

Original Article

**CULTURAL EVOLUTION AND THE NUCLEAR
FAMILY: WHITHER CLEAVAGE OF THE FATHER?**

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Abstract: As the 21st century continues to unfold, two very distinct versions of the father will compete for ascendancy across the world's community of cultures. One version is of very recent vintage and casts the role of the social father as supernumerary or optional. Cultures which adopt such a version tend to have high levels of divorce and out-of-wedlock births plus a pervasive cash economy as defining characteristics. The mother-child(ren) dyad tends to become the familial unit of such societies. A second, older, version adheres the father to the mother-child(ren) dyad to form the traditional nuclear family. Without commenting upon desirability, it is argued that, when compared to alternative familial structures, those cultures which both minimize fatherless families and systematically restrict women's roles to that of motherhood do and will have — across generations — a demographic advantage. And, in terms of cultural evolution, i.e. across generations, those cultures which emphasize triadic families of father-&-mother-&-children are positioned to systematically displace and/or to replace those cultures which emphasize the mother-&-children dyadic family.

Key Words: Cultural evolution, gender roles, father-child relations, divorce, single-parent births

Rule #1: All politics are local.
— *Rep. Tip O'Neill*

Rule #2: All long-term politics are reproductive strategies.
Rules #3: All effective long term politics camouflage Rule #2.
— *Ipsoc Macquire*

The generalized imagery of the (U.S.) father figure has become something of a kaleidoscope that has been repeatedly turned by academics and the literati within the last quarter century (e.g. Drexler, 2005; Dudley & Stone, 2004; Eberstadt, 2004; Pruett, 2000; and, for historical perspectives on the U.S. father, see Demos, 1986; Griswold, 1993; LaRossa, 1997; LaRossa et al., 1991).

Until very recently — the latter part of the 20th century — the social father was a given in virtually any and all societies (Hendrix, 1996; Hewlett, 1992; Lamb, 1987, Mackey, 1996; Malinowski, 1927; Van den Berghe, 1979). Two very distinct, antinomic interpretations of this given are available in relationship to the value or function of the current generation of fathers within the U.S. and within any other society with an industrialized-service oriented economy. First, it can be argued that prior fathers had served the dual roles of protector and provider that were essential to the survival of their wives as well as their children. However, current governmental protectors, viz. local police, state police, the National Guard, and the nation's armed forces, have efficiently and successfully undertaken the role of protector. The husband/father, who is less well trained for this role, is not needed. Similarly, governmental agencies, through local, state, and federal programs, have made death from privation and malnutrition extremely unlikely. Hence, the father's role of provider can also be supplanted either by working mothers and/or by governmental agencies. The argument would finish with the conclusion that social fathers, in an industrialized, service-oriented, information based economy, represent an anachronism and are best understood as being somewhere between supernumerary and optional.

On the other hand, the second interpretation argues that the sheer omnipresence of social fathers strongly infers important functions of fatherhood that transcend differences in economies, religions, political structures, ecologies or diets.

This article examines the second position and argues that, across generations, cultural dynamics lend an inherent advantage to those cultures that adhere men/fathers to the mother-child dyad and lend an inherent disadvantage to those cultures that systematically abrade men from the status-role complex of the social father. Framed a little differently, it is argued that those cultures that more keep the nuclear family intact will have a more promising trajectory across generations than will those cultures whose expectations view the social father as either supernumerary or optional. It should be made clear that the focus of this inquiry is upon cultural viability, across generations, and not upon cultural desirability nor upon appropriate versus inappropriate lifestyles.

Cultural Evolution and Cultural Extinction

Although each and every individual on this planet is guaranteed mortality,

some cultures — intact social groups — transcend individual mortality and last innumerable generations. However, all cultures are not so blessed, and the ethnographic literature is replete with examples of cultures that are simply no more. They are gone and gone forever. Some such cultures have been mighty: Caesar's Rome, the Maya, and the Aztecs. Others have been more modest: the Ona, the Yahgan, the Tasmanians.

The problem explored by this article is to tease out any relationships between the role of the social father in a culture and the level of that culture's perpetuity or long-term survival. There are two major routes to fatherlessness which will be analyzed in this context: father abrasion (divorce) and father preclusion (single parent births)².

The key element to cultural continuity is "births". If births consistently outnumber deaths in a culture, then that culture will expand. If deaths consistently outnumber births, then that culture will be threatened with extinction, e.g. the Shakers who practiced celibacy and chastity. If births and deaths are essentially equal, then the population remains in numerical stasis.

The primary demographic index to be used here is the rate of natural increase (birth rates minus death rates). With close to the power of a definition, those cultures with consistently higher rates of natural increase will represent, over generations, proportionately larger segments of the referent population than those competing cultures that have persistently lower rates of natural increase. If the rates of natural increase should prove to be negative for a culture, then that culture is threatened with extinction. The extinction would be slower with a slightly negative index and faster with a larger negative index.

Divorce and Rates of Natural Increase

Divorce rates (number of divorces per 1000 population) from the United Nations and the annual percentage of natural increase were available by nation (United Nations, 1995, 2001; UNESCO, 1994). The data indicate that divorce rates are (negatively) related to the annual percent of natural increase. The correlation is fairly robust ($r_p =$ —.49; $p < .001$; $n = 92$ nations). Approximately 24% of the differences in percentage of natural increase are aligned with differences in divorce rates. Framed a little differently, as divorce rates become higher, rates of natural increase become lower. It should be noted that nations are rarely homogeneous entities. The potential is quite real for noise in the system to overwhelm any useful signal. That is, the possibility to obtain false negatives is quite real.

² Minor sources of chronic separations of children from their fathers include jail, military duty, and widowhood (which was formerly the major source of fatherlessness).

However, if a pattern — a signal — were to be found within the data, despite variegated backdrops, then the found pattern is probably of some potency. Further, as will be illustrated below, patterned relationships were found across nations.

Of course, neither divorce rates nor levels of natural increase occur in isolation, and additional variables would need to be assayed to flesh out a context. The following model was developed to give the divorce-&-natural increase relationship just such a context. The following data were gleaned from information provided by the United Nations (United Nations, 1995, 2001; UNESCO, 1994) and the CIA (2008).

When a country develops a cash economy, workers are needed to man stores, factories, and businesses. If women are allowed access to those newly created jobs, then they quickly integrate themselves into the paid labor force (for early discussion and examples, see Day & Mackey, 1986; Easterlin & Crimmins, 1985; Handwerker, 1986; cf. Bradley, 1984; Ross & Harris, 1987). In turn, formalized schooling is needed to train those workers in literacy and ciphering. Thus, the model would suggest that, as an expanding cash economy (indexed by the gross domestic product's per capita income or GDP), gains momentum in a country, then (i) the percentage of the labor force engaged in subsistence agriculture would drop, (ii) birth rates would drop (and, as a consequence, rates of natural increase would drop [as long as death rates do not decrease]), (iii) the percentage of all students in secondary education (i.e. high school) who were females would also increase³, and (iv) the percentage of females who are in the national Parliament would increase. Figure 1 illustrates that such is the case. As (i) the percentage of females (rather than males) in secondary institutions increases, and (ii) the percentage of females (rather than males) in national parliaments increases and (iii) the per capita income increases, then the percent of natural increase is lowered. As the percentage of the labor force that is engaged in agriculture increases, so does the percent of natural increase. (Note that all indices were not available for all countries; hence the “n” varies per index)⁴.

³ Of course, anyone familiar with the field would not be surprised at this outcome. Discussion about the “demographic transition” is a mainstay in courses in the social sciences. The relationship between female fertility and education levels has been a cottage industry for decades with the same results and conclusions being reached (e.g. Hirschman, 1994; Hirschman, Tan, Chamrathirong & Guest, 1994; Mason, 1997; Robinson & Harbison, 1995; Van De Kaa, 1996). Accordingly, this statistic is not presented as being new or innovative. What is being presented, in an additive manner, are the *consequences* of such a statistic, not merely for the individuals involved at that time, but for the impact such patterns have upon cultural evolution. Such a putative impact has not been as extensively analyzed.

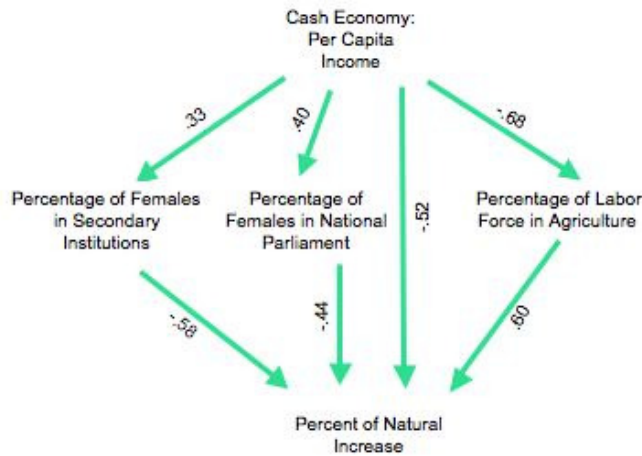


Figure 1: Demographic parameters of natural increase
Note: All correlations $p < 0.001$; n range from 143-171
 $R = .73$; $p < 0.001$; $n = 141$; adj. $R^2 = .51$

With all four independent variables (secondary institutions, national parliaments, per capita income, and agrarian labor force) acting in the aggregate upon the percent of natural increase (the dependent variable), the relationship was significant ($R = .73$; $p < 0.001$; $n = 141$). Over a half of the variance in the percent of natural increase can be accounted for by changes in the four independent variables (adjusted $R^2 = .51$)⁵. Accordingly, it is clear that nations do differ in their rates of natural increase and that these different rates are not random. Part of the pattern is that, as the divorce rate trends increase, the rate of natural increase is lowered. Next, the context of divorce rates is examined across the four demographic variables.

⁴ Note that if total fertility rate (TFR), the number of live births a woman is expected to have over a lifetime, replaces rate of natural increase, the (patterned) results remain the same. If percentage of females (rather than males) in institutions of tertiary education replaces institutions of secondary education, these (patterned) results remain the same. Data are available from the first author.

⁵ R or Multiple R is the coefficient of multiple correlation used to analyze the relationship between several independent or predictor variables and the dependent variable (Cohen, Cohen, West & Aiken 2002).

Demographic Parameters of Divorce Rates

When divorce rates replace the percent of natural increase as the dependent variable, the following pattern emerges: (i) as the percentage of women (rather than men) in national parliaments increases, divorce rates also increase, (ii) as the reliance upon a cash economy (indexed by per capita income) increases, so do divorce rates and (iii) as subsistence agriculture lessens in importance, divorce rates tend to increase (see Figure 2.)⁶ The combined effect upon divorce rates by the four variables (percentage of women in national parliament, the percentage of the labor force in agriculture, percentage of natural increase and per capita income) is significant ($R = .64$; $p < 0.001$; $n = 88$) and accounts for approximately a third (adjusted $R^2 = .39$) of the variance in divorce rates.

From these data, the following argument is made. When women, within their own socio-cultural milieu, can expand their status-role complexes beyond that of motherhood, they will do so. If the women can enter into the paid labor force and earn a salary, they will do so. If any formal training beyond the primary level (elementary school) facilitates or enhances the women's marketability in the labor force, the women will increase their attendance in the appropriate institutions of higher learning. If alternative status-role complexes, other than motherhood, are adopted by women, then the number of births per woman decreases. Birth rates drop, and the annual percentage of natural increase also drops. If the traditional male role of breadwinner can now be performed by the woman herself or by the government, then the husband/father, if he proves unsatisfactory to the woman, can be jettisoned by divorce (if divorce is allowable in the country in question and if she is pre-emptively given child custody). It may be noted in passing that a cross-cultural analysis of divorce reveals that a failure to provide support or resources (food, clothing, & shelter) to the wife/mother by the husband/father was a socially sanctioned reason to divorce in 23 cultures. In none of these 23 was a similar failure toward the husband/father by the wife/mother a socially sanctioned reason to cause a divorce to occur (Betzig, 1989).

Let's take two polar sub-samples and carry out a demographic analysis just with the two sub-samples. The two sub-samples are Europe ($n = 36$ countries) and a swath of countries wherein Islam is the dominant religion starting from Mauritania and running eastward to Pakistan ($n = 25$ countries). These sub-samples abut each other around the Mediterranean Sea: the Muslim swath to the south and Europe to the north. Any genetic differences of these peoples are probably quite minimal, but the cultural differences are manifest.

⁶ Percentage of women, rather than men, in institutions of secondary education is not related to divorce rates (t_p ; n.s.).

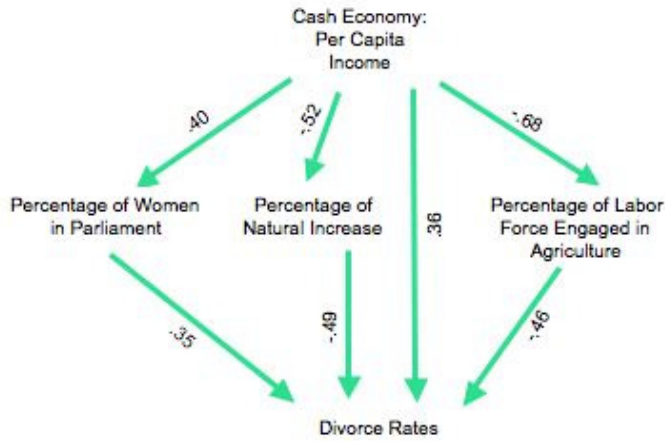


Figure 2: Demographic parameters to divorce rates
Note: All correlations $p < 0.001$; n range from 89-168
 $R = .64$; $p < 0.001$; $n = 88$; $\text{adj. } R^2 = .39$

Europe (gender egalitarianism) versus the Muslim Swath (gender complementarity)

For example, the Muslim swath — compared to the European nations — had (i) a higher level of natural increase, (ii) a lower GDP per capita income, (iii) a higher percentage of the labor force engaged in agriculture, and (iv) a lower percentage of female (rather than male) students enrolled in institutions of secondary education (see Table 1.)

It seems self-evident that those cultural formulae which consistently generate higher levels of natural increase will displace or replace those bio-cultural formulae with lower levels of natural increase. As Table 1 illustrates, the surveyed Muslim countries have a rate of natural increase (mean = 2.2% per year) over ten times that of the European countries (mean = 0.2% per year). Given that the current Muslim swath socio-cultural formula does have an inherent and robust advantage over the Europe socio-cultural formula, the expectation would be that — across generations — the cultural formula found in the Muslim swath is positioned to displace or to replace that found in Europe. It may be noted here that the fertility level of virtually all the countries of Europe is below replacement level (2100 births per 1000 women).

Table 1: Countries in Europe (n = 36) versus countries in a Moslem swathe (n = 25) along five demographic indices.

	EUROPEAN		MUSLIM SWATH		p-value
	Mean	S.D.	Mean	S.D.	
% of females in secondary institutions/ n=60	50.6	1.2	42.2	8.5	.001
% annual rate of natural Increase/n=61	0.2	0.4	2.2	0.7	.001
% of females in national parliaments/ n=61	18.0	10.6	3.0	3.7	.001
% of labor force in agriculture/ n = 61	12.5	11.8	35.6	24.5	.001
GDP per capita income (in \$1000)/ n = 61	21.7	12.6	8.8	10.1	.001

Note: results from t-test analyses; data taken from Central Intelligence Agency 2008, United Nations 2001

The Drive-Wheel

The argument presented here argues that, for both the overall sample and the two sub-samples of Europe and the Muslim swath, the key variable is the amount of latitude that women have in sculpting their own life-style trajectories. If women are more restricted to the mother status-role complex, then birth rates tend to be higher. If women have greater options beyond the mother status-role complex, then birth rates will be attenuated. Thus, if a cash economy is established, wherein formal training is a pre-condition for employment, then women, if not proscribed by law or tradition, will enter that economy. To the extent that a woman’s position as employee or entrepreneur conflicts with motherhood, the greater the pressures for her to reduce the number of children she will conceive, bear, and raise.

Independence and Divorce

Not only does employment within a cash economy enhance the woman’s financial freedom, but the data suggest that its consequences offer her an extra ply of conjugal freedom. That is, if she is not accruing sufficient satisfaction with her current marital situation, then she has the added opportunity to dissolve

her union and to re-direct her life's trajectory in a direction that is more aligned with her wishes. Divorce statistics from the U.S. (Chadwick & Heaton, 1992; Fox & Kelly, 1995; Mackey, 1993; National Center for Health Statistics, 1989; Sack, 1987; Sitarz, 1990); Great Britain (Buckle, Gallup, & Rodd, 1996; Office for National Statistics, 2002; Dennis, 1992); Canada (Peters 1979); Northern Ireland (Northern Ireland Court Service, 2000); Ireland (Court Service, 2001); New Zealand (Sullivan & Allen, 1996); and China (Beijing Review, 1995; Hong & Ning, 1992) suggest that, (i) if divorce can be effectively initiated by the woman (ii) during her child-bearing years, and (iii) the mother nominally retains custody of the minor children, then petitioners for divorce are dominated by the wives rather than by the husbands.

Divorce and Cultural Evolution

Thus, within the short term — i.e. within a single generation — as life-style options are increased for women, (i) divorce increases and (ii) the rate of natural increase is lowered. Consequently, across generations, an interesting dynamic would occur. Namely, those cultures with more expanded options for women would be under systematic pressures to be displaced or replaced by cultures that constricted women's life-time experiences toward those of motherhood.

For example, the countries of the Muslim swath are generally considered to be highly patriarchal with women precluded from positions of economic or political power and from a wide spectrum of occupations. Numerous authors who have written ethnographic accounts of the relevant Muslim countries invariably refer to the strongly patriarchal character of the political and economic structures. The question is never “Is the country patriarchal?” The ethnographic accounts revolve around how the patriarchy developed and how is it maintained. For example, Ahmed (1992) writes, “the subordination of women in the ancient Middle East appears to have become institutionalized with the rise of urban societies and with the rise of the archaic state in particular...” and, as Islam crystallized its theology, “implicit in this new order was the male right to control women and to interdict their interactions with other men. Thus the ground was prepared for the closures that would follow (p. 242)” (See Kadioglu, 1994 for a parallel argument for women's role in Turkey). Toubia (1988, pp. 2-3) makes the case quite clearly, “Arab women are dominated by men in every area of life in the patriarchal family system: state, political party, trade union and public and private institutions of all types.” She noted that over 97% (97.2%) of the Yemeni women, as late as 1975, were illiterate. Badran (1995, p. 5) notes that “the woman was perceived as essentially or exclusively, a sexual being, unlike the man who was only partly understood in terms of his sexuality”. Gerami (1996, p. 157) views the current version of Islamic fundamentalism as “...nipping a very young feminist movement in the bud and under the banner of nature's mandate,

pushed women further into the family. They managed to cast woman's individualistic identity as a perversion of her nature plotted by Western imperialists". Obermeyer (1995, p. 370) observes that the "Islamic emphasis on complementarity rather than equality in gender roles" makes dialogue with a worldview predicated on equality rather than complementarity extremely difficult. Inhorn writes that, "in a society (Egypt) where the patriarchal fertility mandate is emphatic, the social and psychological consequences of 'missing motherhood' — of being a woman unable to deliver a child for her husband, family, affines, community, faith, nation, and not inconsequentially her — are nothing if not profound". It is germane to this argument that, in general, Muslim men can initiate divorce far more easily than the Muslim women. The Koran gives some theological basis for this asymmetry, and local interpretations have intensified the gender differences (Ansari, 1973; Caner & Caner, 2002; Hekmat, 1997; Kamali, 1984. cf Barlas, 2002 who specifically argues that the interpretations of the Qur'an, rather than the Qur'an itself, result in high levels of patriarchy). For reviews of the literature, see Al-Qazzaz (1977), Meghdessian (1980), Mernisse (1991), Raccagni (1978), and Tucker (1993). For theoretical overviews, see Caner & Caner (2002), Lerner (1986), Orens (2003), and Walby (1990).

Women in National Parliaments: Europe versus the Muslim Swath

A survey of women legislatures found that women in the Muslim nations, which were included in the survey averaged less than 4% (3.0%; standard deviation 3.7%; n = 25) of the legislators. The comparable figure for the European nations was 18.0% (standard deviation = 10.6; n = 37) ($t[59] = 7.83$; $p < .001$) (United Nations, 2002). As mentioned earlier, these Muslim countries have a rate of natural increase (mean = 2.2% per year) over ten times that of the European countries (mean = 0.2% per year). It is the European countries that, in the main, have been in the forefront of advocating gender egalitarianism. Hence, compared to those of Europe, the cultural formulae representing the countries in the Muslim swath will increase their proportion of the area's population in each of the succeeding generations during which the disparity persists. Framed a little differently, not only will comparatively more children be born within the confines of the Muslim swath, but their worldview and their mores and folkways that eventuated in their increased proportions will similarly be increased within the area's cultures. Specifically and ironically, the social constriction of women's roles to that of motherhood will be expanded demographically.

On the other side of the coin, compared to those of the Muslim swath, the cultural formulae representing the countries of Europe will decrease their proportion of the area's population in each of the succeeding generation during which the disparity persists. That is, the extremely low fertility levels will result

in European children representing an ever smaller proportion of the area's children. The cultural value of gender egalitarianism — which helped to facilitate the lowered fertility levels — will be shared by a perpetually shrinking proportion of the countries in the Circum-Mediterranean region. The demographic advantage which is currently being accrued to the Muslim swath would be shared with any other cultures around the world which parallel the Muslim swath's delineation of women's roles — within the context of men's/fathers' roles. The demographic disadvantage accrued to the European nations would also be shared with any other groups around the world which parallel the European cultural mosaic.

Emigration and Immigration

In an example of cultural diffusion, emigrants tend to flow from higher fertility, lower income areas to lower fertility, higher income areas. In the context of this article, emigrants from the Muslim swath tend to gravitate toward (Western) European nations. When they enter and settle into their new homeland, they, of course, bring with them the world-views, expectations, and traditions which had successfully led to their own socialization. This cultural package includes an anticipation of relatively high fertility.

As Table 2 clearly indicates, women immigrants from the Moslem swath have a far higher average number of children than do the nationals of that nation. Six of the seven European nations are below replacement value. The women immigrants in all 12 of the sampled populations are well above replacement value. Again, if the average number of children per woman is below 2.0, then the population's trajectory is headed toward evaporation. Thus, each of the two demographic profiles (Europe and the Muslim swath) is not isolated from the other, but illustrates a dynamic wherein cultural mosaics with higher fertility will displace or replace cultural mosaics with lower fertility.

The German example is illustrative here. From 1960 to 1990, the proportion of births in which at least one of the parents was non-German increased eight-fold (from 2% to 16.9%) (Statistisches Bundesamt, 1992)⁷. In addition, when fertility rates, as measured by children ever born (live) per thousand women, are used as

⁷ In 1960, 92.5% of the births in Germany were of German parents (another 6.3% of the children were born to single mother Germans). Two percent of the children were born to parents involving at least one non-German (0.1% a German father & a non-German mother, 0.7% a German mother & a non-German father, and 1.2% to non-German mothers [either a single parent or with a non-German father]). By 1990, the percentage of births to two German parents dropped to 73.5% (another 9.5% were born to single German mothers). By 1990, the percentage of births involving at least one non-German rose to 16.9% (2.2% a German father & a non-German mother, 2.8% a German mother & a non-German father, and 11.9% to non-German mothers [either a single parent birth or with a non-German father]) (Statistisches Bundesamt 1992).

the index, a similar picture emerges. In 1970, the fertility rate was 2010 lifetime births per 1000 German women and 2176 for non-German women. That is, the rate was about 8% higher for non-German women. By 1990, the rate for German women dropped to 1420 lifetime births. The rate for non-German women had

Table 2. Mean number of children born (total fertility rate [TFR]) in selected European nations by native-born nationals compared to immigrants from non-European nations

Nation	Mean Children Born:		Country of Origin	Ratio Immigrant: Nationals
	Nationals	Immigrants		
Austria	1.64	4.43	Turkey	2.7
Belgium	1.60	5.7	Morocco	3.6
Belgium	1.60	5.0	Turkey	3.1
Great Britain	1.7	5.3	Pakistan	3.1
France	1.82	4.24	Algeria	2.3
France	1.82	4.47	Morocco	2.5
France	1.82	4.67	Tunisia	2.6
France	1.82	4.55	Turkey	2.5
Germany	1.3	2.9	Turkey	2.2
Netherlands	1.6	3.1	Turkey	1.9
Netherlands	1.6	4.7	Morocco	2.9
Sweden	2.1	3.45	Turkey	1.6
Mean (n)	1.68 (7)	4.38 (12)		2.58 (12)
S.D.	0.24	0.85		0.55

Adapted from Coleman, 1994.

dropped to 1900 lifetime births; yet was nearly a third higher than that of German women (Statistisches Bundesamt, 1992). Thus, even though native Germans are reproducing below replacement value, the land is not becoming empty, non-Germans are more than willing and able to move and to take up the slack (see Coleman, 1994 for similar examples from other European nations and see Morris, 1997 and White, 1997 for further analysis). Another example: between 1990 and 1996, there was a 2.2 million net influx of immigrants into Germany (Coleman, 1998). In addition, between 1990 and 1997, there was a 1.7 million gross influx of asylum seekers and refugees into Germany. In terms of overall population growth in Germany, a hefty 128% of Germany's growth is due to immigration (Martin & Widgren, 1996) (a similarly constructed Dutch figure was

75%, ECEIRS, 2000)

Once these immigrants have ensconced themselves within their new homelands, they tend to maintain a higher birth rate than that of the “native” inhabitants (Coleman, 1994). Accordingly, two forces acting upon the immigrants are in play: the inertia of cultural diffusion versus cultural assimilation. The relative potency of each force in determining the immigrants’ rates of natural increase will be an interesting dynamic to follow across generations.

Unless the immigrants illustrate instantaneous assimilation, the cultural inertia of the immigrants’ own socialization and value systems would be expected to impact, to some degree, upon the social milieu of their new nation. Cultural lag is probably relevant here.

There is some evidence that the assimilation of some immigrant groups is a good deal slower than instantaneous. Muslim immigrants into Europe, e.g. second generation Turks and Moroccans, have a comparatively high rate of intra-ethnic marriage, and compared to the native population, a higher rate of wives not in the labor pool (i.e. stay at home mothers) (Andersson, 2001; Coleman, 2001; Coleman & Garsen, 2002; Ekberg & Rooth, 2002). For example, in nine surveyed European countries, immigrant women — compared to natives — are over-represented in unemployed figures (means of 20.0% versus 11.9% respectively) (Andersson, 2001). In the Netherlands, over 40% of the Turks and Moroccans were unemployed (Coleman, 1998). Only 17% of the Moroccan migrants in the Netherlands were participating in the labor force (Coleman, 2001).

The immigrants also tend to have higher fertility rates. For example, immigrants from Muslim countries, e.g. Turkey, Pakistan, Bangladesh, Afghanistan, who moved to Sweden illustrated, when compared to native Swedes, higher indices of first births at a young age, births after 31 years of age, second births, third births, and fourth births.

These immigrants tend to live in proximity to each other and, thereby, are better able to maintain their own cultural traditions than if they were more geographically scattered in the community. As described below, the Turkish immigrants provide a useful template.

Immigration from Turkey is continuing through marriage arrangements. Many young people continue to respect the custom of marrying someone from their parents’ native village, and, in many cases, the spouses even belong to the same family. Inter-ethnic marriages are rarer among the Turks than among other immigrant groups from the Muslim world (the spouses in half of the 13,659 marriages registered by the Turkish consular authorities in Germany, France, the Netherlands, Belgium and Austria in 1996 were both Turkish nationals). The immigrants tend to be from rural areas, and, once in the host nation, they tend to settle in clusters according to their localities of origin. To the extent possible,

people from the same village or the members of a family will settle close to each other (Manço, 2000).

Accordingly, one quarter of the Turkish immigrants over 18 who live in Belgium were born in Afyon Province (Western Anatolia). There is a similar concentration of Turks from Karaman Province (Central Anatolia) in the Netherlands. The Turks living in Sweden come primarily from Kulu (Konya Province, Central Anatolia), while 60% of Denmark's Turkish immigrants come from the Kurdish areas of Southeast Anatolia. Family ties (*akrabalik*) and regional ties (*hemserilik*) are still strong. The community lifestyle and resulting social control largely remain intact among Turkish immigrants. The traditional family hierarchy tends to be reproduced through marriages in the native villages. These alliances can be interpreted as a partial, but consistent, renewal of the first generation of immigrants (Manço, 2000).

The geographic concentration and concomitant Germanic cast of Europe's Turkish immigrants are noteworthy. Two-thirds of the European Turkish community is in Germany. Europe's German-speaking countries (Germany, Austria, and Switzerland [90% of Switzerland's Turkish population live in the German-speaking cantons]) harbor 74% of these immigrants (Manço, 2000).

In comparison with the Turkish community, nearly 70% of the 2.5 million North African immigrants from Morocco, Algeria, and Tunisia, who have settled in Europe, live in French-speaking countries (France, French-speaking part of Belgium, and Switzerland) (Manço, 2000).

Accordingly, the gender complementarity that tends to be characteristic of their natal homes would receive lessened influence to shift to the gender egalitarianism which is more characteristic of their current community. An example of the gender complementarity is that sons — compared to daughters — are more expected to receive higher levels of education. The longer that the gender complementarity world-view is maintained, the longer that these daughters would have more constricted options (compared to their brothers). As the data indicate, these constricted options translate into higher fertility (see Coleman, 1994 for similar examples from other European countries and see Morris, 1997 for further examples and analysis).

Conversely, European migration to the Muslim swath is meager to non-existent. Therefore, demographic, empirical evidence does become available to illustrate the trajectory of cultural evolution. The cultural mosaic of the father-&-mother-&-child(ren) triadic family — with the women restricted to the status-role complex of motherhood — is structured to systematically replace or displace a cultural mosaic wherein the father is optional or supernumerary and gender egalitarianism is extant.

It is useful to note that (e.g.) Japan and South Korea are experiencing a pattern closely paralleling the European model, but with the important exception that neither country encourages immigration of non-ethnics. Accordingly, both

population maintenance and an ageing population are becoming social problems with no solution at hand.

Two U.S. Examples

Shifting the focus from the Circum-Mediterranean region to the U.S., two examples from the U.S. help make a similar analytical point that expanded woman's roles and fertility currently operate at loggerheads. The first example is from a highly profiled, if more rarefied, sample with all the attendant problems in such sampling. The second sample is less stark, but has more generalizability.

Men and women from Who's Who

The inclusion of an individual in Who's Who (Who's Who, 1997) reflects a consistent level of high achievement on the part of that individual⁸. Accordingly, a sample of men who were listed in Who's Who (henceforth WW) was surveyed by number of children they (and their wife or wives) had reared. A second sample was surveyed of women who were listed in WW by the number of children they (and their husband or husbands) had reared. The first 25 names of men and the first 25 names of women were surveyed for each letter of the alphabet (with the exception of "X" (the individuals in the U.S. with a surname beginning with "X" are either rare or underachieving). A total of 628 men were surveyed. A total of 630 women were surveyed. The results are presented below.

Men in WW The mean number of children per man in WW was 2.156 (standard deviation = 1.548). The mean number of children per father (n = 504) was 2.687 (standard deviation = 1.205). Approximately 20% (19.7%) of the men were childless.

Women in WW The mean number of children per woman in WW was 1.254 (standard deviation = 1.374). This figure was less than the similar figure for men (t [2144] = 10.920; p < .001). The mean number of children per mother (n = 362) was 2.180 (standard deviation = 1.154) and was lower than the mean number of children per father (t [2142] = 6.252, p < .001). Over 40% (42.5%) of the women were childless. This number was higher than that of the men's (z = 8.733; p < .001). The mean age of women in WW was in excess of 50 years; thereby indicating that their child-bearing was essentially completed.

⁸ Who's Who, in the main, represents achieved status vis-a-vis The Social Register which, in the main, represents the ascribed status of the entries' families.

Synopsis of WW data Thus, not only were (all) women in WW below the replacement value of 2100 children per 1000 women, they were also below the (all) men's level. Given the very high level of childlessness in the women's WW, these results are not unexpected. However, when the fertility level of (only) mothers is compared to that of (only) fathers, the mothers in WW — although above replacement level — were still substantially below that of fathers. Therefore, women in WW who did become mothers were still yielding a fertility rate below that of women-&-mothers who married men in WW. Framed a little differently, high achieving women are operating at a lower fertility level than are high achieving men, i.e. a matrilineage of high achieving women would be extremely difficult to maintain in the current U.S.

Fertility and Education

As has been well documented in numerous outlets, there is an inverse relationship in the U.S. between level of formal education and fertility and this inverse relationship is neither new nor unique⁹. Of special interest here is the gap between being a high school graduate (a status which most U.S. women attain) and those women who attend at least one year of graduate school (a status only a minority of women would attain). The high school graduates have approximately twice the number of actualized births and a comparable number of potential or expected births in the future (see Table 3). Even if all the planned births of the female graduate students occurred, their fertility rate would still be well below replacement value. (See Smock, 1981 for similar data from additional countries).

Synopsis

Thus, from both the U.S. samples, the same interpretation becomes available: as high achieving women expand their options beyond the mother status-role complex, their fertility rates fall and fall below replacement value. No intact group can sustain itself if its rate of natural increase is negative. This pattern parallels the European pattern. To wit: when options are increased for women, the women avail themselves of those enhanced options and, to the extent that alternative roles are incompatible with that of the multiparous mother, birth rates drop (see Brown [1970] and Murdock & Provost [1973] for cross-cultural examples and discussion).

Table 3. Births and birthing expectations for women across six countries

⁹ The United Nations defines "illegitimacy" in the following manner: "Legitimate refers to persons born of parents who were married at the time of birth in accordance with the laws of the country or area. Illegitimate refers to children of parents, who, according to national law, were not married at the time of birth, regardless of whether these children have been recognized or legitimized after birth." (United Nations, 1992, p.196).

Cultural Evolution

Country	Completed Education	Completed fertility: Number of children
Mexico ^a	None	7.8
	1-3 years	7.5
	4-6 years	6.3
	Secondary +	1.6
Ghana ^a	None	6.6
	Primary	5.7
	Middle	5.4
	Secondary	4.4
Kenya ^a	University	1.4
	None	7.4
	1-4 years	7.9
	5-7 years	8.7
	8-11 years	5.3
	12-13 years	2.5

Country	Completed Education	Completed fertility # Children	% expecting no more births
Pakistan ^a	None	5.9	
	1-10 years	6.1	
	10+ years	6.8	
Philippines ^a	Special Education	3.2	
	None	5.6	
	1-4 years	6.5	
	5-7 years	6.4	
	8-12 years	5.9	
U.S.A. (1982) ^b	University	4.5	
	Less than high school degree	1.7	8.7%
	High school; 4 years	1.2	10.3%
	College, 1 to 3 years	0.8	13.1%
	College, 4 years	0.6	15.7%
U.S.A. (1992) ^b	College, 5 years or more	0.6	18.7%
	Less than high school degree	1.8	7.6%
	High school, 4 years	1.3	9.0%
	College, 1 to 3 years	0.8	10.0%
	College, 4 years	0.7	10.3%
	College, 5 years or more	0.6	12.0%

^a For women who are at least 35 years of age; ^b For women 18 - 34 years of age
Data from Bianchi and Spain 1986; Smock 1981; U.S. Bureau of the Census 1995.

Furthermore, based on the European model, U.S. divorce rates would be expected to be higher than the world's sample, and such is the case. The mean for the world's sample (n =105) of divorce rates was 1.6 (standard deviation = 1.3), the U.S. divorce rate was 4.7: over double the world's average. In addition, U.S. mothers — rather than fathers — (i) dominate the petitioning for divorce (see Table 4) and (ii) tend to retain custody (both *de jure* and *de facto*) of minor children (Chadwick & Heaton, 1992; Fox & Kelly, 1995; Mackey, 1993; National Center for Health Statistics, 1989; Sack, 1987; Sitarz, 1990).

Table 4. Percentage of divorces by number of children and by status of petitioner: 1982-1986

# Children	Status of Petitioner				Total	Status of Petitioner Husband vs. wife only	
	Husband	Wife	Husband and wife	Other		Husband	Wife
None	35.5%	55.9%	5.4%	3.2%	100.0%	51.3%	41.8%
One	27.8%	64.8%	5.7%	1.7%	100.0%	22.2%	26.8%
Two	27.6%	64.7%	6.0%	1.7%	100.0%	17.1%	20.7%
Three +	27.4%	65.7%	5.2%	1.7%	100.0%	7.0%	8.7%
Not spec.						2.4%	2.0%
All Children	31.3%	60.2%	5.8%	2.7%	100.0%		
Total						100.0%	100.0%

Mean number of divorces = 573,931
 Data from National Center for Health Statistics, 1989.

Discussion

The thesis being argued here is that communities that keep the nuclear family intact have a long term demographic advantage when compared to those communities which allow the biological/social father to be abraded or jettisoned at the discretion of the wife/mother.

The prototypic comparison is between the countries of Europe and those of the Muslim swath. Europe has high divorce and high independence of its women and a very low birth rate. Again, the fertility rate of virtually all of contemporary Europe is below replacement value. As a matter of contrast, the Muslim swath is

intensely patriarchal, with low independence for its women and has a comparatively high fertility rate. Note that, worldwide, of the 10 nations with the lowest number of children born per woman, seven were from Europe (the remaining three were Singapore, Hong Kong and Armenia). All ten of these nations were well below replacement value, and, clearly, if a birth rate is below replacement value, then, whatever the death rate may be, the nation will experience a population decline of their native citizenry. Of the 10 nations of the world with the highest number of children per woman, all ten were from nations that are predominately Muslim or from nations which are in more southern Africa (see Table 5).

Hence, the data indicate that the cultural formulae found in Europe are under systematic pressures to be displaced or replaced by those cultural formulae found in the Muslim swath. Indeed, as has been pointed out, migration from the Muslim swath into Europe is real and substantial. Once these immigrants have ensconced themselves within their new homelands, they tend to maintain a higher birth rate than that of the “native” inhabitants (Coleman, 1994). Accordingly, two forces acting upon the Muslim immigrants are in play: the inertia of cultural diffusion versus cultural assimilation. The relative potency of each force in determining the immigrants’ rates of natural increase would be an interesting dynamic to follow across generations.

Table 5. Highest (top 10) and lowest (bottom 10) fertility rates (mean number of children per woman) by country and geographical area

Highest Ranked:				Lowest Ranked:			
Rank	Area	Country	Children	Rank	Area	Country	Children
1	Africa	Somalia	6.91	1	Asia	Hong Kong	0.91
2	Africa	Niger	6.83	2	Asia	Singapore	1.04
3	Asia	Afghanistan	6.78	3	Europe	Lithuania	1.17
4	Asia	Yemen	6.75	4	Europe	Czech Rep.	1.18
5	Africa	Dem. Rep Congo	6.62	5	Europe	Italy	1.19
6	Africa	Uganda	6.60	6	Europe	Spain	1.24
7	Africa	Mali	6.58	7	Europe	Italy	1.27
8	Africa	Angola	6.33	8	Europe	Slovakia	1.31
9	Africa	Burkino Faso	6.43	8	Europe	Hungary	1.31
10	Africa	Liberia	6.29	8	Asia	Armenia	1.31

Mean = 6.58
Standard Deviation = 0.25

Mean = 1.20
Standard Deviation = 0.13

Data from Central Intelligence Agency, 2008.

Out-of-wedlock Births and Rates of Natural Increase

Whereas rates of divorce (father removal) lend themselves to a patterned integration into larger cultural contexts, rates of out-of-wedlock births (father preclusion) are more elusive in understanding how they meld into an overall cultural mosaic. Part of the dilemma is the restricted number of countries that record or make public such data. Such information was available from only 60 countries, and Europe was clearly over-represented in the sample (35 of the 60)¹⁰. Nonetheless, when this truncated sub-sample of 60 is analyzed, no relationship is found between percentage of out-of-wedlock births (percentage of all live births which were out-of-wedlock), and (i) divorce rates, (ii) GDP per capita income, (iii) percentage of the labor force engaged in agriculture, (iv) rate of natural increase. There was a positive relationship between percentage of women, rather than men, in national parliaments ($r_p = .39$; $p < .01$; $n = 59$). The relationship between rates of divorce and percentage of out-of-wedlock births resoundingly reflected independence ($r_p = .09$, n.s.; $n = 57$). When the combined impact of the four independent variables (GDP, percentage of labor force in agriculture, rate of natural increase, and percentage of women in national parliaments) upon the dependent variable (percentage of out-of-wedlock births) is analyzed, these results do indicate significance ($R = .47$; $p < .01$; $n = 59$). However, the amount of explained variance is rather modest 16.7% (adjusted $R^2 = .167 = 16.7\%$).

Conclusion

Just as King Canute could not stem the tide, no one can prevent the year 2200 from arriving. Certainly, there will be a large population on the planet. Each person who is alive in the year 2200 will be able to trace his or her ancestry to 2000. Everyone is guaranteed ancestors. However, no one born in 2000 is guaranteed descendants in 2200. The asymmetry is clear and inviolate. It seems to be a logical imperative that those intact groups with greater rates of natural increase — the gap between birth rates and death rates — will systematically replace or displace those intact groups with lesser rates of natural increase. The replacement or displacement would be slower if the differential gap is small and would be quicker if the differential gap is large. In either case, as long as one rate of natural increase remains larger than an alternative rate, the group with the larger rate has a demographic advantage in terms of cultural evolution. Those cultural formulae which comprise and define each current, intact social group

¹⁰ Because of uniformly low death rates across all the educational levels, fertility rates can be effectively, if not identically, equated with rates of natural increase.

must have histories, but are not similarly guaranteed perpetual futures. The cross-cultural data suggest that two facets of a cultural mosaic have more staying power when compared to alternatives. First, cultures which adhere biological & social fathers to the mother-child(ren) dyad also have a demographic advantage when compared to cultures which positively sanction divorce and/or out-of-wedlock births. Second, cultures that restrict women's roles to motherhood tend to have higher levels of natural increase than do cultures which expand women's roles over and beyond that of motherhood. The comparison of European countries with those of the Muslim swath clearly profiles the dynamics of how a cultural formula which (i) has on-going fatherhood as a given, and (ii) constricts women's roles to that of motherhood has a clear demographic disadvantage – across generations – when compared to a cultural formula which has (i) a problematic fatherhood and (ii) emphasizes expanded women's roles. Thus, without commenting upon desirability, the gains of women in the occupational, political, and economic spheres, i.e. gender egalitarianism, appear to be of problematic longevity. And that, unless a new social contract – among men and women and governance – is forged and willingly incorporated by its citizenry, a patriarchal form of cultural organization — forged around the traditional nuclear family which results in multiparity — will remain predominant.

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