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BY

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Social Environmental bases of Fertility

Motivation: A Dynamic View*

Motivation refers to any arousal of an individual to goal-directed behavior. As a social-psychological concept, motivation cannot be considered apart from the social-cultural systems which define appropriate and desirable behavior. The "wants" of an individual may be influenced by his physiological state, but to a much larger extent they are developed through his learning and experience in a social-cultural context (Krech, Crutchfield and Ballachey, 1962). When the social-cultural environment changes, the individual would acquire and develop different wants. Subsequently his action may also change.

Any individual may have many wants. An important one to be discussed in this paper is the fertility motivation, i.e., the number of children an individual wants to have. Fertility motivation is by no means a

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constant. Like other motivations, the wanted number of children would change in accordance with changes in the social-cultural environment. The questions then arise, what kinds of changes in the social-cultural environment would affect changes in fertility motivation? and how? To shed light on these questions, let us begin with a brief description of the major processes of social change and then discuss their possible impact upon fertility.

Social Change

Social change is a universal phenomenon. Although there is a much faster rate, and a greater magnitude, of change in the present than in the past, some kinds and degrees of change have been found in all human societies (Moore, 1963). Because of the universality and accelerating rate of change, many social scientists have contributed to discovering and explaining the nature and processes of change in human societies.

As suggested by Radcliffe-Brown (1957) and later by Moore (1963), in the study of social change we should distinguish between two types: (1) the readjustment of behavior or the sequence of prescribed actions, i.e., the interaction and mobility which occur within the system and hence do not affect the social-cultural pattern of the society; and (2) the change of type of

system, i.e., the process through which a society passes from one type of social-cultural system to another. In this paper we shall focus on the second type of social change, that is, the change of social-cultural system. Social-cultural system change can be conceptualized in terms of three interrelated processes, namely, (1) the accelerated rate of technological advancement, (2) the increased differentiation in social structure, and (3) the process of rationalization in the belief system.

Technology refers to the tools and skills with which men utilize the resources in the environment to satisfy their varied wants. A striking fact in human history is the increase of technological innovation at an accelerating rate ever since prehistoric ages. As Ogburn (1922) has asserted, the number of technological discoveries has been increasing something like an exponential curve. The most rapid growth of technology emerged in the early days of the industrial revolution when men began to apply scientific principles to the practical problems of production technology. The linking of science and technology leads to extensive use of inanimate, rather than animate, sources of power, and hence greatly contributes to the effective manipulation of environmental resources to meet human needs.

The efficient use of complex technology requires an elaborated social-organizational structure, i.e., a higher degree of division of labor and specialization. As a consequence of technological advancement, the structure of society has been increasingly differentiated. Structural differentiation refers to the process of replacing a multifunctional social role or organization by two or more specialized roles or organizations (Smelser, 1963). In a primitive or traditional agrarian society, for instance, the family unit performs many functions, but these functions are gradually taken over by relatively autonomous and more specialized institutions in the process of modernization. Meanwhile, differentiations also emerge within each of the relatively specialized institutions. In the economic institution, for instance, there have been an increasing number of specialized occupational roles.

A central requirement for the invention of technology and its effective application is the rise of rational orientation to the control of social and physical environment. It is believed that what is controlling is not some kinds of traditional or supranatural entities, but the criterion of reason or utility. Moreover, the increased structural differentiation resulting from technological advance gives rise to the problem of coordination and integration. In order to regulate

the relationships among the various specialized units so that they function in some coordinated fashion, it has also become necessary to develop a rational orientation in the belief system. The interaction between technology and social differentiation leads to the rise of rationalism as a dominating ideology in the process of modernization.

The historical development of human societies can be characterized as a rationalization process (Max Weber, 1947; Gerth and Mills, 1958). The motivational bases of social action have been progressing from sacred or supranatural elements toward secular or utilitarian ones. Relatively undifferentiated and technologically undeveloped societies are typically dominated by "sacred" norms, i.e., by those rules or customs which are perceived as being associated with some traditional or divine forces. People tend to take these norms for granted, and tend to observe them for their own sake. They give little or no consideration to the criterion of utility or reason.

The triumph of scientific technology and the rapid increase of structural differentiation in recent centuries, however, have created an overall tendency of human acts and thoughts to become increasingly secular or utility oriented. Norms are generated and accepted on

the basis of reason, efficiency, or utility rather than tradition or sacredness. "Secular" norms are pervasive in modern industrial societies which are structurally differentiated and technologically complex. People in the age of modernization increasingly find themselves living in a world in which more and more of the sacred or magical elements are displaced by the principles of reason and utility.

It should be underscored that both sacred and secular norms coexist and serve as motivational bases of social action in any given society. Moreover, as Nisbet (1970, Chapter 9) has asserted, rare is the sacred norm that is not in some way supported by secular or utilitarian norms, and rare too is the secular norm that is not attended in some degree by sacred norms. What we have argued so far is that the relative dominance between these two types of social norms or bases of human acts has been shifting as a result of technological and social-organizational changes. Social action in tribal or agrarian societies are largely governed by sacred norms while that in modern industrial societies is primarily motivated on the basis of secular or utilitarian consideration.

The term rationalism may be defined as "the methodical attainment of a definitely given and practical

end by means of an increasingly precise calculation of adequate means" (Gerth and Mills, 1958: p.293). The definition suggests that the concept is multi-dimensional rather than unitary. Three of the major components are: (1) mastery orientation, i.e., the belief that man is capable of controlling the social and physical environment; (2) achievement orientation, i.e., the determination to do well or to search for better ways to attain given ends; and (3) planning orientation, i.e., the desire to make systematic arrangement for the future. We may thus postulate that a man is rational oriented if he persistently searches for more effective ways, through systematic planning, of mastering and utilizing the resources in his environment so as to fulfill his wants.

For purposes of exposition, we have outlined the impact of technological progress upon structural differentiation and rationalization, and have also mentioned the effect of structural differentiation on the rise of rationalism. This sequence does not mean that any one of the "causal" relationships is asymmetric. Instead, the three processes --- technological progress, structural differentiation, and rationalization --- form an inter-active or mutually reinforcing system. Structural differentiation, for instance, may lead to a higher rate of technological innovation, as workers devoted to a

specialized area are likely to be more knowledgeable of their own work and are thus more capable of discovering new techniques and tools. More important is that many of the scientists or experts today are exclusively engaged in the process of technological discovery. Likewise, the persistent effort to search for better ways to utilize material or human resources may push toward a higher rate of technological inventions and an increasing extent of division of labor in the organizational structure. In the following discussion, however, relatively greater emphasis will be placed upon the role of technology. The reason is that of the three processes, technology seems to play the most distinctive role in the course of societal change. It is more likely than social organization and ideology to be a leading source of change. As Lenski (1970, pp. 101-3) has put it:

Technology is the least sacred of the three.... It is the aspect of sociocultural systems in which men have the least emotional investment, and therefore they tend to regard it more pragmatically. One reason for this difference of attitude seems to be that it is so much easier to compare the effects of alternative tools or techniques than it is to compare the effects of alternative systems of social organization or alternative ideologies Furthermore, technology is more instrumental in nature; it involves the means men use to attain their goals, not the goals themselves. And men are more flexible and pragmatic with respect to means than to ends.

To sum up, we have suggested that the forces of technological progress, social differentiation, and rationalization are mutually reinforcing in the course of social-cultural system change. As a general trend, human societies have been changing at an accelerating rate from a technologically simple, structurally undifferentiated, and sacred or traditional oriented pattern of social action toward a technologically complex, structurally differentiated, and secular or utility-rational oriented pattern. Then, how do these changes in the technological, social-organizational, and ideological systems affect fertility motivation?

The Theory of Demographic Transition has been criticized in many specific ways (see, for instance, Coale, 1974). No explicit attention has been given, for example, to motivational linkages between changes in social-economic conditions and individual fertility behavior. Nevertheless, we can hardly deny its overall generalization concerning the decline of fertility in the course of social and economic development. The fertility rate, however, is to be distinguished from fertility motivation. While fertility rate refers to the fertility situation of a particular population as a whole, fertility motivation is more adequately discussed at the individual level, with considerations given to

how the individual's desires for children are affected by his social environment. Besides, the number of children an individual wants to have may not be the same as the actual number. In view of the above-mentioned generalization of demographic transition, can we say that fertility motivation also declines, just as the overall fertility rate does? Our answer is that this is very likely. Let us delineate in some detail the ways in which the processes of social change may lead to decline of the wanted number of children.

Traditional Societies

The social order of traditional or underdeveloped societies may be characterized as "family dominance." The overwhelming importance of the family and kinship system is concretely expressed by the wide range of functions it serves. In addition to performing the very basic functions of reproduction and companionship, the family is the most essential organization of economic production and consumption, the main educational agent for transmitting technical skills and moral values from generation to generation, the center for controlling and regulating social behavior, the fundamental unit of worship and religio-ritual observance, and the major source of welfare and health care. Because of its multi-functional character, the family and kinship institution is placed at the center of social life in traditional

societies. Rare is any individual who does not depend on the family or the wider kin groups for his social, political, and economic security. A consequence of the high dependence on the family and kinship system is the development of a collective orientation. The welfare of the collectivity (i.e., the extended family organizations) takes precedence over that of any single individual or his nuclear family unit. This collective orientation is conducive to high fertility motivation, for the reasons discussed below.

The survival and prosperity of the family and kinship system is dependent upon the extent to which the various functions can be carried out. But the extent to which so many important functions are adequately performed depends on the available technology and the supply of manpower. Since the level of technology is low, the family system has to rely on human labor, particularly during the hunting or fishing periods, the planting or harvest seasons, or the military conflicts with outsiders. In such a labor-intensive system, individuals tend to believe in the power of large population size (especially males). It is widely perceived that the larger the population size, the more productive and powerful would be the family and kinship organizations. The sheer number of people is regarded as a crucial factor for the survival and prosperity of the collectivity.

It is not easy for a traditional or underdeveloped society to maintain a large population size. The inadequate diet, the prevalence of infectious diseases and other natural disasters cause high mortality among adults and particularly among children and infants. Recording some vital statistics of a primitive peasant community in Africa, Harding (1948) noted that the death rate in the period recorded by him was higher than the birth rate. He also noted that more than a third of the recorded deaths occurred among infants less than one year old, and that the infant mortality rate of approximately 42 per 100 births is not unusually high for a society at this level of technological development. It seems not unusual, therefore, for a traditional or underdeveloped society to be confronted with the problem of manpower shortage. A solution to this problem is to encourage high fertility. The desirability of such a solution is possibly reinforced by several aspects of the family and kinship system.

To perform the various functions, the family and kinship system develops a social structure which is characteristically authoritarian. The allocation of rights and obligations are based on some ascriptive criteria, such as sex, age, and generation level. In the exercise of rights and the fulfilment of obligations, male takes precedence over female, a higher over a lower generation, and the older over the younger members. This

authoritarian structure of the family system is conducive to high fertility motivation in at least two ways. First, since the authority system is at the expense of the younger persons or the lower generation, the birth of a child would bring about an extension and promotion of the power and status of the parents and their kinsmen. Second, due to the authoritarian relationship between husband and wife, there may exist little communication between spouses concerning the desirability and/or feasibility for limiting births.

In addition to great dependence on the family and kinship system, the population is also constrained by underdeveloped communication and transportation technology, rendering them relatively immobile and isolated from the outside world. The consequence is frequent and intimate interaction among individuals. Interpersonal relationships can be characterized as diffuse (i.e., concerned with a broad variety of aspects of a person) and particularistic (i.e., evaluating a person on the basis of some special relationship to him, such as kinship or friendship ties). This pattern of relationships may encourage high fertility motivation. Since people tend to be extensively concerned with each other and to support each other in terms of particularistic criteria, parents would find it not only emotionally gratifying, but also

functionally necessary to have a large number of children. They are able to anticipate mutual concern and support among themselves, their children, and other kins.

Since the educational institution is not differentiated from the family and social life is relatively simple, children generally have a rather short period of dependency. They learn the moral values and technical skills from parents, and are expected to start working at a rather early age, usually contributing to the family farm or plantation. The fact that the cost of children is less than the possible reward adds to the value of having more children.

In short, we have argued that traditional or underdeveloped societies usually face a dilemma: there is a strong demand for human labor to perform the so many important functions of the family system but there is high mortality rate. The desire for high fertility as a solution to this problem is backed up by several features of the traditional family system, namely, the authoritarian structure, the pattern of diffuse and particularistic relationships, and the low economic cost as compared to benefit. This analysis suggests that the existence of high fertility motivation in traditional societies may have some utility-rational bases.

In order to make sure that the motivation remains from generation to generation, members of the society tend to develop a set of social norms expecting every couple to produce a large number of children. In traditional Chinese society, for instance, it was widely accepted that "the more children, the luckier the family," "it is most desirable to have five generations living under the same roof," "there are three types of unfilial behavior, but the most serious one is to have no child," and "to get richer and to have more children are equally important."

In traditional societies, human action is largely governed by sacred norms. Since both technology and social organization are typically underdeveloped, members of the society can hardly understand and control the environment. They tend to develop fatalistic attitudes, and tend to believe in the existence of some divine, suprapowerful, or supernatural forces. Anything that is essential for the survival and prosperity of the community is likely to be perceived as possessing divine elements. The formulation and the enforcement of high fertility norms may be originally based on some secular or utilitarian criteria. Since they are so vital for the survival of the collectivity on which the welfare of individuals greatly depend, there is a powerful tendency to make the

norms supranatural or suprautilitarian, and to see in them divine or godlike characteristics. The high fertility norms hence pass from the realm of secular to sacred. Members are indoctrinated by the society to take the norms for granted and to closely conform to them without considering their utility or rationality. In many traditional societies, high fertility norms become part of the religious ideology (such as the Biblical adjuration of Christianity to "be fruitful and multiply") or associated with some moral-religious values (such as the ethic of worshipping and glorifying ancestors in traditional China). The linking of high fertility norms to religion or other moral ethics increases its sacredness. Being regarded as sacred, such norms become very powerful pressures for high fertility motivation. In many, if not all, traditional societies, the birth of a child (particularly a son) is an important occasion of celebration, congratulation, and thanksgiving.

The sacred-normative pressures for high fertility are also strengthened by the enforcement of social sanctions. Families with a large number of children (especially boys), for instance, are usually honored and respected, and may also share or inherit a larger portion of communal properties. On the contrary, smaller families may suffer from lower prestige and less economic reward. It is hence not unusual to find that in many traditional societies, a

woman's status rises with an increased number of children. A woman who is unable to give births may be discriminated, divorced, or deserted, or may have to let the husband look for a concubine or concubines.

The sacred-normative pressures for high fertility motivation may, of course, create the problem of population explosion, i.e., too many mouths for the supply of food. It should, however, be noted that because of the prevalence of fatalistic views, members of the society may have a greater tolerance of poverty. The problem of population explosion is felt only after a very prolonged and substantial population growth. Under such circumstances, the society may have to generate a "multiphasic response" to the population increase (Davis, 1963). It may reduce the number of mouths by a number of alternative ways, such as abortion, sterilization, migration, contraception, postponement of marriage, permanent celibacy, infanticide, exposure of the sick to die, and abandonment of the very aged. But these practices are not usually necessary. The high mortality rates make it unusual for the population to undergo substantial increase for a prolonged period of time. On the contrary, the usual problem faced by the society is to make sure that there are enough people to perform the so many important functions of the family system. For most of the time, therefore, the high fertility norms

remain to be not only desirable but also necessary for the survival of the collectivity.

Transitional Societies

We have discussed some social, cultural, and technological factors that contribute to high fertility motivation in traditional societies. But no society is static. As stated earlier, technology is more likely than social organization and cultural beliefs to be a leading force of change. The rapid technological progress in the last two centuries has made tremendous contributions to the effective utilization of resources in the environment. As a result of medical and health technological advances, mortality rates are substantially reduced. Human labor is also increasingly replaced by complex tools and machines. Since people can be more certain about the survival of their children to adulthood and do not need so much human labor for economic reasons, the importance of high fertility norms decreases. Logically, fertility motivation should decline. However, the fact is that in many transitional societies, despite rapid technological development in various realms such as economic production, medicine, and family planning programs, fertility rates remain very high (Statistical Office of the United Nations, 1965). It is interesting to speculate why this is so.

In the first place, it could be due to the sacredness of high fertility norms. Since these norms have been regarded as divine or supernatural and have been closely and unquestionably observed for generations, they would persist tenaciously for a prolonged period of time after the technological conditions have changed.

The continual existence of sacred-normative pressures for high fertility may also explain, in part, a major finding of KAP surveys in Latin America and Asia (Berelson, 1966; Chung, et al., 1972; and Choi and Chan, 1973) that there exists a discrepancy between the actual number of children and the preferred number. Faced with the realities of raising children in the context of technological advancement in a transitional society which has decreased the necessity for more births, the couple may prefer a rather small number of children. However, the high fertility norms have been so sacred and so powerful in the larger community for generations that it is not easy for any couple to allow utilitarian consideration of their own to take precedence over these sacred norms.

The couple, therefore, may still be "forced" to produce more children even after they have attained the preferred number. The discrepancy should be wider among the less educated and poverty couples who are affiliated with pronatalistic religions such as Catholicism and

ancestor worship. These couples are more likely to be sacred oriented rather than secular oriented, and they are therefore less willing to deviate from the sacred norms of high fertility.

Another reason for the continuation of high fertility motivation in transitional societies could be the emergence of alienation. The term alienation refers to the rather complex feeling of isolation, powerlessness, normlessness, and meaninglessness (for a detailed discussion of this concept in relation to technological change, see Faunce, 1968). As Ogburn (1922) has impressively demonstrated, the much faster rate of technological growth than that of social-organizational and ideological changes may lead to the state of "cultural lags." This problem is particularly serious in many of the developing societies today, as they usually import very modern machines and tools from the advanced nations but are not able to make the appropriate social-organizational and ideological adjustments within a relatively short period of time. Old, well-established ways of thinking and values are no longer adequate to cope with a world of new products, new roles, and new life styles. The world of the past becomes disjointed with the world of the present and the future. A consequence of cultural lags is thus the rise of alienated attitudes and behavior, which in turn, if widespread, may encourage births. As Groat and Neal (1967) have stated,

For those high in powerlessness, fertility seems likely to constitute an occurrence, a chance happening, an unmanaged event. Similarly, we expected those high in meaninglessness and normlessness to be unlikely to link immediate experiences with future consequences. A sense of uprootedness, aloneness, and isolation ... would be associated with the attempt to gain social integration through having and rearing children. Thus, for those high in alienation in its various forms a large number of births may result from the operation of "drift," chance occurrence, good or bad "luck," and failure to engage in long-range, rational planning of the more important aspects of life.

A third reason, as Rich (1973) might suggest, could be the unequal distribution of the economic and social benefits of progress. In many transitional societies, in spite of the rapid increase of economic productivity, there exist wide disparities in income. Only a small segment of the population has benefited from the progress while the majority remain in a poverty state. These disparities may result from the fact that the development of social organizations for improving the distribution of resources lags behind the advancement of production technology. As a result, the favored minority may start to desire for smaller families, but the disadvantaged majority may remain to be fatalistic or sacred oriented and thus continue to be motivated for high fertility. Moreover, the lack of opportunities for the majority of the population to attain a "fair" share of the benefits may increase their feeling of alienation which, in turn, leads to high

fertility motivation. The contribution of these disadvantaged majority to high fertility can be seen from the research finding in a comparison of 40 developing countries (Rich, 1973: p.67) that average income levels of the poorest 60 per cent of the population correlate much more closely with fertility levels than do average incomes of the entire population.

Modern Societies

With the continual growth of technology, readjustments in social organizations and cultural beliefs would gradually take place. As outlined in the beginning section of this paper, the structure of the society becomes increasingly differentiated and the belief system also becomes increasingly rationalized. A modern industrial society is characterized not only by advanced technology, but also by high levels of social differentiation and the pervasiveness of utility-rational orientation.

In modern societies, the family ceases to be the most dominant institution. Many of its important functions have been stripped away and taken over by more specialized roles and organizations, such as schools and nurseries, commercial firms and factories, political parties and government bureaus, hospitals and clinics, recreational associations and welfare agencies. What the family preserves

are the very basic functions of reproduction, companionship and early socialization of children.

The family's loss of functions means a decreased reliance of an individual upon the family and kinship organizations for the fulfillment of his various needs. A strong tendency toward some type of nuclear family pattern emerges, i.e., toward fewer kinship ties with distant relatives and a greater emphasis on the small family unit of couple and their children (Goode, 1963). The nuclear family unit is differentiated from the larger kin network, and becomes more autonomous, as the direct control of elders and collateral kinsmen weakens. The concern with the welfare of the kinship network as a whole is increasingly displaced by the concern with the welfare of one's own nuclear family unit. After all, as each nuclear unit tends primarily to its own affairs, and as practically all of whatever functions the family system still retains are already carried out by basically the nuclear unit, the meaning of the welfare of the kinship network as a whole becomes less and less clearly defined.

In traditional societies, the number of children a couple is motivated to have is largely influenced by the elders and collateral kins, but now in modern societies the decision is primarily made by the couple themselves. Then, what are the motivational bases of their fertility decision?

As discussed earlier, a central feature of the belief system in modern society is the rise of rationalism, that is, the increasing emphasis on mastering the environment, making greater achievement, and planning for the future. Also as implicated before, rationalism underlies many aspects of modern society, e.g., methods and systems of industrial production, scientific and technological innovations and explorations, development of systems of organization and communication as the functions of governments proliferate, and the ever rapidly changing patterns of living (work, housing, transportation, recreation, etc.) that are tied in with other structural changes. In such a society, any social norm, in and of itself, has little or no behavioral implications unless when it is related in some way to the exigencies of living in modern society. In other words, norms are effective and influential not because they are sacred as norms in traditional societies tend to be, but because they are regarded to have utility values. Once individuals adopt the rational orientation they tend to question traditional or sacred norms of all kinds, including those of high fertility. Consequently, the fertility motivation of the married couple is based more on secular or utilitarian calculation than on sacred or supranatural considerations. What do children mean in their marriage? What are the satisfactions and costs, economic and otherwise,

of children in modern times? How do children compare with various other social benefits and consumptions? These are among the major questions that couples would ask in considering how many children they want. Such questions, it may be noted, tend to center around the welfare of the couple's nuclear unit rather than that of the wider kin groups.

The rise of rationalism may lead to reduction of fertility motivation but may also sustain high fertility motivation; it depends on the pattern of interaction within the nuclear family unit and social and economic conditions outside the family (Hill, Mayone and Back, 1959; Freeman, 1961-62; and Hawthorn, 1970). For example, Heer (1966) in his comparative study of 41 nations found that the direct effect of economic development is increased fertility as married couples become more optimistic concerning their future economic status. Heer's finding indicates that in technologically advanced societies, rationalism may sustain high fertility motivation. However, the continual growth of technology and its dynamic interaction with structural differentiation and rationalism would bring about certain types of family interaction and social-economic conditions that are inconsistent with the traditional or sacred norms of high fertility but are instead conducive to the development of a rational decision in favor of a small number of children. Let us suggest some of the conditions under

which a utility-rational oriented couple may desire to limit births.

(1) The loss of the family's functions, the increasing dependency on specialized institutions outside the family, and the reduction of infant and childhood mortality by modern medical and health facilities have made it unnecessary to produce so many children.

(2) In traditional societies religion is usually an important backup to high fertility motivation. In modern societies, however, religious values become secularized, resulting in a lower degree of religious resistance to changes in fertility motivation. More important is that religious leaders begin to emphasize the quality of human life rather than its quantity, and that "many enlightened Catholic clerics no longer condemn the use of contraceptive methods" (Ehrlich and Ehrlich, 1970, pp. 260-3).

(3) The enforcement of child labor laws in modern industrial societies, plus the tendency of grown children to be independent from their parents, reduce the economic benefit of raising children. Moreover, in traditional societies old-age security is an important incentive for high fertility, but in modern societies there appears an increased reliance on governments and other impersonal organizations rather than on kins for sustenance of the elderly. If parents do not or can not anticipate any significant economic "return" from their children, they would be less motivated for having more children.

(4) In modern societies people tend to evaluate each other on the basis of universalistic achievement, i.e., the competency and the actual performance of an individual, rather than some particularistic relationship or ascriptive qualities. This evaluative standard contributes to a high degree of social mobility. In order to avoid relative loss of status or to acquire more resources so as to move upward, the couple tend to restrict fertility. Furthermore, when social mobility actually occurs, it facilitates the differentiation of the nuclear unit from the extended kinship network and thus helps to reduce the functions of the family and kinship system.

(5) In a technologically complex and universalistic-achievement oriented society, formal education is not only an important mechanism for a society to develop and allocate its human resources, but is also an important means by which an individual achieves upward mobility. The important role of education in modern societies has led to the gradual extension of educational provision to larger proportions of the population, and expansion from primary through secondary to higher education. This "educational revolution" affects fertility motivation in many possible ways, such as delay in marriage, increased economic cost of raising children, improved health, decline of traditional or religious values, higher receptivity to fertility regulation, improved access to family planning information,

increased participation in non-familial activities, and increased knowledge of attractive alternatives to child raising. No less important, the extension of education may create a distinctive adolescent subculture, leading to a greater degree of intergenerational conflict (Coleman, 1961). Such conflict would reduce the emotional reward from raising children. For these various reasons, education has been widely regarded as a leading factor causing the decline of fertility motivation (see, for instance, Freeman, 1963; Liu, 1967; Caldwell, 1968; Chung, et al., 1972; Rich, 1973; and Choi and Chan, 1973).

(6) The development of effective mass communication networks is also essential for the decline of fertility motivation (Freeman, 1963). They help to disseminate family planning knowledge and to increase the extent of social participation.

(7) The increased literacy and the more effective mass communication networks would make an individual become more knowledgeable of other people's life-styles. Because of his high achievement needs (which, as discussed, is a component of rational orientation), the individual would tend to take persons with a higher standard of living as reference groups. If he sees no way to approximate these reference groups, he may suffer from "relative deprivation" and may become alienated. In modern societies,

however, he usually finds that there are opportunities for achieving a higher standard of living. The motivation to reduce relative deprivation is possibly a powerful incentive to family limitation (for a similar argument, see Mayer and Marx, 1957).

(8) As infant and childhood mortality is greatly reduced and as the standard of living increases, more and more couples tend to give emphasis to the "quality" of children in terms of child-care, health, education, preparation for career, and various kinds of social and economic accretments based on quality performance and achievement. Therefore the cost of children, not just financial but psychological as well, can be said to have increased with the rise in the standard of living. Resources available to the couple are thus an important consideration in determining the quality of children that is possible. Furthermore, with regard to available resources, the question of children's comparison or even competition with other sources of satisfaction tends to loom large (Fawcett, 1972). Taking a very secular and practical view, the couple may want to attain a certain high level and variety of social and material satisfactions for both themselves and a small number of children (or, for that matter, even no children at all) instead of all the "burdens" that may accompany a large number of children. (For a general review of surveys giving data relevant to the relationship

between preferred family size and economic level, see Blake, 1967). Indeed, as modern society is capable of providing more alternative sources of satisfaction (e.g., career roles, social participation, recreation, etc.), the value of children may relatively decrease (e.g., Leibenstein, 1957).

(9) The expansion of educational opportunities for females and the rise of female-demanding industrial structure increase the employment opportunities and wages for wives outside the home. The increase in such opportunities for wives may have important negative effect on fertility motivation (Cain and Weininger, 1973). A large number of children would make it difficult for wives to be free from household work and to take up jobs outside.

(10) Possibly due to the increased educational and economic opportunities for females, the modern nuclear family tends to be equalitarian. The power of husband over wife is relatively weak. As Hill, Stycos and Back (1959) have suggested, equalitarian structure may facilitate the communication between spouses on general issues and on birth control matters; and the higher level of interspouse communication may foster the desire to limit births.

(11) Associated with social and economic development is the process of urbanization, i.e., the migration of rural populations to urban areas and the resulting increase

in urban populations. Many nations around the world have been very rapidly urbanized during the last two centuries, and the trend is likely to continue (United Nations, Department of Economic and Social Affairs, 1969; and Davis, 1972). The effect of urbanization on fertility is well known: lower level of fertility for urban residents than rural residents, and for rural-to-urban migrants than rural nonmigrants (see, for instance, Miro and Mertens, 1968; Caldwell, 1968; Ritchey and Stokes, 1972; Chung, et al., 1972; and Goldstein, 1973). The relationship between urbanization and low fertility motivation may not be direct. It could be due to the housing congestion in urban areas and to the fact that the above-mentioned social-economic and familial conditions are more likely to emerge in urban areas than in rural communities. Nevertheless, it should be recognized that the trend toward urban concentration of population may, at least indirectly, contribute to the decline of fertility motivation.

(12) The contribution of increased availability of more effective contraceptive techniques and family planning programs to the decline of fertility motivation cannot be denied. Family planning technology, however, primarily works as a facilitating factor: it facilitates the impact of social-economic and family variables on fertility motivation. In other words, given that the social-economic conditions and the family patterns are conducive to low

fertility motivation, then the couple will take the family planning technology into consideration and will further increase their motivation to limit births. No matter how effective is the technology of birth control, it would not be appreciated, not to mention adopted, unless people find it desirable or necessary to reduce fertility.

The social conditions just mentioned are among the major characteristics of modern society that are relevant for fertility motivation. In particular, they tend to encourage among rational-oriented individuals a desire for a small number of children. It must be noted, however, that these conditions operate mostly, though not exclusively, on a societal level. The implications they have for fertility motivation, and for fertility behavior particularly, are strong but have to emerge through changes in individuals. As Inkeles and his associates (1969) have found in their Harvard Project on Social and Cultural Aspects of Development, in societies with a higher degree of modernization more individuals tend to possess dispositions corresponding to those of rationalism. We can therefore expect that as long as the conditions of modernizing societies will continue and persist, the fertility motivation of individuals in these societies would be oriented toward small family sizes.

Summary

Changes in fertility motivation are conditioned by the changes in social and cultural environment. The course of social-cultural system change can be conceptualized in terms of three interacting processes: technological advancement, increased differentiation in social structure, and rationalization in belief system. The history of human societies can be characterized as the progress from a technologically simple, structurally undifferentiated, and sacred or traditional oriented pattern toward a technologically advanced, structurally differentiated, and secular or utility-rational oriented pattern. The consequence of this progress is the decline of normative pressures for high fertility motivation. High fertility norms are consistent with the family-dominated sociocultural system of traditional or underdeveloped societies. They are so important for the welfare of the society that they tend to be perceived as sacred. These sacred-normative pressures for high fertility motivation persist for some time during the period of transition from underdeveloped to developed society. The continual growth of technology and its interaction with structural differentiation and rationalization, however, gradually lead to the rise of utility-rational orientation to fertility. At the same time, the emergence of certain social-economic and familial conditions tends to make a utility-rational oriented couple consider it not merely a matter of

desirability but almost one of necessity to limit the number of their children. Under these sociocultural circumstances, the increased availability of more effective family planning technology may serve to facilitate the decline of fertility.

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