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MODERNIZATION OR CULTURAL MAINTENANCE: THE PRACTICE OF CONSANGUINEOUS MARRIAGE IN IRAN

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Summary. Consanguineous marriage has been the culturally preferred form of marriage in Iran. This paper examines the extent to which education, urbanization and changes in modes of economic production have affected the incidence of consanguineous marriage and attitudes towards consanguineous marriages. The 2002 Iran Fertility Transition Survey conducted in the four provinces of Gilan, Sistan and Baluchistan, Yazd and West Azarbaijan provides information on the degree of relationship of marriage partners from around 6550 ever-married women aged 15–49. Attitudinal data were also obtained. Overall, the level of marriage to biological relatives ranged from 23% in Gilan to 78% in Sistan and Baluchistan. The paper finds that the practice of marriage to biological relatives has remained surprisingly resilient in the face of modernizing influences and that ethnicity, province and area of residence remain important determinants. On the other hand, attitudes have shifted towards marriage with a non-relative. Anthropological research would illuminate the processes of consanguineous marriage in Iran.

Introduction

Consanguineous marriage refers to unions between individuals who share at least one common ancestor but the term is conventionally utilized to describe marriages between persons related as second cousins or closer. The most commonly found form of consanguineous union is between first cousins (Bittles, 1994, p. 562; Bittles, 2001a, p. 2). Due to religious objection, consanguinity was relatively uncommon in the past in North America and Western Europe and declined even more in its significance in the past century (Lebel, 1983). On the other hand, consanguineous marriage is still prevalent in many other world regions, particularly in the Muslim countries of North Africa, Central and West Asia, and in most parts of South Asia. In these regions, marriage to biological relatives has accounted for 20% to over 50% of all

marriages in recent generations (Bittles, 1994, p. 563). There is substantial variation in the incidence of marriage to biological relatives across and within countries, as well as by religion/religious affiliation and region of residence, ranging from around 12% in India (Hussain & Bittles, 2004, p. 3), 30% among Muslims in Lebanon (Inhorn *et al.,* forthcoming), 36% among Muslims in an Indian rural community (Nath *et al.,* 2004), 40% in Karachi (Qidwal *et al.,* 2003), 40 to 44% in Yemen (Jurdi & Saxena, 2003; Gunaid *et al.,* 2004) and around 63% for Pakistan (Hussain & Bittles, 2004, p. 3).

Historical sources indicate that marriage between close relatives is a traditional practice in Iran (Ketabi, 2000). However, studies of the incidence of consanguineous marriage are limited. Using data from the 1976–1977 Iran Fertility Survey, Givens & Hirschman (1994) examined the trend and social correlates of consanguineous marriage in Iran. They found that around 40% of respondents were married to a relative, with about 24% to a near relative and 15% to a distant relative. Saadat *et al.* (2004) conducted a national survey to investigate the prevalence and patterns of consanguinity in Iran, focusing on twelve ethnic/religious populations. The mean proportion of consanguineous marriages in the country was around 39%, ranging from 16% in the northern provinces to 47% in the eastern provinces. Consanguineous marriages in the provinces of Sistan/Baluchistan and Gilan were 58·2% and 10·2% of all marriages, respectively. As far as ethnicity and religious affiliation are concerned, Saadat *et al.* (2004, Table 2) found that Baluchis (59·9%) had the highest level while Azaris (38·1%) and Shiite Persians (35·6%) had the lowest level of consanguineous marriages. Sunni Muslims had higher levels of consanguineous marriages than their Shiite counterparts among both Persians and Kurds.

Using the 2001 Household Socio-Economic Characteristics Survey, Abbasi-Shavazi & Torabi (2007a) found that around 41% of women were married to their biological relatives: 21·1% to close relatives and 20·0% to distant relatives. A significant relationship was found between ethnicity and marriage to biological relatives. Using language spoken at home as a proxy for ethnicity, Abbasi-Shavazi & Sadeghi (2005, pp. 35–38) found that Baluchi women had the highest rate of consanguineous marriage (80·5%) followed by Arabs (68·1%), Lor (57·0%), Kurds (48·3%), Fars (39·9%), Mazandarani (33·2%) and Gilaki (22·7%). These results confirmed the findings of an earlier study by Farhud *et al.* (1991).

Given the substantial socioeconomic and political changes over the last several decades in Iran, the stability of consanguinity across periods requires investigation, as do the reasons behind varying levels of consanguineous marriage across the country. In what follows, various theoretical frameworks explaining consanguinity will be discussed.

Conceptual framework

William Goode (1963) in his classic book *World Revolution and Family Patterns* predicted that the incidence of consanguineous marriage would decrease as modernization progresses and an increasing number of individuals begin to freely choose their mates from a broader pool of potential marriage partners. He also suggested that as the education levels of women increased and as they became more involved in the

labour force, they would demand more freedom in the process of choosing a marriage partner (Goode, 1963, pp. 218–219). Following the same line of argument, Hurd (1973, pp. 83–85) argued that urbanization epitomizes a new way of life, with two concomitant processes of social change: (1) a continued separation of economic production from the domestic setting and (2) a growing economic autonomy of women. Modern communications and mass media promote change in culture by demonstrating alternative ways of living. All these factors could lead to a disruption of traditional family patterns.

While scholars have challenged the universal application of Goode's theory (Morgan & Hirosima, 1983; McDonald, 1993, 1994), empirical support has been found for several of its aspects. For instance, there has been a trend towards a reduction of consanguineous marriages in many parts of the developing world (Tfaily, 2005). Several studies have found that educated women have higher odds of marrying non-relatives than women with less education (Givens & Hirschman, 1994; Hussain & Bittles, 2000; Jurdi & Saxena, 2003; Casterline & El-Zeini, 2003). The prevalence of consanguineous marriages is generally lower in urban areas (Givens & Hirschman, 1994).

However, it has been noted that past predictions of a rapid decline in the overall prevalence of consanguineous marriages have proven to be largely incorrect (Bittles, 2001a, p. 3). Although some countries have experienced a declining trend in the incidence of marriage to biological relatives, in other countries, the incidence of marriage to biological relatives has either remained constant or has increased in recent generations. For example, Givens & Hirschman (1994) found an increase in the level of consanguineous marriage in Iran between the 1950s and 1970s (Bittles 2001a, p. 3; Jurdi & Saxena, 2003; Tfaily, 2005). Also contrary to expectations based on Goode's theory, a higher or equal level of consanguineous marriage has been found in urban areas of Beirut and Yemen as compared with rural areas (Khlat & Halabi, 1986, p. 489; Gunaid *et al.*, 2004).

Several scholars have emphasized the importance of cultural factors in studying family change. Anthropologists have argued that any custom, to be understood properly, must be linked to other social and cultural phenomena: property, wealth, power, kinship, belief, ritual, values (Khuri, 1970, p. 597). Thornton & Fricke (1987) examined the influence of social and economic change on family structure and relationships, and how economic and social transformations such as industrialization, urbanization, demographic change, the expansion of education and the long-term growth of income influence the family. They concluded that:

> While the similarities of family change in diverse cultural settings are striking, our review suggests that there is no single developmental sequence or pattern that all societies will experience. Specific aspects of change have varied across settings because of significant pre-existing differences in family structure, residential patterns of children, age at marriage, autonomy of children, and the role of marriage within ramifying systems of kinship and alliance. This essay makes the crucial point that changes within the family cannot be understood without considering the family's role in specific cultural and social contexts. Any consideration of family change must begin with a look at cultural definitions of family boundaries, the roles of family members and the position of the family within the wider society. In addition to these structural differences in family and social organization, the processes of social and economic transformation themselves vary, producing differences in the trajectory of family change. (Thornton & Fricke, 1987, p. 770)

In relation to family change, McDonald (1994) argued that an idealized family morality is a fundamental component of the culture of all societies. Because family organization is at the core of all societies, it is a component of the society's definition of itself, its identity. Consequently, change in family organization can be expected to be slow and measured. Change occurs so long as it does not pose a major threat to cultural identity.

Several studies have found support for these cultural hypotheses. Qidwal *et al.* (2003) reported that the main reasons supporting consanguineous marriages in Karachi were the continuance of arranged marriage, the protection of health provided by marriage within the family, and the maintenance of traditional values. Hussain (1999) argued that the major reasons for a preference for consanguineous marriages in Pakistan are socio-cultural rather than being for any perceived economic benefit, either in the form of consolidation of family property or smaller and less expensive dowries. Gunaid *et al.* (2004) also argued that 'deeply rooted social and cultural beliefs have had a definite influence on the current status of consanguineous marriages in Yemen'.

The main objective of this paper is to examine the extent to which structural and/or modernization factors as opposed to cultural influences have modified the incidence of consanguineous marriage (behaviour and attitudes) in Iran in recent years. The following section provides information on the data and method utilized in the paper, and then the levels and trends of consanguineous marriage by several demographic and social characteristics across four provinces of Iran are shown. Finally, multivariate analysis explaining both behaviour and attitudes of women towards consanguinity are presented.

Data and Methods

The main data source for this paper is the 2002 Iran Fertility Transition Survey (IFTS). The aim of the IFTS was to assess recent trends and differences in fertility and associated social changes in order to gain an understanding of the phenomenal fertility decline in Iran. The IFTS re-interviewed 50% of women in four selected provinces who had been interviewed in the 2000 Iran Demographic and Health Survey (IDHS). The IFTS sample includes approximately 1000 households in both urban and rural areas in each of the selected provinces. The IFTS was conducted during April and May 2002, and a total of 5190 questionnaires were completed among married women aged 15–49 years.

The IFTS covered the four provinces of Sistan and Baluchistan, West Azarbaijan, Gilan and Yazd. Several reasons justified the selection of these provinces. First, these provinces displayed very different fertility levels during the period 1972–1996: Sistan and Baluchistan and West Azarbaijan have had higher fertility as compared with the total population, while Gilan and Yazd displayed considerably lower fertility than the national level (Abbasi-Shavazi, 2000; Abbasi-Shavazi & McDonald, 2005). Second, the level of modernization and socioeconomic characteristics such as literacy, employment and access to electricity and safe water vary markedly across these provinces. Sistan and Baluchistan province (located in the south-eastern part of Iran and sharing borders with Afghanistan and Pakistan) stands out with the lowest level

Fig. 1. Map of Iran showing ethno-religious distribution. Source: University of Texas Libraries, Perry-Castañeda Library, Map Collection: http://www.lib.utexas.edu/maps/iran.html.

of socioeconomic development, while Gilan and Yazd approach the highest levels of socioeconomic development in the country (Abbasi-Shavazi *et al.*, 2003, pp. 3–4).

Iran is a multi-ethnic society. Azari speakers live in the north-west, Kurds and Lors reside in the west, Arabs have settled in the south-west and partly in the south, Baluch are located in the south-eastern province, Talyshi, Gilaki, Mazandarani and Turkmens live in the north, and the Persians are mainly concentrated in the centre of Iran (Fig. 1). Furthermore, Islam is the main religion in Iran (around 99%). Shiites constitute a majority in Iran (90%) while the Sunni are the minority (approximately 9%) and live mainly in the provinces located on the borders of Iran. Overall, there is an overlap between the Sunni sect of Islam and ethnicity in Iran. Sunnis live in the bordering provinces of Iran where different ethnic groups are located. This survey included the provinces where Azari, Kurdish, Gilaki and Baluch speaking communities are located. Among the ethnic groups under study in the IFTS, Baluch and Kurds mainly belong to the Sunni sect of Islam. Thus, the data allow the examination of the relationship between ethnicity/sect of religion and consanguinity.

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The dependent variable in this study is 'consanguinity' and is derived from a question that asked women about their relationship with their husband (first marriage). The response categories to this question were: mother's brother's son, mother's sister's son, father's brother's son, father's sister's son, other relatives and non-relatives. The first four categories are defined as 'first cousin marriages'. The fifth category includes second cousins and other relatives. Thus, no distinction can be made between second cousins and distant relatives.

To explore the level and correlates of consanguinity, in this analysis, the dependent variable will be defined as 'relative' versus 'non-relative', and also as 'first cousin marriages' versus 'other marriages'. The decision to focus the analysis specifically on first cousin unions was warranted since marriage to a first cousin may have quite different social and economic connotations than marriage to a second or other form of cousin. The potential genetic/health consequences certainly are quite different since on average the progeny of a first cousin union would predictably be four times more inbred than those born to second cousins, and thus more prone to recessively inherited genetic disorders (Schull, 1958; Jaber *et al.*, 1992; Bittles & Neel, 1994; Grant & Bittles, 1997; Stoltenberg *et al.*, 1997; Bittles, 2001b).

In addition to behaviour, attitudes of women towards consanguinity as an indication of potential social change are examined. In the IFTS, women were asked 'In general, would it be better if a son/or daughter marry a relative or not?' The response categories to this question were 'relative', 'non relative' 'no difference'. Besides, social and demographic characteristics of women including literacy/education, year of marriage, province and place of residence, mother tongue (as a proxy for ethnicity) and sect of Islam were obtained in the individual questionnaire.

The variable 'marriage cohort' enables the time trend in consanguineous marriage in the four provinces to be examined. To measure the trend of consanguineous marriage, respondents were categorized into three marriage cohorts according to their year of first marriage. The marriage cohorts are defined to represent three periods of social change in Iran as follows:

Before the 1979 Islamic Revolution: During this period, the first national family planning programme was implemented by the Shah, the legal minimum age at marriage for boys and girls was increased, and various programmes were implemented to improve the status of women in the society.

The years 1979 to 1989: This was the first decade following the Islamic revolution when the country experienced phenomenal social and political change. It was also the period of the Iran–Iraq War. The family planning programme was suspended, the war situation changed peoples' lives, a rationing system was introduced to meet people's basic needs, the legal minimum age at marriage was lowered, and a pronatalist policy encouraged early marriage and high fertility. On the other hand, the egalitarian nature of the revolution led to considerable improvements in education and health systems, and there were major improvements in facilities in rural areas.

Post 1990: The period from 1990 onwards was more pragmatic in the approach to social and economic issues. The government implemented many infrastructure projects in order to improve the economic situation of the country. The family planning programme was revived during this period and the Islamic government supported this and provided contraceptives to people throughout the country

(Hoodfar & Assadpour, 2000; Abbasi-Shavazi *et al.*, 2002; Mehryar, 2005). The election of the Khatami government in 1997 heralded a democratization period when various new political groups formed and the society experienced shifts on political issues. Freedom of speech and expression of different values and attitudes became more prevalent and restrictions on peoples' personal and individual behaviour became relatively more limited.

Marriage cohort (time), place of residence (urban or rural) and education can be considered to be associated with modernization. On the other hand, religion and ethnicity can be considered to be measures that are indicative of culture. Beyond culture, ethnicity can be considered to have economic and political domains but the survey did not gather information of this type. Thus, for the purposes of this study, ethnicity was utilized primarily as an indication of culture. The multivariate analysis at the end of the paper enables the relative importance of modernization influences compared with cultural influences to be examined. The study's hypothesis, consistent with the literature, is that ethnicity, the strongest cultural variable, will have the strongest influence.

Results

Levels and trends of consanguineous marriage

Figure 2 presents the trend in consanguinity by woman's year of first marriage for first cousin marriages as well as marriages to other relatives. Given the considerable increases in education levels across cohorts, the figure shows the rather surprising result that, for all women in the four provinces, there was little or no change across cohorts in the incidence of marriage with a biological relative. In spite of yearly fluctuations, the linear trend line for all consanguineous marriages has been relatively flat across the years of the study. There appears to have been an upward shift in consanguinity at the time of the revolution and the level remained on the high side during the early years of the 1980s. Since the 1990s, a slight downward trend is observed, though the change is trivial.

Correlates of consanguinity

Table 1 demonstrates the levels and trends of consanguinity by province, area of residence, education, sect of religion and ethnicity. Around 38% of marriages for the first marriage cohort were consanguineous; the percentage increased to around 43% for the second cohort (coinciding with the Islamic revolution and the early years of the 1980s) and then declined to 39% for the third cohort. Given the changes in education level and social changes across these years, this trend suggests that cultural maintenance may have played a significant role in the persistence of traditional behaviour despite the forces of modernization.

Consanguineous marriage stood at more than 77% for all women in Sistan and Baluchistan. Despite its high level of development, marriage with a relative remains very prominent in Yazd, accounting for over 46% of all marriages. Around 33% and 24% respectively of marriages in West Azarbaijan and Gilan were consanguineous. The trend of marriage to biological relatives in the four provinces is mixed. Only

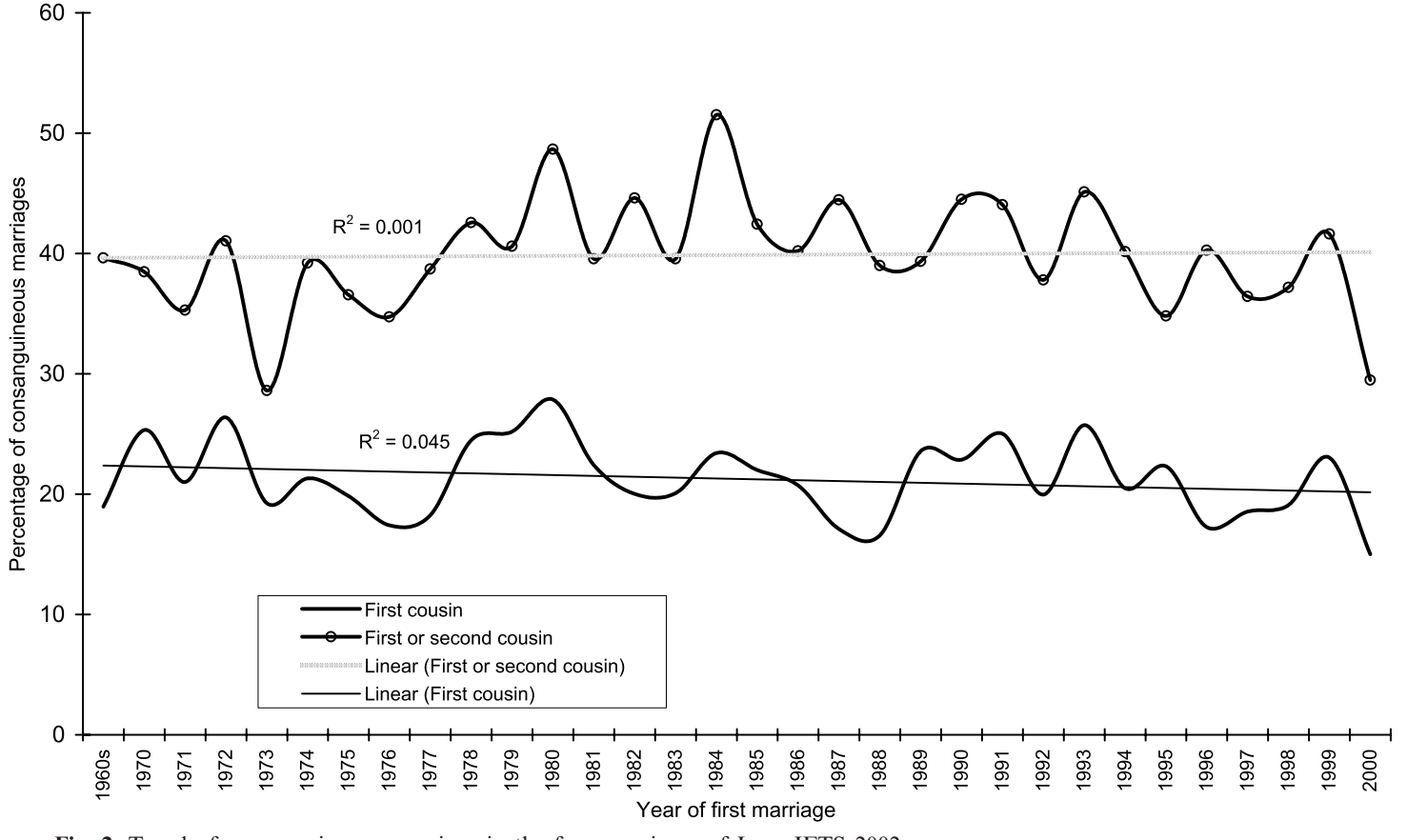

Fig. 2. Trend of consanguineous marriage in the four provinces of Iran, IFTS 2002.

Table 1. Percentage of consanguinity (married to any relative) among ever-married women aged 15–49 by selected characteristics and marriage cohort, IFTS 2002

	Marriage cohort							
	<1979 (before Islamic revolution)		1979–89 (first years of revolution and war)		1990+ (construction and policy reforms)		Total	
Characteristics	%	*n*	%	*n*	%	*n*	%	*n*
Province								
Gilan	25·4	316	24·9	453	22·3	508	24·0	1277
West Azarbaijan	27·3	371	38·1	495	31·1	502	32·6	1368
Sistan and Baluchistan	78·1	297	74·8	480	79·5	519	77·4	1296
Yazd	45·0	350	50·9	463	42·1	436	46·3	1249
Area of residence								
Rural	42·0	675	46·8	876	47·4	1068	45·8	2619
Urban	34·2	659	39·3	1015	30·7	897	35·0	2571
Education								
Illiterate	39·5	855	48·0	736	61·0	419	46·9	2010
Primary	37·4	360	45·4	648	40·0	646	41·5	1654
Secondary	41·8	52	35·6	302	32·6	480	34·3	834
Diploma or higher	17·5	67	28·0	205	26·1	420	25·8	692
Sect of religion								
Sunni	53·0	372	59·6	571	59·0	644	57·8	1587
Shiite	31·8	962	35·4	1320	30·1	1321	32·5	3603
Ethnicity								
Fars	49·3	483	54·0	662	43·0	633	48·7	1778
Azari	26·2	235	37·1	345	29·7	323	31·6	903
Gilak	26·1	269	21·6	371	21·7	411	22·8	1051
Kurd	27·6	165	39·6	206	32·9	221	33·8	592
Baluch	85·8	182	81·6	307	86·8	377	84·8	866
Total	37·9	1334	42·6	1891	39·3	1965	40·1	5190

Gilan has experienced a consistent decline in the level of consanguinity; West Azarbaijan province showed an increase during the first two periods, and then a declining trend during the last two periods, while in Sistan and Baluchistan there was a slight decline (from 78% to 75%) during the first period and then an increase to 79% during the last period. Nonetheless, the level of consanguinity has not changed in the provinces very much, and the provincial differences have been constant across cohorts.

The incidence of consanguinity is lower for women living in urban areas (around 35%) relative to those in rural areas (46%). Consanguinity has increased in rural areas across marriage cohorts but women in urban areas displayed an initial increase during the first period followed by a decline during the second period. The rise in rural areas

is possibly affected by selective out-migration of women more likely to have not married a relative.

There is a strong inverse relationship between women's education and consanguinity across marriage cohorts. Illiterate women were more likely than women with any other level of education to marry their relatives. As a whole, around 47% of women with no schooling had married their relatives (first or second cousins). The figures for women with primary, secondary and diploma and higher education were around 41%, 34% and 26%, respectively. There has been a general increase in consanguinity over time for women with no education and for those with primary education, except for the last period. This may be again the result of selection as the low education categories became much less common across time. For women with a secondary level of education, there has been a decrease in consanguinity. However, the figure for women with diploma and higher education increased from 17% to 28% and then declined to 26% by the 1990s. These results are consistent with an interpretation that, as education levels increase, each education category, particularly at the bottom and the top of the distribution, becomes increasingly more selective (compared with previous cohorts at the same education level) of women who behave in a more conservative way. For example, the very small group of highly educated women prior to 1980 (5% of all women) were likely to be less traditional in behaviour than the larger group of highly educated women after 1990 (21% of all women). If this interpretation is correct, education does not have a consistent meaning across time.

The IFTS provides data on sect of religion and ethnicity. Sunni women (around 58%) were more likely to marry their relative than Shiite women (33%). There has been an increasing trend in consanguinity for Sunni women but the level of marriage to biological relatives increased for Shiite women during the first period and then declined during the last two periods. There was a variation in the level of consanguinity across cohorts among ethnic groups. Consanguinity was exceptionally high among Baluchi women, 85% of whom had married a relative. The incidence of consanguineous marriage was lower than 50% among other ethnic groups. The level of consanguinity was around 49% among Farsi-speaking women followed by Kurds (34%) and Azaris (32%). Gilaki women had the lowest percentage of marriage to biological relatives (23%). These ethnic differentials in consanguinity are consistent with the findings of other studies (Saadat *et al.,* 2004, Table 2; Abbasi-Shavazi & Sadeghi, 2005, pp. 35–38).

The analysis shows that around 53% of all consanguineous marriages were first cousin marriages, or 21% of all marriages. To explore the relationship between first cousin marriage and other socio-cultural variables, the same analysis was repeated for the first cousin marriages versus other marriages (results not shown here). The patterns were more or less similar to the results described in Table 1.

Attitudes towards consanguinity

To examine the potential for social change and attitudes of women, the respondents were asked 'In your view, would it be better if a girl marry a relative or non-relative?' This question was then repeated for boys. The response categories to

Table 2. Percentages of ever-married women aged 15–49 agreeing with consanguineous marriage for both girls and boys by characteristics and marriage cohort, IFTS 2002

	Marriage cohort							
	<1979 (before Islamic revolution)		1979–89 (first years of revolution and war)		1990+ (construction and policy reforms)		Total	
Characteristics	%	*n*	%	*n*	%	*n*	%	*n*
Province								
Gilan	10·8	316	6·6	453	8·9	508	8·5	1277
West Azarbaijan	23·7	371	22·0	495	19·5	502	21·5	1368
Sistan and Baluchistan	61·2	297	64·4	480	63·7	519	63·4	1296
Yazd	27·4	350	22·0	463	16·9	436	21·7	1249
Area of residence								
Rural	31·5	675	31·0	876	29·9	1068	30·7	2619
Urban	22·0	659	20·9	1015	19·3	897	20·6	2571
Education								
Illiterate	31·7	855	38·6	736	48·6	419	37·6	2010
Primary	19·4	360	20·6	648	26·3	646	22·7	1654
Secondary	10·3	52	12·5	302	15·0	480	13·8	834
Diploma or higher	7·6	67	12·5	205	11·6	420	11·5	692
Sect of religion								
Sunni	48·9	372	49·7	571	47·4	644	48·6	1587
Shiite	17·4	962	15·0	1320	14·1	1321	15·3	3603
Ethnicity								
Fars	30·3	483	28·0	662	20·4	633	25·8	1778
Azari	14·4	235	16·1	345	16·9	323	15·9	903
Gilak	11·6	269	4·6	371	7·5	411	7·5	1051
Kurd	34·7	165	29·7	206	24·6	221	29·2	592
Baluch	71·9	182	77·7	307	73·5	377	74·6	866
Current marriage								
Married a non-relative	22·3	1012	20·5	1407	18·3	1484	20·1	3903
Married a relative	42·1	322	42·6	484	49·2	481	44·9	1287
Total	26·5	1334	25·3	1891	24·7	1965	25·4	5190

this question were 'relative', 'non-relative' and 'no difference'. The analysis showed that women's attitudes towards consanguineous marriage were the same for both girls and boys. Thus, the results presented in Table 2 show percentages of ever-married women aged 15–49 agreeing with consanguinity (marry a relative) for both girls and boys by demographic characteristics and marriage cohort.

Overall, around 25% of women agreed that it would be better for boys and girls to marry a relative, much lower than the percentage of respondents who themselves had married a relative. The differences across marriage cohorts are very small (26·5%

to 24·7%) indicating that, by 2002, women of different marriage cohorts had adopted more-or-less the same attitudes to marriage to biological relatives. At the provincial level, the only major exception to this finding is for the province of Yazd where the most recent marriage cohort was much less in agreement with marriage to biological relatives than the pre-1979 marriage cohort. A strong preference for marriage to biological relatives (63%) remains prevalent only in Sistan and Baluchistan.

For some characteristics, the patterns of response on attitudes to marriage to relatives were similar to those observed in Table 1 for behaviour. Women in rural areas (30%) were more in favour of marriage to biological relatives for boys and girls than those in urban areas (20%). Sunni women were more than three times more likely than Shiite women to agree with marriage to biological relatives and the ethnic variation in attitudes toward marriage to biological relatives was relatively similar to that for behaviour. Around 75% of Baluchi-speaking women were in favour of consanguinity, while only 7·5% of Gilaki women reported that it would be better if girls/boys marry a relative. Not unexpectedly, those who had themselves married a relative were much more likely to agree with marriage to biological relatives for boys and girls (45%) than those who had not married a relative (20%).

The pattern of attitudes by education across marriage cohorts is very interesting. It shows that the percentage that favoured marriage with a relative increased for all education categories from the first cohort to the third cohort. This means, effectively, that within each education level, younger women were more likely than older women to favour marriage with a relative. As argued above, this may mean that education does not have a consistent association with modern thought across time. As more women become educated, each education category becomes relatively less modern in its thought compared with the same education category in earlier periods. The increase in agreement with consanguinity across time within each education category is reconciled with the absence of an increase for all women by recognizing the impact of the compositional shift of the population by education. If the pre-1979 cohort had had the same educational composition as the 1990+ cohort, agreement with consanguinity for the pre-1979 group would have been 39·5% rather than the 26·5% actually observed. For the 1979–89 cohort, agreement would have been 31·6% if their educational composition had been the same as the 1990+ cohort compared with the actual level of 25·3%. This is all suggestive that, as women in a cohort shift upwards in education, some may retain aspects of their cultural beliefs rather than adopting the views of their new educational category as held by the previous cohort.

While the 'no difference' category makes explanation tentative, it is interesting that attitudes to marriage with a relative seem to be running ahead of behaviour. Thus, there is some evidence that behaviour may be modified somewhat in this regard in the future reflecting some shift away from traditional approaches to marriage.

Multivariate analysis: behaviour

One set of multivariate results provides clues of possible causal relationships. Odds ratios in Table 3 are estimated using logistic regression. Consanguinity (married to a relative vs non-relative) is the dependent variable. Independent variables utilized in

Table 3. The odds ratios from logistic regression analysis of consanguinity (married any relative), IFTS 2002

Variable name	Model 1		Model 2		Model 3	
	Odds ratio	Sig.	Odds ratio	Sig.	Odds ratio	Sig.
Marriage cohort: <1978 (ref.)						
1978–83	1·238	*	1·259	*	1·207	*
1984–89	1·295	**	1·343	*	1·278	*
1990–95	1·099	ns	1·172	ns	1·069	ns
1996+	0·993	ns	1·133	ns	0·977	ns
Education: Illiterate (ref.)						
Primary			1·059	ns	1·163	ns
Secondary			0·938	ns	1·110	ns
Diploma or higher			0·594	**	0·721	**
Sect of Islam: Sunni (ref.)						
Shiite					0·714	*
Ethnicity: Fars (ref.)						
Azari					0·425	**
Gilak					0·267	**
Kurd					0·344	**
Baluch					3·417	**
Area: Rural (ref.)						
Urban	0·593	**	0·649	**	0·686	**
Province: Gilan (ref.)						
Yazd	3·130	**	3·036	**		
West Azarbaijan	1·556	**	1·471	**		
Sistan and Baluchistan	10·750	**	10·210	**		
Constant	0·357	**	0·358	**	1·584	**
Cases included in model	5190		5190		5190	

*Significant at <0·05 level;**significant at <0·01 level; ns, not significant.

this analysis are marriage cohorts (to observe the effect of time), education and area of residence (to observe the effects of modernization) and sects of Islam and ethnicity (to observe the effects of culture). In this analysis, finer categories of marriage cohort are utilized so that time trends can be observed more closely.

Model 1 shows the impact of time controlling for province and place of residence in 2002. Compared with those married before 1978, marriage with a relative was 1·24 times more likely for those marrying in 1978–83 and 1·30 times more likely for those marrying in the years 1984–89. This suggests that social changes associated with the Islamic revolution may have increased the incidence of consanguineous marriage. For the two most recent periods of marriage, however, there is no significant difference in the incidence of consanguinity compared with marriages before 1978. Overall, there is no evidence in this model of a downward trend in the level of marriage with relatives.

In relation to the two control variables, marriage with a relative was significantly less likely for those living in urban areas than for those living in rural areas. As observed in the bivariate analysis, there were very large differences across provinces with those in Sistan and Baluchistan being 10·7 times more likely to marry a biological relative than those in Gilan. Women in Yazd and West Azarbaijan were three times and around one and half times, respectively, more likely to have married a biological relative than women in Gilan.

Model 2 adds in the effect of education. There was no significant difference in the levels of consanguineous marriage between women who were illiterate and those who had primary and secondary education. Only those with tertiary education were significantly different, being 40% less likely than illiterate women to marry a relative. The addition of education had little impact on the effects of the other variables in the model when compared with Model 1. Thus, the impact of the most important modernization variable – education – seems to be small.

In Model 3, the impacts of the two cultural variables – ethnicity and sect of Islam – are added. Because of the very close association between province and ethnicity, in this model, province has been removed. This model clearly confirms the importance of ethnicity in the levels of consanguineous marriage in Iran. The Baluch are 3·5 times more likely than the majority Fars ethnic group to practise consanguineous marriage. The other three groups – Azaris, Kurds and Gilaki – are all much less likely than the Fars group to have married a relative. Although much less important than ethnicity, sect of Islam has a statistically significant impact once other variables are controlled, with those of the Shiite sect being about 30% less likely than Sunnis to marry a relative. In Model 3, after the addition of the cultural variables, the effect of place of residence remains relatively unchanged but the effect of education weakens. In Models 2 and 3, there is an indication of a decline across time (marriage cohort) when other variables are controlled, but the effect is not statistically significant.

Table 4 repeats the analysis of Table 3 but the dependent variable is now marriage to a first cousin rather than marriage to any relative. In this analysis, time (marriage cohort) has no significant effect from which it would be concluded that the apparent significant increase in marriage to biological relatives in the 1980s (Table 3) was an increase in marriage to more distant relatives than first cousins. The effects of education upon first cousin marriage are somewhat similar to those for marriage to any relative except that the lower rate of consanguinity among the tertiary educated is even lower for first cousin marriages. In addition, for first cousin marriage, in Model 2, secondary education becomes significant at $p<0{\cdot}01$. For first cousin marriage, the urban–rural difference remains very significant in statistical terms but the effect is less than for marriages to all biological relatives. This means that urban consanguinity, controlling for all other factors, is somewhat more likely to consist of first cousin marriages. The effects of sect of religion are the same in Tables 4 and 5, suggesting that this effect relates roughly equally to any marriage to biological relatives. The most important shift between Tables 3 and 4, however, is related to marriage to relatives among the Baluch. The effect of Baluch ethnicity is much smaller for first cousin marriage than it is for marriage to any relative indicating that the Baluch practise marriage with relatives beyond the first cousin to a much higher degree than the reference group, the Fars people. In other words, community

Table 4. The odds ratios from logistic regression analysis of consanguinity (married first cousin), IFTS 2002

Variable name	Model 1		Model 2		Model 3	
	Odds ratio	Sig.	Odds ratio	Sig.	Odds ratio	Sig.
Marriage cohort: <1978 (ref.)						
1978–83	1·140	ns	1·193	*	1·154	ns
1984–89	1·038	ns	1·139	ns	1·095	ns
1990–95	1·077	ns	1·237	ns	1·152	ns
1996+	0·900	ns	1·139	ns	1·026	ns
Education: Illiterate (ref.)						
Primary			0·986	ns	1·063	ns
Secondary			0·706	**	0·797	ns
Diploma or higher			0·460	**	0·528	**
Sect of Islam: Sunni (ref.)						
Shiite					0·702	*
Ethnicity: Fars (ref.)						
Azari					0·451	**
Gilak					0·272	**
Kurd					0·297	**
Baluch					1·613	**
Area: Rural (ref.)						
Urban	0·694	**	0·799	**	0·827	**
Province: Gilan (ref.)						
Yazd	3·298	**	3·131	**		
West Azarbaijan	1·538	**	1·384	**		
Sistan and Baluchistan	6·710	**	5·969	**		
Constant	0·139	**	0·147	**	0·645	**
Cases included in model	5190		5190		5190	

*Significant at <0·05 level; **significant at <0·01 level; ns, not significant.

endogamy is more pronounced among the Baluch. This is not a conclusion that would be drawn from an examination of the bivariate data in Tables 1; it is a finding that emerges only when other important determining variables are also taken into account in the multivariate analysis.

Multivariate analysis: attitudes

In relation to current attitudes to consanguineous marriage, an important group to consider are women who themselves were married to a relative but who, at the time of the survey in 2002, did not agree with consanguineous marriage. This is a strong indication of the potential for social change. Table 5, therefore, examines which women who had married a relative were more likely to now be opposed to marriage with a relative.

Table 5. The odds ratios for opposition to consanguineous marriage for girls and boys (girls/boys would be better marrying a non-relative) from logistic regression analysis of women who themselves married a relative, IFTS 2002

	Girls				Boys			
	Model 1		Model 2		Model 1		Model 2	
Variable	Odds ratio	Sig.	Odds ratio	Sig.	Odds ratio	Sig.	Odds ratio	Sig.
Marriage cohort: <1978 (ref.)								
1978–83	1·231	ns	1·312	ns	1·171	ns	1·240	ns
1984–89	1·320	ns	1·397	*	1·322	ns	1·385	*
1990–95	1·004	ns	1·098	ns	1·073	ns	1·155	ns
1996+	0·835	ns	1·072	ns	0·856	ns	1·082	ns
Education: Illiterate (ref.)								
Primary	1·406	**	1·257	ns	1·435	**	1·316	*
Secondary	2·047	**	1·437	*	2·064	**	1·481	*
Diploma or higher	1·832	**	1·309	ns	1·953	**	1·417	ns
Sect of Islam: Sunni (ref.)								
Shiite			2·010	**			1·754	**
Ethnicity: Fars (ref.)								
Azari			1·819	**			1·870	**
Gilak			2·832	**			2·814	**
Kurd			1·520	ns			1·328	ns
Baluch			0·150	**			0·158	**
Area: Rural (ref.)								
Urban	1·072	ns	0·900	ns	1·078	ns	0·914	ns
Province: Gilan (ref.)								
Yazd	0·569	**			0·599	**		
West Azarbaijan	0·527	**			0·547	**		
Sistan and Baluchistan	0·056	**			0·061	**		
Constant	1·285	ns	0·298	**	1·214	ns	0·326	**
Cases included in model	2355		2355		2355		2355	

*Significant at <0·05 level; **significant at <0·01 level; ns, not significant.

The results are shown separately for marriages of girls and marriages of boys but there is little difference between the two indicating a cultural consistency on the part of respondents as distinct from any gender bias. Here the results in relation to marriage of girls are described.

Model 1 shows the impact of education, time (marriage cohort), place of residence (urban/rural) and province. Neither marriage cohort nor place of residence were significant determinants of opposition to consanguineous marriage among those who themselves had married a relative. On the other hand, the effects of education and province were strong. Here, an apparent significant impact of modernization manifested by education is observed. As would be expected from the modernization

hypothesis, those with higher levels of education were more likely to be opposed to marriage with a relative. Opposition to consanguinity was more evident in Gilan than in other provinces – not an unexpected result given the low levels of consanguinity in that province. In contrast, women in Sistan and Baluchistan, where consanguineous marriage remains the norm, were very unlikely to be opposed to consanguineous marriage. Again, consistent with modernization theory, this suggests that opposition to traditional behaviour becomes stronger as that traditional behaviour becomes less and less evident.

As in previous analyses, Model 2 drops province and includes the cultural variables, ethnicity and sect of Islam. Interestingly, sect of Islam has a large and very significant effect upon opposition to consanguineous marriage among women who themselves had married a relative. Women of the Shiite sect were twice as likely to be opposed as Sunni women after other characteristics are controlled. This probably reflects the more reformist and dynamic nature of the Shiite philosophy compared with the Sunni.

As was the case with the province variable, the effects of ethnicity were associated with the level of consanguineous marriage within each ethnic group. Where consanguinity was the norm, attitudes continued to support it; where consanguinity was less common, women who themselves had married a relative were opposed to consanguinity.

Interestingly, however, once sect and ethnicity are included (Model 2), the effect of education becomes much more muted than when these variables are not included. This suggests that education alone does not have a large effect on attitudes to consanguineous marriage. Rather, it is the association of education with cultural characteristics (sect of Islam and ethnicity) that gives education its impact.

Discussion

Despite the transformation of aspects of the Iranian family (Ladier-Fouladi, 2002; Aghajanian, forthcoming), several dimensions of family organization have remained largely unchanged (Abbasi-Shavazi & Askari-Nadoushan, 2005; Abbasi-Shavazi & McDonald, 2007). The results presented in this paper confirm that consanguineous marriage has been a culturally preferred form of marriage in Iran.

Various patterns of consanguinity have also been observed in this study. Those living in rural areas, illiterate women or those with a lower level of education have been more likely to marry their biological relative. The incidence of consanguineous marriage varied substantially across the four provinces under scrutiny. As far as sect of Islam and ethnicity are concerned, Sunni women were more likely to experience consanguinity. Of the four ethnic groups in this study, Baluch had by far the highest level of relative marriage, followed by Kurd, Azari, Fars and Gilaki. The trends of consanguinity among ethnic groups were not similar as some ethnic groups displayed an increasing trend during the first two periods and then a declining trend during the last two periods. However, the broad picture is that each ethnic group had its specific level of consanguineous marriage that was maintained across the 30 years of marriages examined in this paper.

This analysis revealed some cross-sectional evidence in support for Goode's theory (1963) on the negative relationship between modernization and consanguinity. Women with a high level of education, those living in urban areas and those who lived in Gilan, a highly developed province, had lower levels of consanguinity. As discussed above, similar results have been found in other countries.

If modernization theory holds, then it would be expected that provinces with a higher level of development would have a lower level of consanguinity. The results show that Yazd province, one of the two more-developed provinces (besides Gilan), had a higher level of consanguinity than West Azarbaijan. Despite its high level of development, Yazd is known as *darol ebadah*, literally meaning 'the home of prayer'. Consistent with this, women interviewed in the Iran Fertility Transition Survey in Yazd (Abbasi-Shavazi *et al.*, 2003) expressed conservative attitudes towards family and childbearing. This result supports the argument by Thornton & Fricke (1987) on the importance of 'specific cultural and social contexts' in the study of family structure and dynamics.

This multivariate analysis has confirmed the dominant influence of cultural variables, especially ethnicity. Across time, ethnicity has remained by far the most important determinant of consanguineous marriage. In contrast, the modernization variable, education, had little significant effect upon behaviour, the effect being only for those with tertiary education. Pedersen (2002) found that the number of first cousin unions was not declining with improved educational levels among Palestinians in the West Bank and Gaza, Jordan, Lebanon and Syria. Khlat & Halabi (1986, p. 494) found that the proportion of consanguineous couples was as high among modern-minded couples as among the traditional sub-population in Beirut. They concluded that the trend to modernization occurring in Middle Eastern societies will not necessarily cause a weakening of consanguineous marriages, and raises the question whether endogamy in this context is a structural trait that is resistant to change. Furthermore, the majority of the inhabitants of most cities in the Middle East today are rural-born and maintain their ties; migration to the city does not necessarily imply an immediate change in values or lifestyle. Earlier, Patai (1971) had argued that the endogamous family system in the Middle East was preserved because it protected the region's political and religious institutions through maintaining social hierarchies.

The analysis of attitudes, an indicator of future change, also confirmed the dominance of cultural factors. Being of the Shiite sect was a strong predictor of opposition to consanguineous marriage among women who themselves had married a relative. Furthermore, there was evidence that growing opposition to consanguineous marriage was associated with ethnicity, with opposition being higher among women who themselves had married a relative in ethnic groups where consanguineous marriage was less common. Consistent with the theory of idealized morality, the effects of education (modernization) were filtered through the cultural variables, sect of Islam and ethnicity.

Women in Sistan and Baluchistan province, and particularly Baluch women, have displayed the highest level of consanguinity in Iran. Several reasons can explain the high prevalence of biological relative marriage in this province. First, as noted by Givens & Hirschman (1994), 'in rural areas of Iran it is difficult to assume a common understanding of the degree of relatedness implied by near or distant relative'. This

may be true in Sistan and Baluchistan province where kinship terms, consanguinity and ethnicity are mixed. Community endogamy is another reason for the high level of consanguinity in Sistan and Baluchistan. Bittles (2005) argued that 'marriage within clan, tribal, caste or *biraderi* boundaries largely remains the rule in more traditional societies, and endogamous marriage also is strongly favoured in many migrant communities now resident in Western countries'. Intermarriage between ethnic groups is very low in Iran (Abbasi-Shavazi & Sadeghi, 2005). Thus, the high incidence of consanguinity in this province can be the result of ethno-religious in-marriage. The low level of socioeconomic development (i.e. education) in this province could also be another factor. However, the multivariate analysis showed that controlling for education and place of residence, both ethnicity (particularly Baluch) and sect of Islam were strongly related to consanguinity, again suggesting the importance of the 'specific cultural and social context' in Sistan and Baluchistan.

Why has consanguinity not declined over the last three decades, and in fact, increased during periods? The increase in the 1980s was an increase in marriage with relatives more distantly related than first cousins, which may suggest increased community endogamy at the time of social change. This increase in relative marriage could be a response to traditional and religious values propagated during and soon after the Islamic revolution. However, there was no significant difference in the extent of marriage to biological relatives in the 1990s compared with the 1970s. The absence of change in behaviour from the 1970s to the 1990s is all the more significant because this was a period in which education levels of women increased considerably and urbanization was rapid. Indeed, analysis by marriage cohort showed that the incidence of marriage with a relative increased from the 1970s to the 1990s in every category of education except secondary education.

While it might be assumed that higher education for women restricts the pool of socially compatible male cousins for marriage, this group were found to have been more likely to marry a relative across time. There are several possible explanations for this. First, in Iran, higher education for women is often not oriented to future employment. Instead, it can be seen as education for marriage. Second, as argued above, as the proportion in each education category rises, this can have the effect of increasing the levels of conservatism in each education category because those moving up the educational scale are more conservative than those educated to the higher level in the previous cohort. In other words, a shift to a higher education level does not automatically make women behave in the same way as previous cohorts of educated women. Third, the numbers of men and women in successive marriage cohorts has been rising sharply in Iran because of high fertility levels in the past.

The incidence of consanguinity in rural areas also increased across time reflecting the selective effects of rural–urban migration, again suggesting the influence of compositional change rather than change of behaviour.

What will be the future of consanguinity in Iran? The time trend and stability of consanguinity suggest that consanguinity is likely to remain stable in the future, or decline at a slow rate. This is supported by new evidence indicating that the level of consanguinity is still prevalent among the new generation. Abbasi-Shavazi & Torabi (2007b), using a nationally representative data set from the 2001 Household Socioeconomic Characteristics Survey, examined inter-generational differences of

consanguineous marriage in Iran. They analysed whether married children in the same household as their parents had been married to a biological relative or not. They reported that the level of consanguinity for the younger generation was around 46% as compared with 42% for their parents' generation. While co-residence with parents is likely to be selective of those with more traditional values, the younger generation had much higher levels of socioeconomic characteristics (including education) relative to their parents. The apparent stability of consanguineous marriage can also be attributed to the multi-ethnic nature of the society as there are several ethnic groups in Iran with their own family structure, dynamics and values. As argued by Thornton and Fricke, in addition to 'structural differences in family and social organization, the processes of social and economic transformation themselves vary, producing differences in the trajectory of family change' (Thornton & Fricke, 1987, p. 770).

Nevertheless, evidence presented in this paper confirmed that attitudes of women towards consanguinity are running ahead of behaviour and it is likely that consanguinity will start its declining trend in the future. In Abbasi-Shavazi & Torabi's study (2007b) only 28% of never-married males and females agreed with consanguinity. Another factor supporting the decline of consanguinity is the shift from arranged marriage among the new generation. Around 53% of the older generation of women surveyed in Iran reported that their marriage had been arranged by their parents while only 32% of the marriages of the new generation were arranged by parents. Marriage to a biological relative was more common among those whose marriage was arranged by their parents. Thus, with the changing dynamic of arranged marriage, it is likely that the new generation will look beyond biological relatives to find a partner. Finally, within a decade or so, the much smaller birth cohorts of the 1990s onwards will be reaching the ages of marriage and it may be increasingly difficult to find a cousin of the right age to marry.

The analysis undertaken in this study takes understanding about as far as it can go using quantitative methods. Further understanding of the processes of consanguineous marriage in Iran requires qualitative or anthropological research. A careful anthropological study would shed light on such issues as the sustainability of relative marriage, the dynamics of the socio-political economy, ethnic relationships, wealth and property ownership, as well as power structures within each ethnic group.

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