

THE THEORY OF DEMOGRAPHIC TRANSITION AND SRI LANKA'S DEMOGRAPHIC EXPERIENCE

by

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1. Introduction

Various theories have been put forth on the puzzling subject of population growth. Gutman has classified these into three broad categories based on the kinds of problems and the phenomena treated.¹ The three categories identified include A, the impact of population growth on productivity and economic growth. Category B, the derivation of the so-called "optimum" population, and Category C, the theory of the demographic transition. The theorists who support Categories A and B view population growth in causal terms and tend to search for a single factor which serves as the direct basis of growth. For example, Malthus² related population growth to the quantity of food available, and Doubleday³ to kinds of food consumed by the population, while theorists providing support for Category C tend to employ a multiple factor format as a means of explaining population growth patterns.

2. Origin of the Theory of Demographic Transition

The theory of demographic transition, which attempts to describe and explain long-term growth patterns of a population, is one of the most widely established, accepted and at the same time criticized population theories of the modern era. Today, it even seems to supersede the Malthusian theory in terms of its controversial character.⁴ Opinions regarding the source of the theory of demographic transition are rather incongruous. Many credit Thompson for originating the concept of the demographic transition.⁵ Evaluating worldwide data on vital rates in the 1920's, Thompson recognized three types of countries at three different stages of growth :

Group A—These countries have a very rapidly declining birth rate, and although their death rates are low, their rates of natural increase are declining and they are rapidly approaching a stationary or decreasing population because of the general practice of conception control.

Group B—Birth rates are coming under control in these countries, but rather slowly. Death rates are declining more rapidly than birth rates, however, so that natural increase is rising or at least not declining to any great extent.

Group C—In these countries both birth rates and death rates are subject to little voluntary control as yet and the positive checks determine the growth of population.⁶

Though Thompson's purpose was to classify nations based on their growth rates rather than to formulate a theory, theory building is, however, implicit in the conceptual design of the categories recognized by him.

Glass credits the French demographer, Laudry, as the originator of the theory of demographic transition.⁷ Laudry observed three "regimes" of population growth paralleling the three stages envisaged in the transition model,⁸ similarly glass acknowledges Carr-Saunders for introducing the idea of "staggered phasing of mortality and fertility decline," which presently serves as the cornerstone of the demographic transition theory.⁹

Although the model's origin is not entirely clear, there is consensus about the subsequent development of the theory. The literature generally points to Notestein's classic work, the "Long View of Population" as the early landmark in the development of the theory. Notestein's work represents a reformulation of the original idea.¹⁰

The three stages identified by Notestein were :

1. Incipient decline—where low mortality and declining fertility lead toward negative increase.
2. Transition growth—where mortality declines fast, and fertility declines slowly.
3. High growth potential—where both birth and death rates are high, sometimes with variable mortality.

Later Blacker elaborated on the theory by identifying five stages instead of the original three.¹¹

1. High stationary—high birth and death rates.
2. Early expanding—high birth and lower and falling death rates.
3. Late expanding—declining birth and death rates with the latter considerably below birth levels.
4. Late stationary—low birth and death rates.
5. Declining phase—excess of deaths over births.

Subsequently, the theory was further elaborated and sharpened by many other writers, including Davis,¹² Cowgill,¹³ Hertzler,¹⁴ Glass,¹⁵ Van Nort,¹⁶ and Van Nort and Karan.¹⁷

Other studies have either been supportive or non-supportive of the demographic transition theory after applying it to conditions in individual countries. Noteworthy among them are, Peterson's work in the Netherlands,¹⁸ Irene Taeuber's in Japan,¹⁹ Davis,²⁰ Roy Chung²¹ and Clark²² for the world in general, Schnell for developing countries,²³ Zarate for Mexico,²⁴ and Sandaratne for Sri Lanka.²⁵

These researchers, in general, accept the tenability of the ideas inherent in the theory of demographic transition with certain reservations. Problems related to the theory of demographic transition are dealt with in great detail by Ryder,²⁶ Taeuber,²⁷ Peterson,²⁸ Kammeyer,²⁹ Flieger,³⁰ and Loschkay and Wilcox.³¹

3. Criticisms of the Theory of Demographic Transition

The demographic transitional model can be best described as a descriptive model. The model is fairly explicit. Much evidence can be cited in support of it. Yet, criticisms have been mounting during the past decades with the development of more and better data and sophisticated analytical methods and tools. A major line of criticism focuses on some of the theoretical generalizations which evolved from the model.

For instance, there has been wide criticism of the assertion in stage two—which states that as economic change and modernization begins to take place, the mortality rate drops earlier and faster than the fertility rate. Habakkuk,³² Hertezer,³³ and Peterson³⁴ have hypothesized that the dominant factor supporting rapid population growth during the early expanding phase of the transition was not the falling death rate, but rather the rising birth rate.

Evaluating medical evidence related to English population changes in the eighteenth century, McKeown and Brown have shown how, especially in the early stages of the demographic transition, medical advances—except vaccination—were demographically irrelevant.³⁵ Mercantile economists and Malthus have shown possibilities of economic development and modernization to increase the demand for labour which, in turn, leads to increase in population. Taking this lead, Galbraith and Thomas have documented a positive relationship between business cycles and marriage and birth rates for the U.S.A. between 1919 and 1937.³⁶ Similarly, Easterlin was able to show that a supporting element for the U.S. baby boom of the 1950's was the high salary level for those in the age group 20–29 years.³⁷ Weintraub's study of

developed countries has presented evidence supporting an increase in fertility—rather than a decrease—as a result of increased development. Similar evidence is presented by Adelman for underdeveloped countries.³⁸

Peterson; at a later date, introduced new evidence from Japan to support his earlier deductive argument that population increases as a function of economic development rather than decreases.³⁹ He illustrates how the population of Japan increased from 35 to 55 million when the initial phase of industrialization was over. The rate of annual growth increased from .75 percent in the 1870's and 1880's to 1.5 percent in the 1910's and 1920's. This accelerating growth, according to Peterson, was not the consequence of substantiated decline in mortality, as might be anticipated from the transitional theory. He shows how, to the contrary, the death rate remained almost constant at around 20 per thousand. Accordingly, he concludes that "the higher fertility, that by our surmise accompanied earlier British industrialization, can be established with somewhat greater certainty in the Japanese case."⁴⁰

However, Kammeyer analyzing vital rates, after correcting them for the biasing effects of under-registration, found the Japanese case to be quite consistent with the theory of modern demographic transition.⁴¹

Despite the many criticisms Peterson presented against the theoretical framework of the demographic transitional model, he later comments :

Although some of the details have proved to be false and some of its implications misleading, in its simplest form the theory of demographic transition is nevertheless one of the best documented generalizations in the social sciences.⁴²

Another criticism concerns the empirical base of the theory. Flieger⁴³ explores this at length. He attempts to remove the bias associated with the use of crude rates obtained from period data. He illustrates how the crude rates obscure the influence of changing age distribution. An example of this can be observed when mortality decline is followed by a decline in fertility as an outgrowth of an age distribution which is temporarily inflated to include segments of the population most responsive to childbearing.⁴⁴ However, Flieger who used cohort data in place of period data, concludes :

The criticism that crude rates which are commonly used to determine mortality and fertility trends in transition analysis, are ambiguous with respect to timing of these trends and obscure age structure effects, has led to an increased emphasis on cohort analysis. Approximated cohort data for Sweden, assembled from a long series of pooled data, do not

reveal any differences as far as overall trend patterns of vital rates, age composition, or quinquennial changes therein are concerned. The only difference appearing is in the timing of vital trends. Birth rates of Sweden cohorts started to decline approximately 40 years before period-based rates give any indication. While cohort analysis does not point toward an invalidation of the transition theory in general, refinements of its principles with regard to timing of its trends are desirable.⁴⁵

Another area of shortcoming is attributed to the lack of the theory's preciseness. Flieger severely attacks the theory on these grounds :

A theory must be precise, so that specified empirical hypothesis can be derived and tested. Testing a hypothesis requires a sufficient number of clearly defined concepts (variables) which actually measure what they set out to measure and a clear distinction between dependent, intermediate, and independent variables. The dependent variable to be measured is population movement through time. What the intermediate and independent variables are still a matter of discussion and more often than not determined by the availability of data rather than by objective needs.⁴⁶

However, most of the criticism could be avoided if one understands that the theory of demographic transition was formulated by its early proponents as theory with considerable generality. The systematic statement of the theory includes only trends in birth and death rates over a long period of time as a means of understanding the population growth variable.

As Schwirian interprets it :

The term model as used by social scientists is both ubiquitous and ambiguous. Basically a model is an isomorphic abstraction of the essential properties of some phenomenon. Or stated differently, a model is a set of abstract statements about a phenomenon of interest that one used to characterize and/or explain essential properties.⁴⁷

The most serious criticism levelled against the transitional theory concerns its predictive power when the model itself claims to be only descriptive. Flieger, in addressing himself to this issue, states :

The main purpose of a theory is to explain and predict. The wider the scope of a theory, the greater the range of actual and possible situations it can encompass.⁴⁸

There are still many barriers to a complete testing of this theory. Prominent among them is the dearth of data for simultaneous consideration of a host of social, cultural and economic variables to entangle the causal relationships that lead to observed growth patterns of a population. Where data are available, there are comparison problems, since few countries conduct their surveys in an identical manner. Therefore, one must be prepared to accept the main tenets of the demographic transitional theory.

4. Applicability of Demographic Transitional Theory

If the theory of demographic transition is accepted for what it is, the next question is its applicability to non-Western countries. Flieger has identified different types of transitions—even for the western world.⁴⁹ Peterson claims that the transition theory provides a correct fit only for industrial countries :

It has become obvious by now that there are more differences than similarities in the population development of, say, nineteenth century England and twentieth century India. Several writers have suggested that among western cultures overseas countries like the U.S. and the British Dominions, whose empty lands were filled in large part by immigrants constitute a special subclass.⁵⁰

A similar caution against widening of the scope of this theory is made by Hauser and Duncan :

Transition theory provides a valuable framework for appraising the population predicament of countries that appear to be on the verge of modernization. However, the influences on population growth that it postulates are closely bound up with the particular historical circumstances of population growth in Western countries. Hence, there is a big question as to whether it can provide more than vague, general suggestions about the factors likely to govern growth in the future. Because the theory is an attempt to generalize from a particular body of historical facts, it raises in perhaps the clearest form the issue of "historicism" i.e., that of whether such generalizations can successfully be applied to new situations.⁵¹

Notestein, taking an optimistic view, concludes that the generality of principles which the theory offers will make it possible to transfer them to experiences outside the west. However, he doubts whether population patterns of the non-western world will assume configurations similar to those in the western hemisphere.⁵²

This same argument has prompted later writers to propose alternative models of the transition process. Clark, a population geographer who appraises the theory of demographic transition, writes :

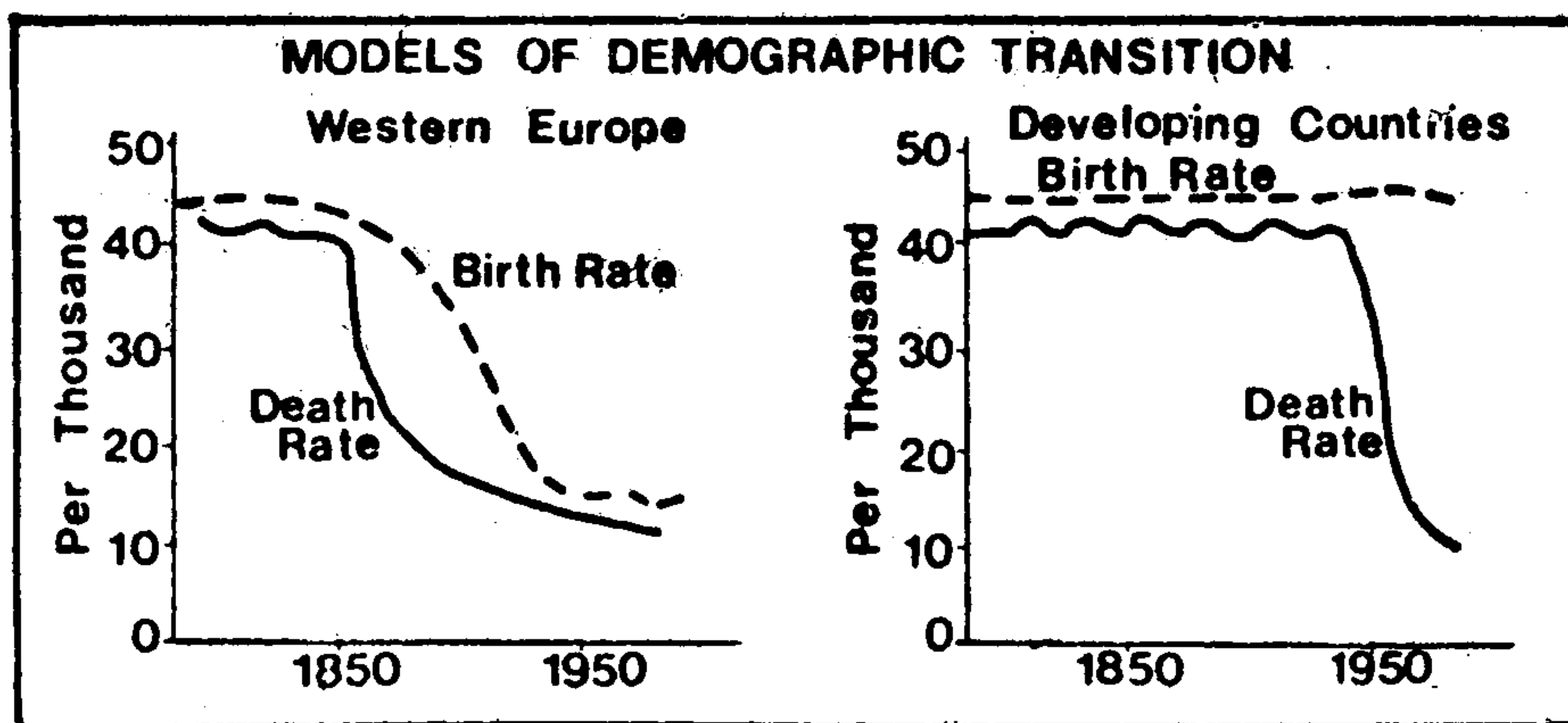


Fig. 1

.....There is no rigid model of population growth, and the model for developing countries differs from that for developed countries. Consequently, the following classification of stages of population growth, which has been commonly used for developed countries, is generally unsuitable for developing countries.⁵³

He postulates two models, one for western Europe, and the other, for developing countries.

Similarly, Sandaratne, in his analysis of recent trends in Sri Lanka's demographic transition states :

It is useful to identify two models of demographic development. The first based on the historical experience of the industrialized European countries, while the second model draws on the experience of most less developed countries.....Both models view demographic development in three stages.⁵⁴

To understand the population growth cycle in the western countries, Thompson correlated population growth with industrialization.⁵⁵ He carried the argument a step further to suggest that all societies will pass through three stages :

- (a) Pre-industrial Phase—Since death control is not yet securely established, this phase is characterized by high death rates and high birth rates, the latter necessary to insure survival. The rate of natural increase may fluctuate widely from year to year.

- (b) Expanding Phase—Death rates have significantly declined to well below that of birth rates and continue to do so at a faster or even pace with the birth rate.
- (c) Stationary Phase—The final phase of the growth cycle with birth and death rates once again at almost identical, but low levels.

On the assertion that industrialization is in the process of becoming a universal phenomena, Thompson concludes that underdeveloped countries, in the course of industrialization will adopt the characteristics of western nations. The population development in Japan is employed to confirm Thompson's hypothesis. Incipient industrialization moved Japan from the pre-industrial phase, with high birth rates and death rates, to the expanding one with a still high birth rate but a falling death rate. This situation necessitated the passing of the Eugenics Protection Law of 1940 which legalized abortion. Most demographers credit the Eugenics Law for Japan's quick transition into the stationary phase—the final phase of the growth cycle with birth and death rates once again at almost identical, but, at low levels.⁵⁶

This non-western experience supports Coale's comments :

The events of the demographic transition provide no sure way of calculating when and how quickly fertility will decline in the less developed nations. The experience of the industrial world is not a satisfactory basis for prediction.⁵⁷

The history of population trends in the west suggests that vital rates normally fall concomitantly as economic development and modernization take place. However, it is difficult to establish a threshold of economic development and modernization at which either population begins to enter the demographic transition or at which point in development process that the transition is eventually made. In view of the diverse cultural, political, social and economic environments of the developing countries it is apparent that different combinations of factors will bring about different timing patterns of demographic transition. Therefore, the important question posed now is not whether these countries will make the transition, but as Freedmen and Berelson state, "the question is : Will population level off because of high death rates or low birth rates?"⁵⁸

5. Sri Lanka's Demographic Experience and the Theory of Demographic Transition

Figure 2 illustrates Sri Lanka's fertility and mortality trends over a 100 year period, extending from 1880 to 1980. This data depicts the first two stages of the demographic transition and the onset of a pre-transitional fertility decline. The first stage—described by earlier theorists as "pre-indus-

**Birth & Death Rates
Sri Lanka
1880 - 1980**

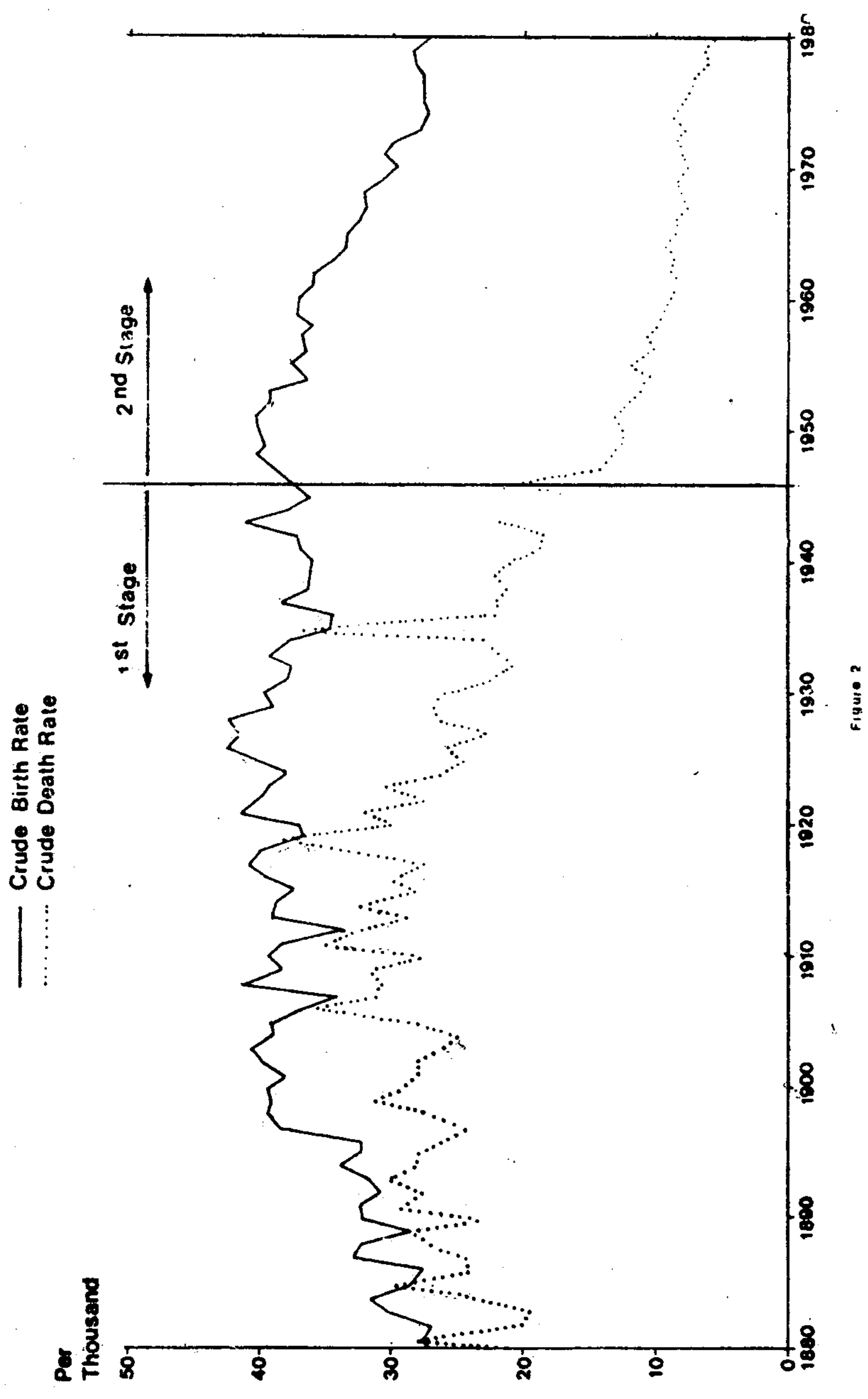


Figure 2

rial," "pre-modern," "stage of high growth potential," etc.—extends in the Sri Lanka case from 1880 to 1946. The "expanding phase" or the "transitional growth phase," which is the second stage of the theory of demographic transition, is assumed to have begun in 1946. At that date, a genuine declining trend in mortality was discernible for the first time. The mortality transition was achieved largely as a result of exogenous technological developments. In the west the mortality transition was a consequence of improvements in economic conditions which reflect an endogenous technological and industrial achievement. However, since 1963, mortality has remained, more or less, stable at eight per 1,000 and fertility has begun to show a declining trend. This trend seem to persist since 1963. Therefore, one could safely declare that Sri Lanka has entered the third phase of the demographic transition—the phase of declining fertility.

If a fertility transition is to eventually occur in Sri Lanka, the emerging trend downward in the birth rate must not be the result of demographic factors. These include a smaller proportion of women in the reproductive period due to a change in the age structure and a smaller proportion of women marrying as a result of postponement of marriages. The observed declines should be "real" declines consequent upon changing attitudes regarding family size norms, changing age at marriage and family limitation within marriage. Research so far carried out in Sri Lanka has explored exhaustively the available data base, namely the 10% fertility sample of the 1971 census, the 1975 Sri Lanka segment of the World Fertility Survey (WFS) and the 1979 survey of Determinants of Fertility Change.

During the phase of declining fertility or the pre-fertility transition period some definite fertility constraints are evident. Rising proportion of unmarried females in the younger age groups coupled with rising age at marriage of females is noteworthy. These variables though self-explanatory, are considered to have definite policy implications. Studies on fertility decline in Sri Lanka have already identified the contribution of these variables *visa-vis* others.⁵⁹ According to an earlier study by the author using 1971 10% fertility sample data, three demographic variables, all related to marriage—age at first marriage, duration of first marriage and marital stability, stood significant at .00 level in two multiple regression models on current and completed fertility.⁶⁰ As Table I reveals, the proportion of never-married females in the younger age groups (15–19, 20–24, 25–29) show definite increase during 1963–1971 and 1971–1981 intercensus periods. In 1981 the proportion of never-married females has increased within all age groups. Celibacy remains more or less constant at a low level of 4 percent since 1963. The increasing trend of never-married females in the lower age groups and increasing proportions in the older age groups is an indicator of rising age at marriage. The singulate mean age at marriage of females between 1963 and 1981 has increased by 2.3. years.⁶¹

TABLE 1
Percent Distribution of Never-Married Females 15-49 by Current Age, 1963-81

Age	1963	1971	1981
15-19	85.0	89.4	89.7
20-24	41.3	53.2	55.3
25-29	17.1	24.6	30.1
30-34	8.3	10.9	16.0
35-39	4.8	5.8	9.2
40-44	4.3	4.7	6.0
45-49	3.9	4.1	4.4

Source : Department of Census and Statistics. The Census Reports of 1963, 1971 and 1981.

Education, economic status, non-primary sector occupations, urban residents are negatively correlated with fertility.⁶² The 10% fertility sample of 1971 census and WFS 1975 have firmly established the negative relationship between fertility and education. A steady decline in the average number of children born to women with higher education attainment is evident in the above data base. Education influences fertility in two ways. First, it raises the living standards by providing the opportunity for better occupation and thus, higher incomes—which in effect is linked to educational attainment. Life style associated with higher living standards are found to be congruous with small family norms. Second, education provides the individuals with the necessary information to regulate their fertility levels.

According to known evidence Sri Lanka cannot yet claim to have a fully contraceptive population. However, she is not far from reaching this stage. The World Fertility Survey 1974, permits the first comprehensive assessment of family planning knowledge, attitude and practices (KAP) in Sri Lanka. In this study knowledge was ascertained at two levels. The first referred to as “without probing” found that 74% of all women had knowledge of some method of pregnancy control. “After probing” this percentage increased to 91%. However, as the WFS reveals, this kind of knowledge means only an orientation to fertility regulation. On the other hand, this information can be used as a useful indicator of Sri Lankan women’s increased awareness of family planning. In any country women aged 25-34 years, and those who have three or more children is the subpopulation for whom family planning is most relevant as a mean to limit family size. The data on expectations indicates that 80% and 91% of these women, respectively want no more children. “Ever Use” of contraception is another aspect closely related to family size, desires and expectations. According to WFS data 43% of women stated “ever-use” of some method. Half of all women between ages 25-44 or women having at least two children report “ever-use” of some method of contraception. However, for Sri Lanka, it is not yet possible to

say that lower fertility has resulted from "ever-use," since we are only speculating on the mechanism behind the differentials for fertility decline in Sri Lanka. It is now possible to say that the expanded Family Planning Programme has made a definite impact on the birth rate since the mid 1970's. Contribution of family planning to averting births was estimated to have been around 10 percent by 1974.⁶³

In Western countries, during the pre-transition stage, women played a major role in traditional activities which did not conflict with maternal duties. During the period of rapid industrialization, modernization and urbanization which paralleled the transitional phase, in these countries more and more women broke away from their traditional domestic circles to enter the labour market. But, in Sri Lanka, female employment is proved to have little bearing on fertility.⁶⁴ However, the existing occupational differentials in fertility has to be noted. The highest level of fertility is observed for traditional agriculture (4.64) and the lowest for clerical occupations (1.86). However, the mean for modern agriculture is less than for traditional agriculture, and it is still as high as twice the mean for clerical occupations.⁶⁵

Pullam's (1980) study based on WFS data examines the women's stated preference for number and sex of children.⁶⁶ According to this study, optimal preference among Sri Lankan couples is for the first child to be a son and the second child a daughter and that it is important to have at least one daughter. Otherwise the preference is for sons. This indicates a dominating preference for a balance. Therefore, the common contention that in the East the preference for boys leads to high fertility is irrelevant in the Sri Lankan context. In conclusion, the findings of existing literature can be summarized as follows : that fertility preferences in Sri Lanka imply a trend towards much smaller families than at present, that there is no pro-natalist orientation of the general population, and that the preferred family size is dramatically less than the average achieved size.

Seeking other explanations, beyond the spectrum of socio-economic and demographic variables so far discussed, some have sought explanation for the fertility transition in ecological, historical and cultural factors. The fact that Sri Lanka is an island and the fact that she was under foreign domination for a couple of centuries and the consequent ethnic and religious diversity have made Sri Lankans more receptive to change and modernization.⁶⁷ Free education and the consequent rising expectations and restrictions on social welfare measures are receiving attention today as possible fertility control mechanisms.

Although many factors are highlighted here as possible determinants of the on-set of a fertility transition in Sri Lanka, the causal mechanism of an eventual transition is yet to be understood. The technique of pathanalysis tried out by the author for the 1971 fertility sample data stands out as a promising method to statistically measure and understand the contribution of each identified variable that has effected a pre-transitional fertility decline in Sri Lanka.⁶⁸ The paucity of data on these identified variables seem to preclude a correct understanding of causal mechanism of fertility decline in Sri Lanka.

However, we may comment on the invariant nature of this trend by examining several indices of fertility at two points in time. Crude birth rate, child-woman ratio, total fertility rate, gross reproduction rate and general fertility rates for 1963 and 1971 are presented in Table 2 along with their percent changes between the two years.

TABLE 2
Changes in Fertility in Sri Lanka Employing Selected Measures of Fertility

<i>Year</i>	<i>Crude Birth Rate</i>	<i>Child- Woman Ratio</i>	<i>General Fertility Rate (15-44)</i>	<i>Total Fertility Rate per 1,000</i>	<i>Gross Reproduction Rate 1,000</i>
1963	34.4	652.9	166.8	5036.5	2460
1970	29.4	477.2	132.7	4221.5	1961
%Change 1963-1970	-14.5	-26.9	-20.4	-16.2	-20.3

Source : Basic Data from Statistical Abstracts and Reports of the Registrar General of Ceylon on Vital Statistics, Sri Lanka, 1963-1970.

Measures of fertility in Table 2 illustrate a distinct declining trend of fertility since 1963. These declines in the order of 15 and above (see Table 2) verify substantially the current fertility trends in Sri Lanka. A 27 percent decline in the child-woman ratio, a commonly used surrogate for current fertility, is especially impressive.

This unmistakable decline is further expedited by the age specific fertility rates for all quinquennial groups. (See Table 3).

The most pronounced declines are seen in the later stages of the fertility cycle. (See Table 3) This is indicative of a deliberate attempt to limit the

TABLE 3
Age Specific Rates, 1963-1978

<i>Age Specific Fertility Rates</i>								
<i>Year</i>	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1963	0.30	59.0	207.0	233.0	245.2	153.4	46.3	6.3
1964	0.31	51.2	226.7	276.1	234.6	154.8	46.6	6.7
1965	0.16	50.0	218.9	269.2	220.7	153.6	41.9	5.9
1966	0.20	47.9	211.9	262.5	214.9	151.9	44.3	6.5
1967	0.19	46.7	209.4	257.9	207.0	145.5	44.1	6.5
1968	0.24	49.2	216.0	255.1	204.8	152.1	44.2	6.5
1969	0.19	46.1	212.0	249.8	190.5	137.9	40.4	6.1
1970	0.20	46.4	204.1	237.0	183.0	129.9	45.0	7.1
1971	0.20	40.0	185.4	233.5	200.2	131.6	39.9	5.6
1972	0.10	39.1	182.2	228.8	203.4	127.9	39.9	5.8
1973	0.10	36.2	170.5	219.2	191.6	114.1	36.2	5.2
1974	0.10	36.7	171.5	216.4	183.2	106.3	33.5	5.0
1975	0.10	37.3	169.9	226.9	184.2	106.7	32.5	5.2
1976	0.10	38.2	172.9	230.7	180.4	97.7	29.3	4.4
1977	0.10	38.4	173.8	234.4	182.4	95.9	29.3	4.1
1978	0.10	40.0	179.9	237.9	187.5	92.4	29.1	4.0

Source : ESCAP, (1976) Population of Sri Lanka. Country Monograph Series No. 4 Table 118. Department of Census and Statistics, (1979) Bulletin on Vital Statistics.

size of the family within marriage. An appreciable decline is evident in the 30-34 age group. Such changes signify the invariant nature of fertility declines in Sri Lanka. Therefore, it is unlikely that even a change in the age structure of the female population, favouring high fertility, would arrest the current trend in fertility. Since fertility decline is taking place against a background of social change and rapid economic development, a reversal of this pattern is highly unlikely.

Accordingly, Sri Lanka has passed through the "early expanding" phase of the second stage of the demographic transition which is characterized by high birth rates and lower and often falling death rates. Sri Lanka can appropriately be described as having reached the phase of declining fertility of the transition model. This phase, which commenced about 1963, has set the stage for the final phase of the eventual transition to low birth and death rates. The crucial question that Sri Lanka faces is not whether the transition will be made, but when and how long the process will take. Therefore, the timing and magnitude and the causal mechanism of the eventual transition are the issues that have yet to be resolved.

Factors leading to the final transition are most controversial within demographic literature. Likewise, variations among nations in attaining this final stage has not been fully explained. Many recognize the need for socio-economic development prior to a successful implementation of a family planning program.

Freedman shows how major changes occurred in the social and economic structures in those countries where population growth was arrested prior to the large scale adoption of family planning methods. He stresses the modernizing factors such as urbanization, adjustments to modern mortality levels, broader social networks transcending local communities and group interest in the event of natality transition. He attributes the failure of family planning programs in the developing countries today to the lack of modernizing factors, which, according to him, are necessary preconditions to widespread acceptance of contraceptive technologies.⁶⁹

On the other hand, Philip Hauser, a noted demographer, is rather sceptical of the possibilities of family planning programs to solve the population problems facing mankind today. Hauser, who makes a distinction among "conception control"⁷⁰ "fertility control"⁷¹ and "population control"⁷² comments :

The family planning movement, certainly on the basis of its stated objectives and what it does, is restricted to the control of conception and does not aim at either birth control or population control.....⁷³

He casts doubt on the possibilities of family planning programs, as conducted at present, to bring about major reductions of population growth rates during the remainder of this century. His conclusions are based on these considerations:

1. The world has yet to witness a family planning program which initiated a decline in fertility in a "traditional society," characterized by mass illiteracy and poverty.
2. The example of successful family planning programs to date (e.g. Taiwan, Hong Kong, Singapore, South Korea) are in areas in which fertility declines had already set in before the advent of national family planning policies and programs; and which have rising levels of education and income per capita, so as to preclude the extension of their experience to populations still steeped in illiteracy and poverty.⁷⁴

Hauser suggests an alternative to the present simplistic family planning approaches to population control. This alternative is concerned mainly with ecological, social, psychological and cultural factors. He calls the latter approach "non-family planning methods of population control." Hauser stated previously that :

.....fertility behavior is in large measure dependent upon the social milieu, and that changes in fertility behavior necessarily involves social change. Or to put it in another way, knowledge of the persons'

attitude, values and motivations cannot be expected to account for differences in fertility behavior out of their cultural context; and consequently changes in fertility behavior cannot be produced through efforts to change attitudes, values and motivations, except in the context of changes in the social order.⁷⁵

Kingsley Davis, who takes a similar approach to population control, states :

Widely acclaimed family planning programs in Taiwan, may, at most have somewhat speeded the latter phase of fertility decline which would have occurred anyway because of modernization.⁷⁶

He makes a strong plea for appropriate socio-economic policies as a prerequisite for rendering family planning attractive. He accepts contraception as a useful technological device, but he contends that it would have limited use without supporting socio-economic policies.

Leading demographers in the United States point toward the urgent need for social change and economic modernization as a prelude to population control via family planning. However, we must recognize the value of family planning for other purposes, such as, freeing women from the need to have more children than they want to have, and teaching women how to space their children. Non-family planning method of population control is not an argument directed against family planning programs as such, but against the assumption that they are an effective means of controlling population growth.

In Sri Lanka, such modernizing factors as urbanization, increasing education levels, decreasing illiteracy, decreasing mortality and restraints on the family size are readily apparent. Coupled with these factors, are economic hardships, such as, increasing food prices, clothing, housing and other consumer goods. These seem particularly conducive to deliberate lowering of the birth rate by the individuals who are forced to make rational decisions about their family sizes. High participation rates of women in the labour force—to offset inadequacy of household incomes under worldwide inflation and a great deal of unemployment and economic insecurity—can be expected to promote postponement of marriage and small family norms. Accordingly, current fertility declines might continue undisturbed in Sri Lanka. However, reproduction in Sri Lanka is being controlled more according to the desires of the individual couple rather than the desires of the community. Few case studies on fertility in Sri Lanka have placed the desired family size at 3.5. The rational figure in the light of a couple's situation is irrational from the standpoint of society's goals. There is a societal need to regulate individual behavior in order to initiate a collective determination of society's birth rate.

Consequently, upon, retrospective analysis of the long-term trends in population changes, we have developed the following hypothesis to explain how Sri Lanka will eventually make the demographic transition from high fertility and mortality levels to a low and stable fertility and mortality level.

Exogenous technological development contributed to overcome, rapidly and successfully, Sri Lanka's long struggle towards mortality transition. But the rather belated fertility transition cannot be realized with the help of exogenous technological developments. Sri Lanka, mainly an agricultural society, where it is generally believed that children are of net economic benefit to their parents, cannot draw much from the demographic experience of the west or from Japan, where urbanization and industrialization were the primary vehicles in the transformation of traditional high fertility values to modern low fertility values. If Sri Lanka is to make the fertility transition from high growth rates to low and stable growth rates, she must emphasize agricultural modernization and rural development schemes. The bulk of Sri Lanka's population resides in rural environments. Agriculture is the primary occupation. This does not mean that industrialization and urbanization are unimportant in fertility transition. Rather, it only indicates the irrelevance of a total dependence on the Western experience to reach a set of goals that would lead to population control.

Sri Lanka's overall plan to modernize as a prelude to an eventual fertility transition, must be accomplished in such a way as to create a new social structure which can carry the imprint of a unique set of traditional goals and values. After all, a country with a rich and an ancient cultural heritage cannot be severed from that heritage overnight. The minor impact of family planning programmes, introduced to the island as early as 1937, is perhaps the outcome of the failure of that programme to incorporate cultural factors. Eventually, to make the rather belated fertility transition, Sri Lanka seems to depend as much on economic development as on population control. The former seems to be an essential prerequisite for the accomplishment of the latter. The accelerating rate of population growth must be checked without further delay—at least in the interest of rapid economic development which would lead to a self-sustained low fertility level.

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