

Title: The Determinants of Consanguineous Marriage  
in Egypt, 1988 - 2000

Author: Alexander A. Weinreb

Affiliation & correspondence address: Department of Sociology and  
Anthropology  
Hebrew University  
Jerusalem, 91905  
ISRAEL  
tel. +972 2 588 3038  
fax. +972 2 588 3549  
[awein@mscc.huji.ac.il](mailto:awein@mscc.huji.ac.il)

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## **Abstract**

This article reviews three mechanisms related to autonomy, wealth, and local cultural factors, which are said to underly the high prevalence of consanguineous marriage in Arab societies. It then assesses each of them empirically in two stages. The first uses a pooled dataset constituted by the most recent marriage cohorts in the 1992 and 2000 waves of the Egyptian Demographic and Health Surveys. Three results stand out. The frequency of consanguinity in the most recent marriage cohorts (i) is strongly correlated with the frequency among older cohorts, signaling the strong clustering of underlying institutional (and unobserved) supports; (ii) tends to be more common among women who are poorer in absolute term, though wealthier than average in their communities; and (iii) varies temporally and across the rural-urban divide in its relationship to women's autonomy. A subsidiary analysis, using only the 2000 data, then identifies wealth and autonomy differences between first cousin patrilineal and matrilineal wives.

## 1. INTRODUCTION

Notwithstanding early forecasts to the contrary (Goode 1963:218-219), the prevalence of consanguinity throughout the Arab world, and in some non-Arab Muslim societies, remains high.<sup>1</sup> Published estimates show that national prevalence ranges from a low of 23 percent of all current unions in Algeria to more than 50 percent in Iraq, Jordan, Kuwait, Pakistan, Saudi Arabia, and the United Arab Emirates. Most of these marriages are between first cousins, and among these, a plurality are of the favored patrilineal parallel cousin variety (Al-Awadi et al 1985; Khlat 1988; Khouury and Massad 1992; El-Hazmi et al 1995; Al-Ghazali et al 1997; Hussein and Bittles 1998). Although declines in the frequency of certain types of consanguineous marriage have been observed in some societies or given strata of societies—for example, in marriages between both patrilineal first cousins and distant cousins in the Israeli Arab population (Jaber, Halpern and Shohat 2000; Vardi-Saliternik, Friedlander and Cohen 2001; Kenan and Burck 2002), between the wealthiest and most educated classes in Iran and Kuwait (Givens and Hirschman 1994; Radovanovic, Shah, and Behbehani 1999), or between patrilineal but not matrilineal cousins in Amman (Hamamy et al 2005)—increases in *overall levels* of consanguinity have also been recorded, both in the region itself (Givens and Hirschman 1994; Al-Ghazali et al 1997; Jurdi and Saxena 2003) and in associated migrant communities in Europe (Reniers 2001).

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<sup>1</sup> Consanguinity refers to marriage between a man and woman related by blood. In the literature on consanguineous marriage in Arab societies, distinctions are typically made between marriages involving first cousins and more distantly related kin, between “patrilineal” and “matrilineal” cousins, and between those who are “parallel” or “cross”-cousins. Detailed descriptions of each of these terms appear in standard anthropology texts (e.g., Schultz and Lavenda 2000). In brief, however: first cousins refer to the children of siblings, while second cousins are more distantly related (e.g., often the children of first cousins); patrilineal and matrilineal cousins refer, respectively, to whether the relationship is through the father’s or mother’s side of the family; parallel cousins are the children of two same-sex siblings (e.g., two brothers); and cross-cousins are the children of a brother and sister.

This continued—and at times increasing—appeal of consanguineous marriage in certain settings begs a simple set of questions with which this paper attempts to grapple. Why do a significant proportion of people in Arab and institutionally similar Muslim societies (e.g., Pakistan) still marry their cousins? What factors underlie the attraction of kin? Or, in a form more easily operationalized analytically, what are the relative characteristics of those individuals who marry a cousin and those who do not? Or between those who marry patrilineal kin (those related through the father's side) as opposed to matrilineal kin (those related through the mother)?

These are important questions not only because they can be mapped onto a range of important issues and debates in the social sciences: for example, they call into play key motifs like authenticity, resilience, and power, or the tension between the desire for both tradition and change. They are also important questions because, on a more practical level, consanguineous marriage has been triply-blamed for the physical, political, and economic ill-health of the body politic in both Arab and some majority Muslim societies (these arguments are summarized in Appendix 1). Either way, a long tradition of research on marriage and kinship in both Arab and institutionally similar Muslim societies, and among non-Muslim groups that live in the Middle East (e.g., Coptic Christians and Druze) has given rise to a number of hypothesized answers to these questions. That research is largely qualitative. The primary aim of this study is to summarize the mechanisms described in these prior discussions and to assess their validity empirically in relation to two nationally representative marriage cohorts in Egypt: the first cohort married between 1988-1992, and the second between 1996-2000. A secondary aim, implicit in the choice of two non-consecutive cohorts, is to evaluate whether there has been any change in the characteristics of consanguineous and non-consanguineous marriage across the two periods, given the increasing awareness that such unions can have undesirable health

consequences. A third aim is to identify any differences in observed characteristics between women in two broad types of first cousin marriage: those between patrilineal kin and those between matrilineal kin.

The structure of the paper follows from these three aims. In the first section, drawing on the rich qualitative literature on Arab family structures, I review three mechanisms which are said to underlie the appeal of consanguineous marriage, and also some possible counter-arguments. In the second section, I introduce the Egyptian data used in the analysis, and describe both key explanatory variables which represent the three mechanisms, and some interpretive caveats. In the third section, I describe results from three analyses, each of which addresses one of the aims mentioned above.

## **2. SUGGESTED MECHANISMS**

The appeal of consanguineous marriage appears to work through three discrete sets of mechanisms. The first and second derive, respectively, from functional factors associated with the relationship between, on one hand, consanguinity and women's autonomy, and on the other, consanguinity and families' economic well-being. The third is related to a set of narrow, highly localized cultural factors.

### **2.1 Women's position**

The first mechanism is related to what, in the demographic literature, has variably been called women's position, status, autonomy or situation (Mason 1987; Basu 1992; Balk 1997; Schatz 2003), but in a simple sense refers to little more than women's ability to make decisions or influence others' decision-making. In Arab societies in general, this ability can be characterized as lying at the intersection of two contextual factors.

The first is women's legal position in Islam. Notwithstanding considerable

variation within and across Arab and Muslim societies, taken as a whole, these societies are notable for the private/public dichotomization of women's authority, and the parallel demarcation of separate social space and social networks for men and women (ie., women have some decision-making authority and rights to free movement in the home, but very little outside it). This has historically been one of the dominant frameworks for looking at women in Arab—and institutionally similar—societies (Ayrout 1963; Bourdieu 1972; Mernissi 1975/1987, 1996; Youssef 1978; Minces 1982; Davis 1983; Tillion 1983; Abu-Lughod 1986; Knauss 1987; Zenié-Ziegler 1988; Holy 1989; Dahl 1997; Moghissi 1999). Though some scholars suggest that the supporting ideology for this separation has its origin in pre-Islamic social institutions rather than in Islamic prescriptions, systematic gender inequalities are now solidly embedded in Islamic legal codes across all four (Sunni) Islamic schools of jurisprudence, as commonly discussed in relation to the realms of inheritance, value of legal testimony, rights to veto marriage and divorce (e.g., Jameelah 1976; Khan 1978; Siddiqi 1983; Ahmed 1986; Chaudry 1987; Mernissi 1996; Dahl 1997).

The second contextual factor is related to the key institutional response to this relative lack of legal authority. Simply, the manipulation of kinship ties is “the primary resource available to them [Arab women] in order to influence situations and decisions to their own benefit” (Rosen 1978:571 —see also Ayrout [1963:139] on “traditional feminism,” Mernissi 1975b, 1989; Davis 1983; Knauss 1987).

Herein lies the first advantage of consanguineous marriage. Simply, the hierarchy of marital ideals in societies in which there is a preference for consanguineous marriage tends to spawn an equivalent social hierarchy within the family, rooted in the high value traditionally placed on “kinship solidarity” [ *asabiyya*] (Abu-Lughod 1986; Knauss 1987; Holy 1989). Among the components underlying this notion is the idea that blood is a determinant of social place and, therefore, a means of legitimizing social relationships. This creates a general tendency to ascribe a superior

position to endogamous wives over exogamous wives. Both types of wives are expected to embed themselves in their affinal families through reproduction and the construction of exchange networks (Youssef 1978; Bourqia 1994). But the onus is on exogamous wives, since they are outsiders, and can be repeatedly reminded of that fact, and of the fact that they can easily be divorced, and that any children they produce belong not to them but to their husbands and their husbands' family (see in particular Tillion 1983:175; also accounts in Abu Lughod 1986; Mernissi 1994). In contrast, women in consanguineous marriages share their husbands' kin. They are often residentially proximate to them. They therefore have a larger local support network that can provide them with protection from what, for exogamous wives, are "often hostile surroundings" (Davis 1983:44; see also Davis 1983:37, Abu-Lughod 1986:57, and Hussein 1999).

## **2.2 Economic determinants**

The second mechanism used to explain the appeal of consanguineous marriage draws on one of two economic factors. The first is related to the laws of inheritance, and is most relevant to patrilateral marriage. Simply, Islamic law asserts that a woman is supposed to inherit half as much as her brother. Patrilateral cousin marriage therefore ensures that all property remains within the lineage (Goody 1983). Similarly, other types of endogamy ensure that those who control that property are closer to the natal family than if the daughter married exogamously. Either of these is likely to be particularly advantageous where trust in the motives of non-family members, or in one's ability to wield some control over them is, as mentioned above, low.<sup>2</sup>

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<sup>2</sup> The validity of this economic motive has been criticized by Hussein (1999) on the grounds that women rarely choose to assert their individual rights to property. Even where this is the case, however, he also recognizes that women tend to give the property to their natal brothers in return for the latter's social support and protection.

The second advantage is related to the value of the initial bridal payment ( *mahr*). The differential hostility of consanguineous and non-consanguineous marital environments, discussed above, is enshrined in differences in the cost of the *mahr*. This is the “traditional bride price” (Dahl 1997:73) that a groom, according to Islamic law, pays to the woman before marriage, but that in practice often goes to her father in order to help pay for the marriage celebrations associated with *shabka* (betrothal) and *dukhla* (consummation), and to pay for her dowry. It tends to be lower in consanguineous marriages for two reasons. First, differences in the value of expected *mahr* reflect a type of social insurance scheme. The *mahr* is often divided into *muqaddam*, which is “to be paid immediately on entering into the marriage contract, and *mu’akhkhar*, payment of which should be deferred so as to provide a guarantee in case of divorce,” (Dahl 1997:70) and which is not paid until this situation arises. The difference in the value of the *mahr* that is paid in consanguineous and non-consanguineous marriages reflects the extent to which the family of a consanguineous bride feel more confident that (a) the marriage will be more stable because it is endogamous—this appears to be the case (e.g., MacDonald 1985; Saha, Hamad and Mohammed 1990), and (b) in case of divorce they can exact the *mu’akhkhar* with much greater ease than they would be able to from an unrelated man, on whom they can impose fewer social sanctions. Second, differences in the value of *mahr* also have a compensatory function in order to offset the hostility of strangers among whom women not married consanguineously find themselves. One of Hussein’s (1999) Pakistani informants, for example—he claims that many others gave “similar responses”—asserts that

“if one opts for non-consanguineous marriage, the size of the *jahez* [the dowry]

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In other words, they exchange formal control over physical capital for the informal demands they can exert through social capital, leaving the former consolidated within their natal family which, if they are married consanguineously, is also their affinal family. This exchange also fits with the autonomy story described above.



is larger to ensure that the girl does not have to listen to any taunts. Our elders say that if you want to marry your daughter to strangers, then give her enough *jahez*, that she need not ask for anything from her in-laws.” (1999: 454)

### **2.3 Narrow cultural factors**

This final group of factors supporting consanguineous marriage refers to variability, across social groups or families, in the cultural and symbolic value associated with endogamy. It stems from the fact that all types of endogamous marriage are “expressive acts... [that] make pronouncements about the value of kinship solidarity” (Holy 1989:114).

There appear to be a number of such outlooks. One, which is relatively family or clan-specific, is related to a belief that the purity of the agnatic bloodline should not be diluted by outsiders (since even in unilineal societies a mother’s pedigree also affects her children’s status). For example, the *Sayyed* and *Qureshi* groups in Pakistan claim lineage to Muhammed as a reason for their maintenance of high levels of consanguineous marriage (Hussein 1999). And similar status-related sentiments are said to underlie the high consanguinity of Bedouin groups in Egypt (Abu-Lughod 1986).

Another such “cultural” mechanism, though this one is localized at a somewhat higher-level aggregation than the family, is related to trust and familial loyalties. Specifically, a fundamental structural problem in unilineal kinship arrangements, such as predominate in Arab and many Muslim societies, is the problem of “fission.” That is, where lineal relationships (those based on blood) are valued more than affinal relationships (those based on marriage) conjugal ties are relatively undervalued. Consequently, where the interests of different families or clans diverge, it is feared that incoming wives’ loyalty to natal kin may continue to outweigh their loyalty to their affinal kin (Schultz and Lavenda 2000). The extent to which such concerns actually affect marital practice is presumably a product of a host of locally-

specific events, cultural memories, and historiographies that are seen to be salient to trust in kin and strangers. But where they are a concern, lineage endogamy offers a marital solution since, particularly where marriage is within the patriline, the wife's natal and affinal kin are now one and the same. More generally yet, these types of trust issues may also be related to concerns about the alienation of a lineage's wealth through inheritance, discussed above.

In either of these cases, the value associated with endogamy tends to be constructed at a local level, yielding considerable heterogeneity in the within-country prevalence of consanguinity across areas and social groups, and high intergenerational correlations in the prevalence of consanguineous unions (e.g., Imaizumi 1988; Hussein and Bittles 1998).

## **2.4 The flipside**

Complicating factors mean that none of these three types of mechanisms unambiguously promote consanguineous marriage. The first complication is related to an attraction to outsiders. If we assume that the potential bride and groom have some decision-making authority with respect to prospective marital partners (more on this in section 3.2), then this can be narrowly restricted to sexual attraction *as per* the Westermarck Hypothesis—which proposes that at a biological level people tend to be less attracted to family members than to non-kin. In turn, this implies that the culturally preferred, most proximate types of consanguinity are likely to be the least sexual. Abu-Lughod writes: “Certain young men complained that the trouble with marrying a cousin was that she was like a sister. An unmarried man mused, ‘You won't feel like talking and flirting. And she knows everything about you, where you go, who you see’” (1986:57). And one of Mernissi's informants discusses marrying a cousin “for whom I felt no passion” (1989:58), and with whom, because of his impotence—perhaps an indicator that her lack of passion was reciprocated—she

ceased to have sex within a few years of marriage. To the extent that sexuality has become an increasingly important ingredient in Arab marital decisions, suggested by Mernissi (1975b), by qualitative accounts of elopement (e.g., Shaaban 1988), and by articles in the popular press (e.g., Braude 2006; Zoepf 2006), it will detract from the appeal of a consanguineous union, especially one between close patrilineal cousins who likely grew up in a shared living space, albeit with the standard male/female boundaries. On the other hand, a person attracted to a more modern type of marriage of this type may also be more likely to value some autonomy, to which the richer social capital associated with consanguinity can contribute. In either case, the attractions of consanguinity as a pathway to autonomy may be somewhat undermined by the appeal of a more sexualized marital relationship.

More interesting, perhaps, an attraction to outsiders may be extended to include an attraction to heterogeneity in personal or cultural traits. A key theme in the sociological treatment of modernization is the reordering of preferences for more local/homogenous and more global/heterogenous objects, including the increasing familiarity with, and attraction to, strangers (e.g., Douglas 1970; Levy 1972; Giddens 1990), and the necessity of placing greater trust in anonymous institutions and their representatives (e.g., Simmel 1950). These shifting preferences on a larger scale may affect favored types of spouses, and may also affect the trust issues which are said to influence marital decisions. In particular, people who have had more exposure to strangers—for example, in schools and government bureaucracies—may be somewhat more attracted to the idea of an unrelated spouse. Indeed, the negative relationship between frequency of consanguinity and women's education seen in a number of studies (e.g., Vardi-Saliternik et al 2002; Jurdi and Saxena 2003) is consistent with this modernization-cum-attraction to outsiders argument.

Complicating flip sides to the economic arguments should also be noted. First, it is easy to imagine how the higher bridewealth associated with a non-consanguineous

marriage presumably would act as an incentive, in particular for the bride's parents and brothers (who may be saving for their own bridewealth), to agree to a union of that type. Second, although it may make sense to marry within the family in order to maintain *existing* family wealth, it makes little sense where there is little or no wealth to maintain. Similarly, even where there is existing wealth to maintain, a more risk-averse marital strategy from the perspective of the family would be to forge new exchange relationships, especially with wealthier families, or with families whose income is not susceptible to the same types of shocks as one's own. The higher *mahr* that a groom would give to his unrelated father-in-law in this case would not only have a compensatory function. It would also serve as a somewhat riskier investment in network diversity in which, in return for a higher premium (than that demanded by some other type of marital union), the groom and his family would be assured higher returns in case of need, or at least returns from an income source that is less correlated with that of the natal family's. In developing countries with limited publicly-funded safety nets, this is surely an important consideration.

## **2.5 Summary**

Over and above the demands of local normative practices, which are likely to vary considerably across communities in parallel with local cultural tastes and processes, the proposed advantages of consanguineous and non-consanguineous marriage in relation to women's autonomy and household wealth are summarized in Figure 1. Whether a given marital decision is made by an individual or a group of individuals, it will likely be framed in response to at least some of these factors. In particular, at the individual level, an endogamous marriage is more likely to improve a wife's relations with her husband's kin from the beginning of the marriage, giving her more decision making authority. In addition, at the familial level, it will likely lead to a more trusting alliance between her natal and affinal family, it will cost less to arrange

the marriage, and the wealth to which the wife will eventually have access will remain within the family, formally if the marriage is patrilateral, and informally in a matrilateral consanguineous marriage.

*Figure 1 about here*

On the other hand, non-consanguineous marriages are not without their own advantages. At the individual level, unrelated partners may be more attracted to each other sexually. And at the familial level, the wife's natal family is likely to receive more bridewealth and, insofar as marital ties trigger long-term exchange relationships, non-consanguineous marriages help diversify family support networks.

### **3. DATA, METHODS AND HYPOTHESES**

#### **3.1 Data**

The extent to which each of these suggested mechanisms can be neatly rendered into testable hypotheses is somewhat constrained by the fact that no single extant dataset has detailed information on local marital practices, individual's natal and affinal kin, wealth and bridewealth, and women's autonomy. On the other hand, I argue here that satisfactory indicators of most of these factors can be constructed out of standard Demographic and Health Survey data. This analysis therefore uses women's data from the 1992 and 2000 waves of the Egypt Demographic and Health Surveys (EDHS). These are both nationally representative datasets. In 1992, 9,978 ever-married women between the ages of 15 and 49 were sampled. The 98.9 percent response rate yielded a total sample size of 9,864 women. The 2000 sample was larger, and the 99 percent response rate yielded a total sample of 15,573 women (El-Zanaty and Way 2001: 221).

In addition to the collection of standard sociodemographic characteristics, both

the EDHS survey instruments included items on respondents' premarital familial relationship to their current or last husband, on a number of premarital characteristics, and on their autonomy and wealth (though not bridewealth). The variables directly relevant to the analysis are described in greater detail below.

Finally, Egypt provides fertile grounds for an analysis of consanguineous marriage. According to the 1992 and 2000 waves of the EDHS, 40.2 and 38.9 percent (respectively) of all marriages are consanguineous, placing Egyptian prevalence roughly midway between the higher Gulf and lower Maghrebi levels. There is also substantial within-country variation in Egypt, ranging from a low of approximately 25 and 17 percent in urban Governorates like Port Said—lower levels than those noted in Beirut (Khlat 1988) and Kuwait City (Radovanovic et al 2003)—to roughly two-thirds of all marriages in Upper Egypt Governorates like Aswan and Qena. These latter appear close to the demographic limit (Holy 1989; Leslie 1990).

### **3.2 Methods**

There are two main sets of analysis. The primary one aims to identify the relative characteristics of women who have married a first cousin, a more distant cousin, or an unrelated man. It also attempts to evaluate changes in some of these characteristics—in particular, the three mechanisms discussed above—across the two cohorts. This analysis therefore uses multinomial (polytomous) logistic regression of the pooled 1992 and 2000 EDHS cross-sectional data.

A second analysis then aims to identify the relative characteristics of women wed to one of two different types of first cousins: to a patrilineal or matrilineal first cousin. This is intended to see whether the often stated cultural preference for patrilineal kin expresses itself differently in terms of the three mechanisms. In particular, it allows us to identify whether patrilineal and matrilineal marriage really do vary by wealth—as discussed earlier, each has different implications for both

inheritance and social capital, two of the hypothesized attractions of consanguinity (I return to this theme immediately prior to that section of the analysis). This analysis uses logistic regression of the 2000 EDHS data, since only these data distinguish patrilocally- and matrilocally-related husbands.

To minimize the danger of reverse causation—where, for example, the type of marriage that a woman chooses subsequently affects her household’s wealth or her own outlook on autonomy—an assumption is made that such effects would be more likely to emerge in the long-term. All analyses are therefore restricted to women who are currently married to their first husband (94.6 and 95.7 percent of the sample across the two surveys), and whose marriage began in the last 5 years. Note that this correction is not made in other studies of consanguineous women’s characteristics (e.g., Givens and Hirschman 1994; Jurdi and Saxena 2003). Further modifications to the 2000 round of data include limiting it to:

- women in the same 21 governorates sampled in 1992, since that eases the interpretation of changes in observed characteristics;<sup>3</sup> and
- the 92 percent of women who were *de jure* residents of sampled households (since only these were asked questions about household wealth used to create a wealth index, as discussed below).

Consequently, the total sample size used in the main analysis is 4,494 women, 1,801 of whom are from the 1992 data (1988-1992 marriage cohort) and the remaining 2,693 from the 2000 data (1996-2000 marriage cohort). Finally, the total sample size used in the second analysis—in which we compare women married to patrilateral and matrilocally first cousins—is 560.

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<sup>3</sup> The 21 Governorates represented in both EDHS 1992 and 2000 are Cairo, Alexandria, Port Said, Suez, Damietta, Dakahlia, Sharkia, Kalyubia, Kafr El-Sheikh, Gharbia, Menoufia, Behera, Ismailia, Giza, Beni Suef, Fayoum, Menya, Assuit, Souhag, Qena, and Aswan. EDHS 2000 data not used in this analysis are from Red Sea, New Valley, Matroh, North Sinai, and South Sinai Governorates.

An interpretive caveat should also be noted. Although all respondents in these EDHS data are women, the models make no explicit assumption about who was the key decision-maker with respect to these women's marital partners. The reason is that, notwithstanding the fact that marriages in Egypt, as in other Arab societies, are often arranged by parents or other relatives, women cannot legally be married against their will since they have to at least tacitly assent to the union (by offering no protest during the signing of the marriage contract [Dahl 1997]). This may not sound like significant authority. However, qualitative research implies that, other than very young brides (Zenié-Ziegler 1988; Mernissi 1989), women are able to wield considerable veto power over parental choices, primarily because parents have little desire to alienate their daughters by imposing a totally undesirable partner (Rosen 1978; Davis 1983), and because parents and other family members bear part of the burden of a woman's repudiation or divorce insofar as the failure of a marriage which they themselves have arranged or sanctioned will lead to the return of the daughter to their care (though see life-histories recorded by Shaaban [1988] for the different trajectory of failed "love" marriages). In short, while the following models may be framed at the individual level, and aim to identify the characteristics of women married to cousins as opposed to unrelated husbands, there is no underlying interpretive assumption that the type of marriage that these women find themselves in is solely a function of their own preferences or choices.

### **3.3 Key explanatory variables**

In addition to a standard set of control variables—the respondent's current age, her age at marriage, level of education, childhood urban residence, current urban residence, whether she worked before marriage, and the spousal age difference—three sets of variables are specified in order to assess the relative contributions of the three mechanisms discussed above to consanguineous marriage.



### *3.3.1 Index of autonomy*

To the extent that women's position and autonomy are at least partially synonymous, the foregoing discussion suggests that, net of adequate control variables, first cousin wives should have higher autonomy scores than women married to unrelated husbands. In order to explore this hypothesis, the analysis uses a simple index of autonomy, an additive scale constituted by a number of "gender"-related questions, standard on most Demographic and Health Survey instruments. In both the 1992 and 2000 EDHS, this includes a series of questions on which family member should have authority in given spheres of decision-making (household budget, visiting friends or relatives, an additional child, children's education, children's marriage plans, use of family planning, and the wife's employment). The 1992 questionnaire also included three other questions dealing with freedom of movement (whether the respondent is allowed to go out alone to buy household items or visit relatives) and other gender-related issues (should a woman be allowed to work; should she keep quiet in a disagreement with her husband). These also contribute toward the 1992 index. In both the 1992 and 2000 data, however, the index of autonomy ranges from 0-20, with higher scores indicating more autonomous responses.<sup>4</sup>

Since there is a strong relationship between this measure of autonomy and region of residence – at the ecological level in the 1992 data, for example, there is a negative correlation coefficient of -0.88 in the proportion of women married to first cousins and their scores on the autonomy index across the 21 Governorates – I also specify a

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<sup>4</sup> Note that models used to generate the results reported below were also run using an index of autonomy which is the same across both rounds. That is, it refers only to reported decision-making authority. Results in general, and for autonomy in specific, were substantively identical to those reported here (available from the author upon request). In this analysis I use the fuller autonomy index, even though it varies across cohorts, because "freedom of movement" and other gender-related issues are conceptually important components of autonomy (see Mason [1987] for a general discussion and Kishor [1995] on these measures in the Egyptian context).

relative measure of autonomy: the respondent's own reported status in relation to that of others in the Primary Sampling Unit (PSU). This allows us to identify cases in which the communities in which women are most likely to marry their first cousins tend to be less autonomous on average, but *within* those communities first cousin wives are somewhat more autonomous than unrelated wives. The underlying hypothesis is that the relative measures of autonomy will be positively associated with consanguinity, reflecting the greater autonomy of women in consanguineous marriages *in the local setting*.

### 3.3.2 Index of wealth

The absence of data on bridewealth and on the wealth of natal or affinal kin means that it is more difficult to fully assess the hypothesized relationships between consanguinity and wealth. However, EDHS contains data on durable assets that can be combined into a summary measure of household wealth. Given the analytic restriction to two recent, relatively young marriage cohorts, this summary measure should be positively correlated with unobserved parental wealth. Moreover, because marriage tends to be homophilous with respect to wealth, it is also reasonable to assume that the wealth of a wife's natal and affinal kin should also be correlated, allowing for the identification of differential marital patterns by own wealth, if not by the more complex interactions with the wealth of natal and affinal kin.

The specific measures used to generate the wealth index in both the 1992 and 2000 data include: whether the house is owned by the family, type of flooring in the house (parquet, tile, carpet or vinyl *versus* dirt or cement), whether there is piped water in the house, whether there is a modern or traditional flush toilet *versus* some other kind, and whether there is electricity. These are combined into an additive index of wealth ranging from 0-5, with wealthier households scoring higher. Similarly, due to the strong negative correlation at the ecological level between the

prevalence of first cousin marriage and the wealth index—since absolute levels of consanguinity are higher in the poorest governorates—both absolute and relative measures of wealth are used. Finally, measures are specified in both standard and exponential formats, allowing for the possible non-linearity of the relationship between type of marriage and wealth. For example, the review of economic mechanisms suggests that the middling wealthy may be less likely to engage in non-consanguineous marriage because, unlike the poor, they have some wealth to maintain, but have far less financial leeway to make risky investments in untrustworthy non-kin.

### *3.3.3 Controls for local variability*

Two variables are used to provide some measure of control for group-level heterogeneity in normative marital patterns. The first is the proportion of women *in the primary sampling unit* (PSU) who have married in their natal village. This is intended as an indicator of tastes for endogamy at the most local level. Endogamy includes forms of consanguineous marriage (e.g., where families are patrilocal, it will index marriages among patrilineal kin), but is not limited to consanguinity since, for example, it also captures more general village-level endogamy among members of unrelated clans. In the 1992 EDHS data, the vast majority of this younger marriage cohort (89 percent) reported not having moved since birth, consistent with qualitative reports in which “no woman marries outside [the village] unless she has not received a good offer within the village” (Lynch 1984:12).<sup>5</sup> The second variable

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<sup>5</sup> This raises a secondary set of questions about what sort of currently married women live in the same village or area in which they were raised. Cross tabulations suggest that they are less likely to have lived in an urban area as children, less likely to currently be an urban resident, and they have other characteristics typical of this residential background. In particular, in comparison to their more mobile counterparts, recently married women who live in the same village or area in which they were raised have almost 3 years less schooling, were less likely to have worked before marriage, and married about 2 years younger. When combined together in a

used to index normative patterns is the proportion of women *in the Governorate* who have married first cousins.

It should be noted that both of these indicators use a mean calculated over the whole sample but net of the individual's own response. That is, for each variable  $x$ , the mean over  $n$  respondents in area  $v$ —here the PSU and Governorate, respectively—is, net of respondent  $r$ 's own contribution to the mean:  $((\sum(\text{sum}) x_v) - x_r) / (n-1)$ . While there is no meaningful difference in the results where one uses this modified mean in place of the real one (results available from the author), the modified mean is substantively more appropriate.

## 4. RESULTS

### 4.1. Demographic characteristics of women in consanguineous marriages

An initial set of cross-tabulations, presented in Table 1, allows us to describe the general characteristics of women in these two marriage cohorts. Although there are some differences between the two cohorts in overall levels, the relative frequencies across types of marriage are very similar and, for the most part, fit with expectations. For example, in comparison to women married to unrelated men, women married to first cousins are less likely to have spent their childhood in an urban area, to be currently living in an urban area, or to have ever moved out of their natal village. First cousin wives also tend to have less formal schooling, are less likely to have worked before marriage, and they married younger. They are also somewhat more likely to be living in governorates with a higher prevalence of consanguineous marriage, particularly in the 1992 cohort. Finally, although women married to first cousins tend to have lower absolute scores on the wealth and autonomy indices—

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logit—with "moved since childhood = 1" and "lives in childhood residence = 0"—only current urban residence and age at marriage remain significant predictors (results available from the author)

consistent with the negative correlations between the prevalence of consanguinity and wealth and autonomy indices, discussed above—and lower relative wealth, there appears to be a difference across the cohorts in correlation with relative autonomy: it is higher among first cousin wives in 1992, but lower in 2000.

*Table 1 about here*

#### **4.2 Consanguineous vs. non-consanguineous marriage**

Table 2 presents estimates from two multinomial logit models which describe the net relationships among these covariates in the pooled 1992 and 2000 data, with the reference marriage category being women married to unrelated men. Consistent with EDHS sampling practice, both models specify robust standard errors at the cluster level, defined as the PSU.

The first model presents baseline estimates of the characteristics of women in consanguineous marriages. Among those which are consistent with the bivariate results in Table 1, we see that, in relation to women married to unrelated husbands, women married to first cousins have less formal education, married younger, married an older spouse, and are less likely to have grown up in an urban area or to have worked before marriage (these two latter effects are also true of marriage to more distant cousins). Consistent with expectations, they are also more likely to live in an area with higher levels of village endogamy, and in a governorate with a higher percentage of consanguineous marriages among women of all ages and older cohorts. Finally, women married to a first cousin tend to be poorer in absolute terms, but wealthier than their neighbors, while those married to more distant cousins are poorer in both absolute and relative terms. All these wealth effects are, however, only borderline significant.

A number of noteworthy non-effects also emerge in Model 1. Women married to first cousins and more distantly related kin do not differ from non-consanguineous counterparts in terms of current urban/rural residence or their own age (including age<sup>2</sup>, results not shown). Nor do they differ in terms of absolute or relative measures of autonomy. Finally, model 1 also suggests that there was no significant reduction in the likelihood of first cousin marriage between the 1988-1992 and 1996-2000 marriage cohorts, but there was a reduction in marriage to more distant kin.

*Table 2 about here*

Building on the baseline analysis in Model 1, a series of models were specified in which interaction terms were added to the six core variables of interest: the two indicators each of local marriage norms, household wealth, and women's autonomy. Three-way interaction terms were also added, allowing us to explore differences by marriage cohort and urban/rural residence. Model 2 is the best-fitting of these models.<sup>6</sup> It also provides better model fit overall than Model 1, as seen in the 14 point reduction in the log pseudolikelihood (7 d.f.,  $p \sim .05$ ).

In general, Model 2 shows that consanguinity's relationship to wealth and autonomy, as well as its relationship with local marital norms, varies significantly across the urban/rural divide and across the two cohorts. It also implies that there is some collinearity between wealth effects and the highly variable autonomy effects across cohorts and the urban/rural divide, in particular in relation to women married to more distant cousins. It is useful to describe the effects in more specific terms.

In terms of respondents' background characteristics, estimated effects in Model 2 are substantively equivalent to those seen in model 1. The only exception is that the

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<sup>6</sup> Best-fit was judged by joint-chi<sup>2</sup> test for all interaction terms. Other models are available upon request.

addition of new interaction terms—specifically, those on the absolute and relative autonomy variables—switches the sign on spousal age difference such that first cousin wives now appear *more likely* to have married someone closer to them in age than unrelated wives.

Other differences appear in the three groups of variables which are of primary interest here. First, the point estimate for one of the local normative indicators – the percentage of women living in one’s birth village – is substantially reduced, and the effect no longer significant. In contrast, both the point estimate and significance levels of the other indicator – the percentage of women in the governorate married to first cousins – remain relatively unchanged.

Second, the addition of heterogenous autonomy effects undermines the relationship between marriage to a first cousin and absolute levels of wealth seen in model 1. It flips the direction of the relationship between a household’s relative wealth—that is, relative to other women in their PSU—and marriage to a more distant cousin. But on the other hand, it leaves unchanged, though still only borderline significant, the positive relationship with a household’s relative wealth. In other words, with or without controls for local normative indicators and autonomy, including heterogenous autonomy effects, first cousin wives tend to be in wealthier than average households *within* their communities.

Finally, there are the women’s autonomy effects themselves, by which we refer to the complex series of interactions between consanguineous marriage and women’s autonomy by urban/rural residence and marital cohort. In order to ease the interpretation of these effects, Table 3 presents the sum of predicted logits on autonomy variables seen in Table 2’s model 2. Since the autonomy terms associated with more distantly related wives are not different to those of unrelated wives, Table 3 restricts itself to logits on women married to a first cousin (relative to those with an unrelated husband, the reference category in the models).

*Table 3 about here*

In general, Table 3 shows that, relative to unrelated wives, first cousin wives in both urban and rural settings and both marriage cohorts reported lower absolute levels of autonomy, albeit with some variation in the strength of the relationship across the urban/rural and temporal divide. In particular, the greatest difference in absolute autonomy scores between the two types of wives in 1992 was for rural women, and in 2000 was for urban. Similar variation across the urban/rural and temporal divide can be seen in the relationship between type of marriage and relative autonomy. Here, too, women married to first cousins in the 1988-1992 marriage cohort tended to have considerably lower relative autonomy (in addition to absolute autonomy), though they were no different in urban areas. In the 1996-2000 marriage cohort, in contrast, the strongest negative relationship between women's autonomy and first cousin marriage was seen in urban areas. In rural areas, in contrast, there was the expected positive relationship—the only sector in which the expected positive relationship with relative autonomy could be found.

#### **4.3 Patrilineal vs. Matrilineal first cousin marriage**

As noted above, one theme which emerges from the qualitative literature on Arab marriage patterns is that the wealth and autonomy-related advantages of consanguineous marriage differ across different types of first cousins. To some extent this stems from the fact that, at least formally, patrilineal parallel cousin marriage, or marriage to one's father's brother's son/daughter, is preferred over patrilineal cross-cousin marriage (marriage to one's father's sister's son/daughter) or matrilineal parallel or cross-cousin marriage. In the framework discussed above, this hierarchy of marital ideals spawns an equivalent social hierarchy within the



family that is rooted in *asabiyya*. Beyond the direct impact of this hierarchy of marital ideals, however, differences between types of first cousin marriage have practical implications for the wealth- and autonomy-related mechanisms discussed above. First, since Arab societies also tend to have patrilocal postmarital residential patterns, patrilateral *parallel cousin* marriage keeps women in their natal homes, whereas in any of the three other types of first cousin marriage, they would tend to leave their natal homes (even if they often still stay within their natal village or town). This has clear implications for the strength of the local support network that different types of wives can rely on. Second, the alienation of a family's wealth through a daughter's rights to inheritance is prevented through a patrilateral cousin marriage of either type. In contrast, where she marries a matrilateral first cousin, her inheritance would eventually be subsumed into his.

In this analytic section, I examine whether the three mechanisms which are said to promote consanguineous marriage vary across the two types of first cousin marriage distinguished in the 2000 EDHS: patrilateral and matrilateral first cousin marriage. In this way we can see whether the frequently stated cultural preference for patrilateral kin expresses itself differently in terms of the three mechanisms. In particular, do patrilateral cousin wives' autonomy and wealth profiles vary from those of matrilateral cousin wives?

*Table 4 about here*

Table 4 presents results from two logit models which describe the net relationships among the same baseline covariates used in Table 2 and the type of first cousin marriage reported in 2000. The reference marriage category in both models is women married to matrilateral first cousins.

Model 1, the baseline model, includes all variables used in Model 1 of Table 2.

Among the seven background characteristics, there is only one significant difference between these two types of wives: spousal age difference is smaller between patrilineal than matrilineal wives. Among the three other groups of variables, there is no difference in indicators of local marital norms – not surprising since we would expect the overall prevalence of endogamy and consanguineous marriage to support both patrilineal and matrilineal marriage – but there are some differences in wealth and autonomy.

These wealth and autonomy differences are brought into sharper relief in Model 2. This is the best-fitting of a series of models which included different combinations of variables used in Model 1. The significant negative effect on relative wealth shows that, in any given PSU, women in wealthier-than-average households are less likely to be married to a patrilineal than matrilineal cousin. Assuming some correlation in wealth across generations, this suggests that the wealthier-than-average appear to be less concerned with alienating some portion of familial wealth through matrilineal marriage than the poorer-than-average. Presumably this is because they can afford to have some wealth alienated.

The coefficients on the two autonomy variables tell a variation on the same story. On the relative measure, patrilineal wives tend to be more-autonomous-than-average. This makes sense when we take into consideration their greater likelihood of having remained in their natal home after marriage, allowing them to draw on large family networks. On the absolute measure, on the other hand, patrilineal wives tend to give less autonomous responses. This is difficult to interpret. It does not fit with qualitative data summarized above. Not can it be statistically “explained” by including any other variables.

## 5. DISCUSSION

These Egyptian data provide variable support for the three mechanisms through which consanguineous marriage allegedly maintains its appeal. We review them in turn, moving from least to most problematic and puzzling.

The third mechanism, relating to the two measures of local marital practices has consistently positive effects on the likelihood that a marriage which occurred in the five years prior to data collection would have been consanguineous. This points to the powerful within-community correlations in marital practice, and signals the strength of the clustering of underlying ideologies that cannot be probed further with these data.

Relatively simple patterns can also be found in relation to the wealth mechanism. Simply, although there are no differences in absolute levels of wealth between unrelated wives and either first cousin wives or women married to more distantly related cousins, women in both types of consanguineous marriages tend to be wealthier than average *within* their communities. Each of these is also a relatively stable effect since there is no significant urban/rural or temporal heterogeneity in either of them. Overall, then, the wealth variables act as expected since they suggest that wealthier families tend to be more consanguineous than the less wealthy. On the other hand, results in Table 4 have also shown that this effect does not appear to work through the traditional patrilineal mechanism. Rather, women in wealthier-than-average households are more likely to be married to a matrilineal than a patrilineal cousin. In other words, there is some alienation of wealth, but it is not to complete strangers.

Results for the autonomy mechanisms are the most complicated and difficult to interpret with full confidence. Analysis suggests that there is no difference in autonomy between unrelated wives and those married to more distantly related kin. It also suggests that women married to first cousins tend to have lower autonomy

than unrelated wives in both rural and urban areas, though there is some instability across the marriage cohorts in these urban/rural differences. Most notably, however, we see considerable temporal and urban/rural heterogeneity in first cousin wives' relative autonomy. Only among rural first cousin wives in the more recent marriage cohort do we find the expected positive relationship between first cousin marriage and relative autonomy. Among the other groups we find either no relationship (urban first cousin wives in the 1992 cohort) or a negative relationship (rural 1992 and urban 2000 subsamples).

Two explanations of these results appear plausible. The more important one, we suspect, is that there is some type of compositional effect across the two marriage cohorts. Specifically, consanguineous marriage in urban areas attracted a somewhat different set of individuals than its counterpart in rural areas across the two periods—perhaps as a result of increasing awareness of health implications of consanguineous marriage. Alternatively, we are not unconvinced that this heterogeneity in observed effects may stem from an undesirable property of the autonomy variables. That is, there may be some underlying problem with how autonomy is measured along the lines identified in other settings (Ghuman, Lee and Smith 2001; Mason and Smith 2001; Bignami-van Assche, Reniers and Weinreb 2003). This interpretation would also help explain the somewhat unexpected autonomy differences between patrilateral and matrilineal first cousin wives.

Finally, we should also note the marginal time-trends in consanguinity across these two recent marriage cohorts. In both bivariate analyses and the simpler model 1 in Table 2), we see mild reductions in both first cousin marriage and marriage to more distantly related kin. The frequency of the latter, in particular, appears to have fallen across these two marriage cohorts. Overall, these trends are consistent with the relative frequency of consanguinity across the older marriage cohorts in these data. For example, among women married only once in the 1992 EDHS data, the percent

married a cousin was 45, 40, 43, and 38 in the four quinquennial periods prior to data collection (ie. 1973-77, 1978-82, 1983-87, and 1988-92). Although these raw frequencies do not account for the greater marital stability of consanguineous unions (e.g., Saha, Hamad and Mohammed 1990), they fit the mild reduction observed between the two new cohorts in the 1992 and 2000 data.

## **6. CONCLUSION**

Caveats remain. As noted above, the data used here were not designed to test the mechanisms which allegedly support consanguineous marriage. They therefore do not contain some theoretically important variables such as indicators of the actual process of marital decision-making—including information on who makes, or made, the ultimate decision—explicit measures of natal or affinal family wealth, and information about bridewealth. On the other hand, the fact that the data are fully outcome-oriented—that is, they identify the type of marriages that women of given characteristics actually have—makes them adequate to describe variability across key groups of explanatory variables. As shown, this is sufficient to allow us to identify some level of heterogeneity within the total population of women married consanguineously. Nonetheless, the absence of some of the direct measures begs questions about some of the micro-cultural phenomena that underlie these outcomes, and which only a carefully designed survey instrument or more focused qualitative research could address.

Another issue is related to the future appeal of consanguinity. Whatever factors currently influence prospective brides, grooms, or other pertinent decision-makers in their choice of partners, there appear to be at least two emerging constraints that will place downward pressure on the practice of consanguinity. The first is related to changing notions of ideal marriage and women's autonomy. The long-term prospects for consanguinity look less attractive if Arab societies become more stranger-

oriented, more part of a global or at least pan-Arab socioeconomic system, and if tastes in Arab societies come to be more closely allied with sexual attraction and conjugal marital models than with replicating the marital practices of past generations and/or expressing allegiance to kinship solidarity through marriage acts. There is some evidence, some of which has been noted above, that these transitions have begun. Other products of these changes are manifesting themselves. Arab societies, for example, are increasingly monetized, and partly because of this and because of increases in women's schooling and demands for independence, there is an emerging preference for wives who can work (e.g., El-Messiri 1978; Moghissi 1999). In the medium or long-term, work, especially extrafamilial work, will likely generate some measure of independence from family members and their authority, both by bringing unwed males and females into some contact with non-familial strangers, and by reducing their financial dependence on family.

On the other hand, these trends toward a more stranger-oriented society with more conjugal families and working women may be somewhat constrained by ongoing political and economic instability in many areas of the Arab world. To the extent that such instability pushes people into valuing more local affiliations and networks, the fact that kinship underlies these affiliations and networks, and that consanguinity is "an expressive act ... [that] make pronouncements about the value of kinship solidarity" (Holy 1989:114), suggests that consanguinity will continue to be an important component of marriage patterns in Arab societies for the foreseeable future.

Perhaps the only constraint on this continuity is represented by the second trend, even more structural, and related to the effects of ongoing demographic changes on individuals' ability to exercise a preference for consanguineous marriage. Simply, even if a cultural preference to wed cousins remains strong in the future, the ability to exercise that preference will inevitably be affected by current fertility, that is, the

extent to which extended families will produce enough cousins of roughly equivalent age. The ongoing fertility transition within the Arab world means that within one generation, in particular in the relatively low fertility countries of the Maghreb, there will be many fewer cousins available in the appropriate age-groups. Indeed, in addition to the factors mentioned above, these demographic constraints may partly underlie the lower incidence of consanguineous marriage in urban areas observed in these data, and more generally in the consanguinity literature.

In either case, therefore, while the apparent failure of past attempts makes it a somewhat perilous exercise to predict the medium- or long-term prospects of consanguineous marriage, it seems likely that at least some of the mechanisms that underlie its current appeal—or the ability to enact those preferences in actual marital practice—will weaken. This does not, of course, preclude the emergence of other institutional supports or mechanisms. But that we must leave to future observers.

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**Table 1. Selected characteristics of women who first married within the last 5 years and are still in that first marriage, by year of Egypt Demographic and Health Survey (EDHS) and type of marriage .**

	EDHS 1992				EDHS 2000			
	1 <sup>st</sup> cousin (N=404)	Other relation (N=296)	Not related (N=1101)	All (N=1801)	1 <sup>st</sup> cousin (N=560)	Other relation (N=412)	Not related (N=1721)	All (N=2693)
Current age	22.3	22.7	23.9	23.4	22.3	21.9	23.5	23.0
Years of schooling	5.2	6.2	7.7	6.9	7.0	6.9	9.1	8.3
Childhood residence in urban area	34.4	36.2	53.3	46.3	29.3	27.7	48.9	41.6
Currently resides in urban area	39.1	39.5	56.5	49.8	30.2	31.3	49.6	42.7
Worked before marriage	21.8	24.0	35.5	30.5	10.9	10.9	22.4	18.3
Age at marriage	19.3	19.7	20.9	20.4	19.8	19.7	21.1	20.6
Spousal age difference	5.8	7.4	7.0	6.8	6.0	7.5	7.1	6.9
Percentage of Governorate married to 1 <sup>st</sup> cousin	28.7	26.9	23.4	25.2	23.7	24.2	21.1	22.1
Wealth index <sup>1</sup>	3.0	3.1	3.4	3.3	2.9	2.9	3.1	3.0
Household wealth relative to others in PSU <sup>2</sup>	.25	.28	.29	.28	.20	.23	.28	.26
Autonomy index <sup>3</sup>	7.9	8.3	9.2	8.7	8.1	7.9	9.1	8.7
Autonomy relative to others in PSU	-.39	-.47	-.56	-.51	-1.4	-1.5	-.89	-1.1

Notes: <sup>1</sup> Wealth index refers to an additive scale including whether the house is owned by the family, type of flooring in the house (parquet, tile, carpet or vinyl versus dirt or cement), whether there is piped water in the house, whether there is a modern or traditional flush toilet versus some other kind, and whether there is electricity; <sup>2</sup> PSU refers to Primary Sampling Unit; <sup>3</sup> Autonomy index refers to an additive scale including answers to series of questions on which family member should have authority in given spheres of decision-making, and freedom of movement.

**Table 2.** Characteristics of women in consanguineous marriage who are in their first marriage and whose marriage took place in the five years preceding the survey, relative to unrelated wives of equivalent characteristics (reference category) in two Egyptian marriage cohorts, by proximity of consanguineous relationship (N=4,494).

	Model 1				Model 2			
	1 <sup>st</sup> cousin		Other relation		1 <sup>st</sup> cousin		Other relation	
<b>Marriage cohort</b>								
1988-1992								
1996-2000	-0.094	(0.11)	-0.249	(0.13) ‡	-0.616	(0.53)	.240	(0.58)
<b>Background characteristics</b>								
Current age	0.004	(0.03)	-0.031	(0.03)	-0.004	(0.03)	-0.032	(0.03)
Educational level	-0.094	(0.05) ‡	-0.063	(0.05)	-0.080	(0.05)	-0.055	(0.05)
Childhood residence in urban area <sup>2</sup>	-0.316	(0.14) *	-0.441	(0.14) **	-0.324	(0.13) *	-0.455	(0.14) **
Current urban residence	0.126	(0.14)	0.164	(0.16)	-0.512	(0.51)	-0.404	(0.62)
Worked before marriage	-0.420	(0.10) ***	-0.330	(0.12) **	-0.417	(0.10) ***	-0.324	(0.12) **
Age at marriage	-0.064	(0.03) *	-0.000	(0.03)	0.063	(0.03) *	0.001	(0.03)
Spousal age difference	0.076	(0.01) ***	-0.001	(0.01)	-0.075	(0.01) ***	-0.002	(0.08)
<b>Local normative indicators <sup>2</sup></b>								
% of women living in birth village	0.374	(0.17) *	0.540	(0.22) *	0.175	(0.20)	0.382	(0.25)
% of Governorate women married to 1 <sup>st</sup> cousins	5.67	(0.62) ***	4.66	(0.69) ***	4.90	(0.70) ***	4.64	(0.79) ** *
<b>Wealth variables</b>								
Index of HH (household) wealth—absolute	-0.171	(0.10) ‡	-0.212	(0.11) ‡	0.094	(0.23)	0.149	(0.25)
Index of HH wealth — exponentiated					-0.044	(0.03)	-0.067	(0.37) ‡
HH wealth <i>relative to</i> others in PSU <sup>3</sup>	0.179	(0.11) ‡	-0.224	(0.12) ‡	0.180	(0.11) ‡	0.276	(0.12) *
<b>Autonomy variables</b>								
Index of women's autonomy (absolute)	-0.009	(0.01)	-0.007	(0.12)	-0.179	(0.06) **	-0.012	(0.07)
<i>X 1996-2000 cohort</i>					0.117	(0.06) ‡	-0.040	(0.07)
<i>X urban residence</i>					0.134	(0.06) *	0.080	(0.07)
<i>X 1996-2000 X urban residence</i>					-0.080	(0.03) **	-0.031	(0.03)
Woman's autonomy <i>relative to</i> others in PSU <sup>3</sup>	-0.004	(0.01)	-0.012	(0.01)	-0.206	(0.06) **	-0.031	(0.07)
<i>X 1996-2000 cohort</i>					0.251	(0.08) **	0.073	(0.09)
<i>X urban residence</i>					0.201	(0.07) **	0.097	(0.08)
<i>X 1996-2000 X urban residence</i>					-0.230	(0.11) *	-0.180	(0.13)
<b>Constant</b>	-0.009	(0.45)	-1.504	(0.39) ***	0.949	(0.71)	-1.344	(0.75) ‡
<b>Log pseudolikelihood</b>								
	-3,847.05				-3833.09			

**Notes:** <sup>1</sup> Estimated coefficients (standard errors) from multinomial logistic regression with reference marital category defined as women with unrelated husbands. Coefficients are expressed as logits (ie. as the  $\beta$  rather than the risk ratios  $e^{\beta}$ ), standard errors control for clustering within primary sampling unit (PSU) (n=823), and significance levels are set at: ‡ p<.10, \* p<.05, \*\* p<.01 & \*\*\* p<.001; <sup>2</sup> Includes all large and small urban areas in comparison to rural areas; <sup>3</sup> Relative measures are net of the respondent's own contribution to that average, and are coded such that where X>0, the household is wealthier or more autonomous than average.

**Table 3.** Sum of predicted logits of relationship between marriage to a first cousin (relative to marriage to an unrelated husband) and absolute and relative measures of autonomy, by urban/rural residence and year of survey.

	Type of residence		
	Year	<i>Rural</i>	<i>Urban</i>
1. Index of women's autonomy	1992	-0.179	-0.045
	2000	-0.062	-0.125
2. Woman's autonomy <i>relative to others in PSU</i>	1992	-0.206	-0.005
	2000	0.045	-0.235

**Notes:** These estimates derive from from Model 2 in Table 2. The sums only include statistically significant coefficients.

**Table 4.** Characteristics of first cousin wives married to *patrilateral* kin, in relation to first cousin wives married to *matrilateral* kin (reference category), among women in first marriage and married in the 5 years preceeding the 2000 EDHS (N=560).

	Model 1		Model 2	
<b>Background characteristics</b>				
Current age	-0.023	(0.052)		
Educational level	-0.098	(0.101)		
Childhood residence in urban area <sup>2</sup>	-0.044	(0.266)		
Current urban residence	-0.264	(0.285)		
Worked before marriage	-0.250	(0.304)		
Age at marriage	0.004	(0.060)		
Spousal age difference	-0.069	(0.022)**	-0.077	(0.020)***
<b>Local normative indicators<sup>2</sup></b>				
% of women living in birth village	-0.175	(0.484)		
% of Governorate women married to 1 <sup>st</sup> cousins	2.376	(1.69)		
<b>Wealth variables</b>				
Index of household (HH) wealth (absolute)	0.264	(0.221)		
HH wealth <i>relative to</i> others in PSU <sup>3</sup>	-0.509	(0.247)*	-0.301	(0.127)*
<b>Autonomy variables</b>				
Index of women's autonomy (absolute)	-0.096	(0.054)‡	-0.149	(0.048)**
Woman's autonomy <i>relative to</i> others in PSU <sup>3</sup>	0.094	(0.056)‡	0.140	(0.052)**
<b>Constant</b>				
	0.342	(1.10)	1.27	(0.466)**
<hr/>				
Log likelihood	-367.1		-370.4	

**Notes:** <sup>1</sup> Estimated coefficients (standard errors) from logit model with reference marital category defined as women married to first cousins on the mother's side. Coefficients are expressed as logits (ie. as the  $\beta$  rather than the risk ratios  $e^{\beta}$ ), standard errors control for clustering within primary sampling unit (PSU), and significance levels are set at: <sup>‡</sup> p<.10, \* p<.05, \*\* p<.01 & \*\*\* p<.001; <sup>2</sup> Includes all large and small urban areas in comparison to rural areas; <sup>3</sup> Proportionate measures are net of the respondent's own contribution to that average. Where measure >0, the HH is wealthier or more autonomous than average; <sup>4</sup> Cluster is defined as PSU (n=297).



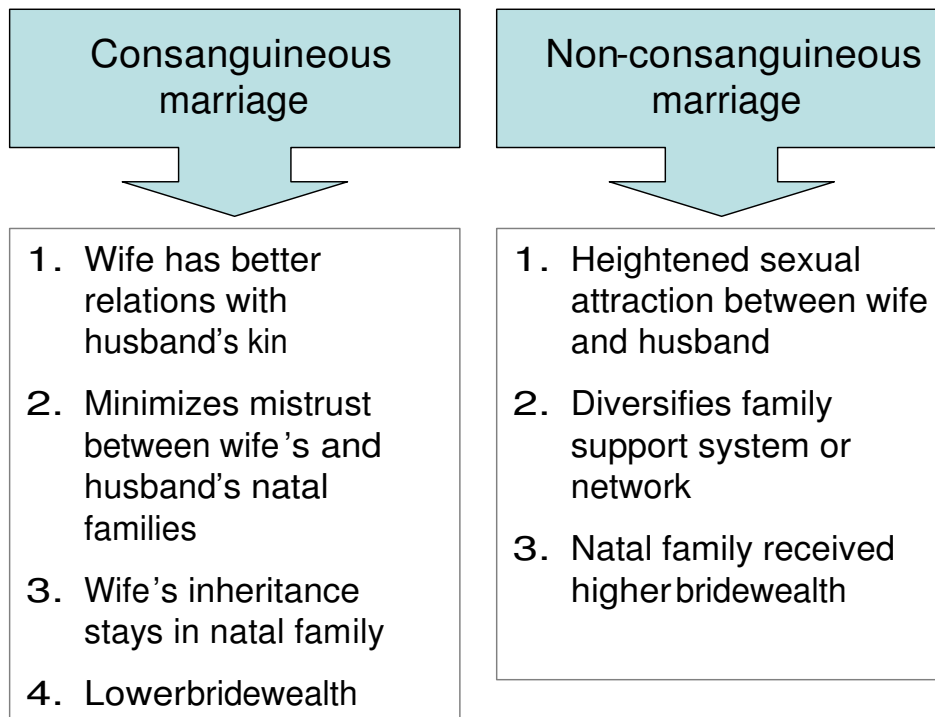


Figure 1. Implications of marital decision for women's relations with her husband, with her affinal kin, relations between her natal and affinal kin, and for her natal family's economic situation.

## **Appendix 1. Arguments about the health-related, political, and economic implications of consanguinity for Arab societies**

The effects of consanguineous marriage on physical ill-health have been the primary focus of the medical and public health community, particularly within the Arab world. Arguments build on the recognition that “inbreeding,” in particular where it is repeated across generations, has undesirable implications for child mortality and morbidity in general (see Jaber et al [1992] and Bittles [2001] for a review). Moreover, as childhood mortality from communicable diseases falls—as it has over the last decades throughout Arab and most other Muslim-majority societies—those effects are increasingly observable (Bittles 1994). In response to this recognition, a series of interventions have been proposed that aim to increase awareness of genetic diseases (e.g., by designing relevant school curricula), and to provide a basket of appropriate community-based genetics services (see Alwan and Modell 1997). The overall aim of these interventions is to reduce the types of consanguinity most likely to result in undesirable health outcomes.

The effects of consanguineous marriage on political ill-health have been the primary focus of political observers. Specifically, a number of commentators have voiced concern over the implications of high levels of consanguinity for Arab societies’ political and economic development. The gist of these comments is that the demands of what Tillion (1983) called the “republic of cousins” are difficult to reconcile with the development of a true national identity in which the good of the state, or of some sort of economic enterprise, outweighs that of one’s family, clan ( *hamoula*), and tribe (Huntington 1996: 174-75; Sailer 2003; Tierney 2003). Some scholars have also added an important gender component to this critique (Tillion 1983; Charrad 1990). In either case, high levels of consanguinity have emerged as a primary reason for pessimism about the prospects for meaningful political and economic reform in the direction of liberal democracy and neo-liberal economies.