: University of California Press.

_____ (1963). On the Purity of Women in the Castes of Ceylon and Malabar.Journal of the Royal Anthropological Institute, 93, 22-46.