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TOWARD A PARADIGM OF FERTILITY
VARIATION AND REGULATION

Johannes Bartlema

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I. A PARADIGMA *

The interpretation of the sociology of fertility adhered to will be Hawthorne's: "the study of the social determinants of human fertility". There is, admittedly, an element of arbitrariness in this definition, since it isolates a particular one-way chain of causality from a network of mutually interacting inter-relationships between social-economic, cultural and demographic variables. Our justification to do so (which is merely a supplement to the argumentation in favor of such a limited definition given by Hawthorne and Freedman) is primarily pragmatic; it is not only changes in fertility we are interested in but also ways to change it.^{1/}

^{1/} Geoffrey Hawthorne: "The Sociology of Fertility", Collier McMillan Ltd. 1970, Preface; Ronald Freedman in "Social Demography"; Thomas R. Ford and Gordon F. de Jong, eds., Prentice Hall 1970, pp. 44-57.

*

The viewpoint of applied science will be adopted in search of (manipulable) determinants of fertility in order to contribute towards a theory of fertility regulation within which policy formulation can be carried out systematically. Hardly manipulable determinants of fertility behavior such as Innate Factors, Psycho-analytic Factors or Family of Origin, will be disregarded.

A number of conceptual schemes for the explanation of fertility variation exist^{2/} and though such frameworks might serve as alternative paradigmas for theories of fertility change they are not useful as a guide to changing fertility, due to their complexity and the ambiguity of the classifications employed.

This paper is an attempt to survey the sociology of fertility in search of elements which may serve as constituents of a paradigm of fertility regulation and to lay down such a paradigm.

II. EXPLANATION OF FERTILITY VARIATION

It has become common practice within the sociology of fertility to take account of Davis and Blake's intermediate variables in any exhaustive treatment of the causation of fertility variation. The intermediate variables may be briefly summarized as follows:^{3/} (Table 1)

^{2/} See for a summary of such schemes: James T. Fawcett: "Psicología y Población", una publicación extraordinaria del Consejo de Población, 1974, New York, many authors such as Conning (1975) and Lira (1976) develop their own basic explanatory framework.

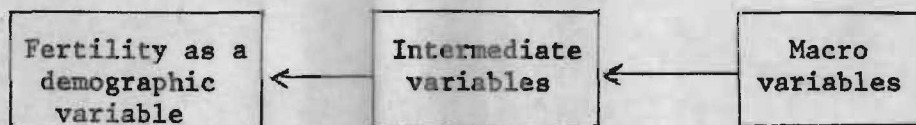
^{3/} Kingsley Davis and Judith Blake: "Social Structure and Fertility, An Analytical Framework: in Charles B. Nam: "Population and Society, A Textbook of Readings", Boston, Houghton Mifflin, 1968. The concise version is adopted from Arthur M. Conning, CELADE, June 1975, Santiago, Chile.

Table 1

- I. Nuptiality Variables
 - 1) age of entry into unions
 - 2) permanent celibacy
 - 3) divorce, separation, etc.
- II. Within Union Variables
 - A. Bio-social Variables
 -
 - 4) Involuntary abstinence
 - 5) Involuntary infecundity
 - 6) Involuntary abortion
 - 7) Coital frequency a/
 - B. Deliberate Control
 -
 - 8) Voluntary abstinence
 - 9) Voluntary sterilization
 - 10) The use of contraceptives
 - 11) Induces abortion

a/ Coital frequency, if used for control would be placed in the "deliberate control" category.

In broad outline, determinants of societal fertility were assumed to fit the following model:

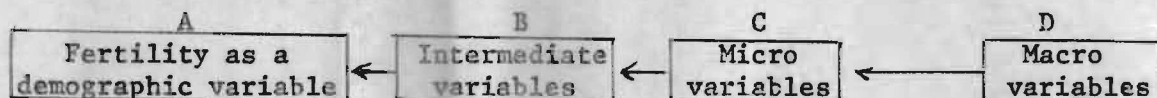


It has, however, ^(should) come to be realized that the micro level of perceptions within the kinship group [↓] also be taken up in the paradigm for any explanation of fertility to be complete, since there is no possible manner for societal fertility variation to occur without a corresponding change in motivation and behavior at the micro level.^{4/}

^{4/} See, for example, point 28 of the "Report of the Symposium on Population and the Family", Honolulu, 6-15 August, 1973.

It is not, for example, a macro variable such as growth of national product per se, which is of interest in seeking determinants of fertility variation, but rather the perception of the decision-making unit in the family as to economic prospects for their household and for society as a whole. Neither is a change in values of intermediate variables by itself sufficient to bring about a change in societal fertility, as long as the average couple does not undergo a change in reproductive motivation.^{5/}

The basic paradigm takes the following form:



Although neither of the levels B or C may be omitted, their order is reversible in the chain of causation; that is, macro variables might influence intermediate variables and thereby alter the alternatives for the micro-level (e.g. new technology brings new contraceptives on the market which make birth control in the family unit more effective~~ly~~) or they might affect the kinship unit first, which causes a shift in the intermediate variables (e.g., economic prospects lead heads of families to decide they can afford a fourth child, which causes a decrease in the use of contraceptives).

It is essential for this paper to agree upon the necessity of this new element in the causal sequence of any variation in societal fertility. There is no way of doing without the decision making process in kinship units leading to an alteration of reproductive behavior within these units or a shift in age of entry into unions, if there is to be any change in societal fertility. And no explanation of fertility variation which disregards the microlevel can be complete: it only gives part of the explanation.

Taking group processes and decisionmaking within the family into account does not imply postulating individual rationality~~y~~ with regard to reproductive target-setting and behavior. A great deal of emphasis should to the contrary, be placed upon cultural factors determining norms for family size, age at marriage, acceptability of contraception, etc., to such an extent that many

^{5/} Extreme change in particular intermediate variables or changes in all the intermediate variables in the same (anti-or pronatalistic) direction of course would necessarily affect fertility, but a change in the micro level would also be implied.

decisions might better be called "non-decisions" since the behavior is regulated so uniformly that it appears completely self-evident and is carried out non-thinkingly. Neither are we denying that demographic or biological factors may affect family levels independent of explicit decisions, but we are sustaining that any major and more or less stable alteration of societal fertility patterns beyond short-term fluctuations reflects a response by ("rational") individuals or ("functional") culture to changed circumstances. Whether those family decisions are the result of conscious economic reasoning or uncritical compliance with cultural norms is irrelevant: the point is that people are deciding to marry at another age or to behave differently within marriage, and any attempt to change fertility levels must work through such family processes.

The implications of this addendum, however, obvious it may seem, are less self-evident, since it leads to the viewpoint that exclusive emphasis on a change in the complex of intermediate variables with neglect of the micro level, does not necessarily affect the societal fertility level. This boils down to a theoretical standpoint in the debate on the theme of the possibility of fertility variation (and regulation) by the mere introduction of contraceptives (or by family planning programs) independent of or preceding changes in the institutional structure of society^{6/}. If our reasoning has been correct, any change in societal fertility necessarily implies a change in the decisions taken within familial institutions, for which there must be certain reasons. That is to say, there must be a change in circumstances for the familial institutions leading to an adaptation by altering reproductive targets. Changes for and within the familial institutions of society are a necessary condition for changes in societal fertility. Fertility variation takes place in response to structural change of society affecting the institutions which constitute its fabric, and this response is formulated and carried out in a central institution: the kinship unit. Similarly, fertility differentials within a given society testify to the structural heterogeneity of such society.^{7/}

6/ A recent empirical contribution to this discussion may be found in Judith Blake and Prithwis Das Gupta: "Reproductive Motivation Versus Technology: Is recent American Experience an Exception?" in "Population and Development Review", Vol. 1, N° 2, Dec. 1975.

7/ Similar theoretical conclusions are reached by Germán Correa from a structural historical line of thought in "Estrategias de desarrollo, poder y población", PISPAL, Santiago, Chile, May 1975.

If we interpret a family planning policy as a policy intended to affect the intermediate variables, and if we interpret a family policy as a policy intended to affect the microlevel, we may state that a policy of fertility regulation should include both. A central theme in the following pages will be to maintain in accordance with the statement of Bucharest that a comprehensive policy of fertility regulation implies the integration of fertility considerations into the various branches of policy composing the total national development policy and to provide a theoretical framework within which the formulation of such an integrated policy may take place.

III. THE MICRO LEVEL: KINSHIP

Since it is our intention to develop a paradigm for an applied sociology of fertility, that is a framework within which any complete explanation of fertility must take place, we must agree upon a trans-culturally valid concept of Kinship. Whatever we have to say about the mechanisms which cause the micro-level to alter its reproductive behaviour, must be cast in universal terms: terms which apply for every conceivable human kinship structure.

In attempting to find mechanisms fitting Davis and Elake's intermediate variables in level of abstraction, let us follow their lead and try to base our analysis on biological premises. This is no novelty, since kinship has often been regarded as a socio-cultural structuring of biologically given facts within the field of cultural anthropology.^{8/} Interpreting kinship as a social superstructure on a biological basis opens the possibility of reducing relationships within kinship structures to biologically given, and thus universal, basic elements.

It was R.N. Adams who dissected kinship into elementary dyads: "There is the relationship based on coitus between a man and a woman, which may be identified as the sexual dyad ... There is second, the maternal dyad composed of mother and child ... and third there is the paternal dyad between father and child ...".^{9/} Adams himself takes only the sexual and the maternal dyads as

^{8/} A number of quotations to that effect are for example collected by David Schneider (and criticized) in D.M. Schneider: "Kinship and Biology" in Marion Levy c.s. : "Aspects of the Analysis of Family Structure", Princeton University Press, 1965.

^{9/} R.N. Adams: "The Nature of the Family" in "kinship", Jack Goody, ed., Penguin, 1971.

irreducible units, fundamental "atoms" of human kin organization and excludes the paternal dyad from universal status on the grounds that it does not exist by virtue of a biological correlate but because of a specific relation towards the mother. He describes two cases of matrifocal kinship organization in which the father role is not incorporated stably and which, in effect, appears to function without it.

I am personally not convinced of the dispensability of the "pater" figure (besides the "genitor")^{10/}, since there are ample reasons to believe that the presence of a male role model during certain critical periods of childhood_u is a prerequisite for successful sex-role differentiation of the offspring.

Moreover, that there is no directly observable biological link between a pater and the child, does not exclude the possibility that the fulfillment of what Malinowski has called "the sociological role of father" is a necessity rooted in a biological predisposition of mankind.

Schelsky has reasoned that primary human needs are undifferentiated and plastic and therefore require societal normation and stabilization to guarantee biological effectiveness. That is to say, that man is a cultural creature by biological predisposition. Due to the absence of coercive instinctual impulses, the development of human sexuality in such a manner as to warrant proper functioning, specifically requires cultural regulation.^{11/}

^{10/} As far as the distinction between pater and genitor is concerned, Lienhardt treats it as follows: "In writing of patrilineal societies and following Fustel de Coulanges, anthropologists have used terms borrowed from Roman Law, to make a very necessary distinction between the man who is socially and legally responsible for a wife's children and the man who actually begat them. The legal father is the pater and socially recognized guardian and the biological father, the begetter is the genitor". Geoffrey Lienhardt, Social Anthropology, Oxford University Press, 1964, p. 95.

^{11/} Prof. Dr. H. Schelsky "De Sociologie der Sexualiteit", Born, Assen, 1957 (original German edition 1955). Steven Polgar, using similar arguments as Schelsky reaches comparable, though less explicit, conclusions to which he adds that "the involvement of the human male in "parentalism" is not biologically determined and thus the degree of involvement in the socialization of children of the father (as well as of relatives other than parents) is highly variable". Steven Polgar: "Cultural Development Population and the Family" paper delivered at the Symposium on Pop. and the Family Honolulu, 6-15 Aug. 1973. This is a more articulated view than the perspective adopted by Adams.

If then, enculturation is a biologically determined prerequisite for the fulfillment of biological functions, we may conclude that a male role model, which is essential for successful enculturation, also is universal and is so by biological necessity.

There appear then to be four elemental dyadic relationships of which all possible forms of kin organization are composed: the mother-genitor dyad, the mother-pater dyad, the mother-child dyad and the pater-child dyad. The latter two may be grouped under the heading of the "parent-child" relationship. Within the mother-child and pater-child relations, it is not logically necessary that the role of parent be fulfilled by one person only, nor is it empirically always so.

Although socio-cultural influences may be so strong as to replace the above-mentioned biologically-rooted links, such as in the case of adoption, in general existing biological ties are strengthened and molded to fit the requirements of a specific societal context. The biological ties are not merely reinforced by cultural normation, but shaped into relationships of a culturally specific nature. What motherhood, fatherhood, married state or childhood actually means, depends on the culture in which it takes place.

We shall henceforth deal with kinship as a social concept, as a creation of society and leave the biological aspects for what they are. A kin group is an arrangement of persons that may serve the attainment of various sanctioned social and personal ends, but performs at least the following functions, corresponding with abovementioned elementary dyads:

- 1) Regulation of such sexual behaviour which is intended to lead to pro-creation
- 2) Reproduction
- 3) At least some aspects of child socialization

The only function it fulfills exclusively is reproduction; the functions associated with sexuality and socialization may be shared with other

institutions.^{12/}

Kinship, stripped to the bare essentials, thus consists of mother-pater, mother-genitor and parent-child relationships. Any explanation of reproductive behaviour, couched in terms of changes, that make themselves felt in these particular universal relations, may claim applicability to any kinship structure.

III.1. Parent-Child Relationship

It has recently been en vogue within the sociology of fertility to seek explanations of fertility in terms of the utility of the child to its parents. A change in the balance between costs and benefits of the child for its parents would result in a change in their desired family size and, accordingly, in a change in reproductive behaviour.

The most elaborate and sophisticated of such reasonings have been accumulating in the field of micro-economic theories of fertility around the persons of Gary Becker, Harvey Leibenstein^{13/} and Richard Easterlin^{14/}. Relevant theoretical and methodological material of a slightly different nature has been provided by Kenneth Terhune and Sol Kaufman as well as Fawcett c.s. ^{15/}

^{12/} Conceiving the concept of kinship as a complex of basic relations, which fulfill certain elementary functions, does not necessarily imply that these relations are represented simultaneously in a stable group of any form. The sexual dyad, for example, may be segregated from the parent-child and mother-pater relationships. We shall however assume that the woman in the mother-genitor and the mother-child relationships is the same person.

^{13/} Hawthorne op. cit. summarizes the views of these authors; a more thorough discussion of Becker's approach is to be found in: Boone A. Turchi: "Micro-Economic Theories of Fertility: A Critique", Social Forces, Sept. 1975, Vol. 54(1). Judith Blake also expresses herself in terms of the utility of the child, introducing the term "opportunity costs" (adopted from economic theory of consumer behavior) we shall use the term comparison-level-for-alternatives, to explain such mechanisms as we shall see. (See for example: Judith Blake: "Reproductive Motivation and Population Policy" (1971) in E. Pohlman (ed) "Population, a clash of Prophets", Mentor Book, Signet, New American Library, 1973.

^{14/} Richard A. Easterlin: "The Modernization of Family Reproductive Behavior". Paper delivered at the Symposium on Population and the Family, Honolulu, Aug. 1973.

^{15/} Kenneth Terhune and Sol Kaufman; "The Family Size Utility Function", Demography, Vol. 10, N°4, Nov. 1973. See for a brief theoretical overview of approaches similar to the one developed here: J.T. Fawcett and F.S. Arnold. "The Value of children: theory and method", East-West Center, Honolulu (1973, Reprint N° 35.)

We shall proceed by proposing a synthesis of such studies based on fundamental psychological mechanisms involved in deciding whether or not to have another child. Thibaut and Kelly's perspective of group processes, applied to our problem, offers a theoretical model which integrates all relevant issues.^{16/}

It should be stated beforehand that this theoretical analysis of the factors determining the value of the child to its parents may in principle be substituted by any other framework (such as those developed by Hoffman and Hoffman or Easterlin) if considered more useful.

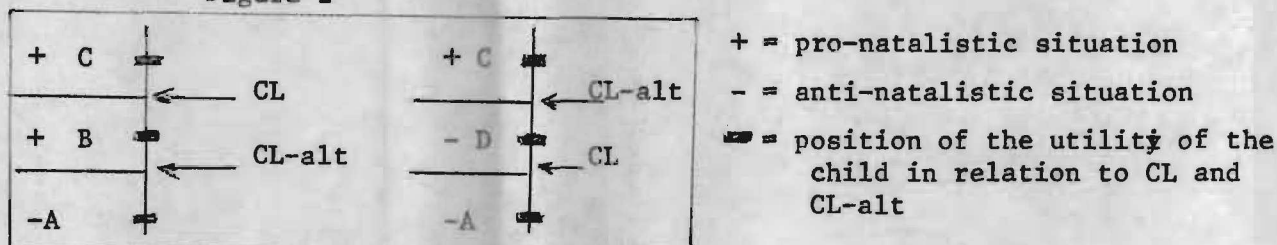
III.1.1 Analysis and Concepts used in determining the Utility of the Child

1. In speaking of the "parent-child relation", we refer to the relation between parents with n children and a child of birth order $n+1$.
 2. We define the "utility" of the parent-child relation to the parent as the balance of the perceived (economic and non-economic) benefits and costs attached to the relation.
 3. The "benefits" of children refer to the functions they serve for parents, or the needs they fulfill. Costs refer to what must be lost and/or sacrificed to obtain a value in a particular way, in our case by having the child.^{17/}
 4. We define the "comparison-level" (CL) as the average utility-value attained from all relations with the external world: it is the standard by which the "attractiveness" of the parent-child relation is measured.
 5. We define the "comparison-level for alternatives" (CL-alt) as the most favourable utility-value obtainable from accesible alternatives to the parent-child relation.
 6. The CL may be higher than the CL-alt or vice versa
- On the basis of these postulates, it is possible to set up an exhaustive classification of anti-natalistic or pro-natalistic situations within the parent-child relationship (Fig. I).

^{16/} John W. Thibaut and Harold H. Kelley: "The Social Psychology of Groups", John Wiley and Sons, 1969-p.1-31.

^{17/} Definitions under point 3 adopted from Louis W. Hoffman: "A Psychological Perspective on the value of children to Parents: Concepts and Measures in James T. Fawcett (ed.) "The Satisfactions and Costs of Children: Theories, Concepts, Methods", East-West Center, Honolulu, Hawaii, December 1972.

Figure I



- A: If the expected utility of having the next child lies beneath the CL and the CL-alt, it will not be desired (anti-natalistic situation).
- B: If the expected utility of having the next child lies below the CL but above the CL-alt, it will be desired (pro-natalistic situation).
- C: If the expected utility of having the next child lies above the CL and the CL-alt, it will be desired (pro-natalistic situation).
- D: If the expected utility of having the next child lies above CL but below CL-alt, the alternative will be preferred and the child will not be desired (anti-natalistic situation).

If our classification of pro-natalistic and anti-natalistic situations in the kinship unit is indeed exhaustive and exclusive, we may conclude that fertility regulation is possible through raising or lowering the utility of the child to the parent.

- This can be done by:
- 1 / Raising or lowering the costs of the child;
 - 2 / raising or lowering the benefits of the child;
 - 3 / raising or lowering CL-alt;
 - 4 / raising or lowering CL

Since our main objective is to systematize approaches to lower the birthrate, we shall briefly exemplify possible strategies of fertility reduction as illustrations of these mechanisms. All examples are realistic: they are being carried out in various parts of the world.^{18/}

^{18/} Except for those mentioned under III.1.5.A.

III.1.2. Fertility Reduction by raising the costs of the child

- A. Raising the non-economic costs of the child might be affected by making parents aware of the possible negative consequences of large family size for themselves and the country as a whole. Communication strategies propagating the small family as a happy family or family planning as a patriotic duty fall into this category. Population education may also create an awareness of the macro consequences of combined private actions with respect to family formation.
- B. Raising the economic costs of the child could for example be planned by compulsory education laws making the child dependent on its parents for a longer period of time and depriving parents of the child's contribution to the family income. Modifications of family policies intended to compensate parents for the costs of living of their children, by limiting the number of children that the government will support in one family and other legislative measures might be considered under this heading.

III.1.3 Fertility Reduction by Lowering the Benefits of the Child

- A. Reducing the economic benefits of the child could be carried out by a measure complementary to compulsory education: the introduction of restrictions on child labour. Although such a twin set of measures would undoubtedly lower the utility of the child for its parents, it is obvious that their execution is difficult in less developed areas and that it would be difficult to enforce such laws. Seeking ways to prevent children from fulfilling traditional functions, is of course only reasonable if alternative institutions have been created to fulfill such functions.
- B. Reducing the non-economic benefits of the child might be attempted by executing an influence on cultural elements enhancing the value of having children. ^{For example, a} less "mother-oriented" socialization of girls and a less rigid role segregation in general seem advisable

in this perspective in western societies. Socialization practices of a given society are determined to a certain extent by their socio-economic and political structures,^{19/} thereby singling out different characteristics as constituents of the male and female role in different societies. Deliberately influencing the "contents" of sex roles seems preferable to letting such roles adjust themselves to changed structural conditions by trial and error. In developing countries there are various cultural elements favouring high fertility such as the hindu requirement of a son to carry out certain religious ceremonies or the central american "machismo". Pohlman^{20/} discusses a wide variety of culturally determined "advantages" of having children. An organized attack upon such cultural rudiments of a formerly functional value system would reduce the non-economic benefits of the child.

III.1.4 Fertility reduction by raising CL-alt

A. Raising economic CL-alt implies the translocation of the economic functions of the kinship unit to other societal institutions. Dissolution of the family as a production-unit is an element in the structural differentiation of the kinship institution, a process resulting in functional specialization of family roles. Alternative institutions arise, taking over some of the family's functions; educational systems, social security laws, banks (providing credit), insurance companies, etc. This process has been considered a necessary condition for fertility ~~reduction~~^{decline} ^{21/} and it is also evident that such developments are crucial within our explanatory framework since a low CL-alt precludes an anti-natalistic situation; only if the utility of the child is above CL-alt can an anti-natalistic situation occur.

^{19/} See for example: Alex Inkeles: Society, Social Structure and Child Socialization, in J.A. Clausen (ed) "Socialization and Society", Little Brown and Co., Boston 1968. Schelsky also dedicates a paragraph of his book to the subject (op. cit). The statement is furthermore obviously in agreement with historical structural ^{and} reasoning.

marxistic

^{20/} Edward Pohlman: "The Psychology of Birth Planning", Schenkman Publishing Co. Incl, Cambridge, Massachusetts, 1969.

^{21/} Among others by Freedman (op. cit) and Goldscheider, Calvin: "Population Modernization and Social Structure", Little Brown & Co. Boston, 1971.

The policy implications are that the development process should be coordinated in such a fashion that the CL-alt does rise, for example seeking measures which attain a certain social or economic goal but synchronously affect the CL-alt. If, for example, policies of integration of adult females in the economically active population are planned, occupational opportunities should be created which are incompatible with a large number of offspring.

An increase in the level of CL-alt can, thus, be accomplished by structuring the availability of attractive social items in such a manner that they are not attainable with large family size, thereby confronting the parents with a choice between either a large number of children or these items. It seems plausible that "items" such as social security benefits, social mobility or housing facilities are viable to such manipulation.

- B. Raising the Non-Economic CL-alt. The kin group in traditional society fulfills many functions besides economic functions. Indeed, it has been suggested that traditional society is "kinship dominated" and a decline in such dominance may be considered a prerequisite or at least a correlate of fertility decline.

The kinship unit in contemporary societies, developing and developed alike, maintains important non-economic functions and stimulation of alternative need-fulfillment is relevant as a strategy of fertility reduction in the traditional as well as the modern context. Changes from ascribed to achieved status, opening alternative channels to social mobility than having a powerful family; changes in the "feminine role" institutionalizing legitimate alternatives of self-fulfillment to childbearing and childrearing; "collectivization" of housework and childrearing, the introduction of "pre-kindergartens, etc. might be considered as strategies to raise the non-economic CL-alt.^{22/}

^{22/} We note that a more egalitarian position of the woman in society, although worthwhile in itself, does not automatically lead to a decline in the utility of a child. It does so, if a rise in CL-alt is involved. In our situation D, for example, providing child-care facilities to encourage female employment might "have the adverse effect of enabling working women to have the larger families they always wanted, but the strain of the two roles had prevented before". It should be carefully considered whether the measure proposed does indeed lead to a rise in CL-alt. An integration of social policy for the amelioration of the position of woman in society with population policy would thus entail giving priority to measures that serve both objectives. Measures which improve the position of the woman by giving her attractive alternatives to motherhood and housework do so.

III.1.5 Fertility reduction by raising the comparison level

A. Raising the ECONOMIC CL. The CL is the result of all utilities experienced in relations with the external world, a kind of "indifference zone", determined by what one is accustomed to. As far as the economic aspect of CL is concerned, the "standard of living" is a similar kind of "average-value". An item, the value of which lies above the standard of living is desirable, as a relation is attractive if it provides utilities above CL. The standard of living is an important ingredient in CL. A rise in the standard of living has been hypothesized by various authors^{23/} to result in temporary increase and thereafter in a decline of fertility. Such a fluctuation in fertility is what we could expect since an increase in the standard of living is initially an increase in the available resources which might be expended on additional children in the "potentially pro-natalistic" families of our situation D; but as more favorable utilities are also obtained from other relations with the external world, the CL which is an average, goes up. As one gets more accustomed to being better off and has the child, that one has always wanted, but could never afford, the utility of the child declines relative to the rising CL and may even decline in absolute terms (due to mechanisms postulated by Heer for example), thereby reaching a lower level than it had before the change in the standard of living.

The result is a rise in fertility and thereafter a decline.

If there are indeed such mechanisms at work in the rises in fertility which sometimes accompany early modernization,^{24/} a way of "skipping" the fertility hump and proceeding with the decline, would be to ensure that the CL-alt remains high or goes up, thereby attracting the increase in resources to other "items"^{ew} than children and leaving the "potential" for children unrealized.

^{23/} David M. Heer: "Economic Development and Fertility" in "Social Demography" Thomas R. Ford and Gordon F. de Jong (eds.), Prentice Hall, 70, p. 273-293. Leibenstein's Work (1957) as discussed in Hawthorne, op. cit. p. 71 etc. Easterlin also theorized about the causes of the ^{phenomenon} (op. cit.).

^{24/} Davis refers to this phenomenon in his oft-quoted article "Will Current Family Planning Programs Succeed?".

We must realize that raising CL is difficult by definition since it is an "average" (though a weighted one) and raising it implies changing a large number of salient relations which parents entertain with their world. This element seems to be the least manipulable of the variables determining the utility of the child but policies for improvement of the standard of living are essentially identical with development policies being carried out the world over.

- B. Raising the NON-ECONOMIC CL. An important non-economic aspect of the parents' CL is their health condition. The general "state of physical", mental and social well-being" of the parents will colour all relations with the external world equally, thereby leaving the utility level of the child unaffected. An aspect of health care which would, however, affect this utility, by raising CL, is Mother and Child Health (MCH), which focuses on issues relevant to the child's utility (on "salient" issues that is), leaving other aspects of health care unaffected.

In situations prevailing in many developing countries, where frequent pregnancies affect maternal health and frequent infant and child mortality constantly thin out recent birth cohorts, we may expect an improvement of MCH to have a number of mutually reinforcing effects, of biological and soci-psychological nature. We would only expect a fertility decline to occur where the socio-cultural reaction to the improved health situation leads to a rise in CL, that is to a change in the criteria with which the "value" of a child is measured. An increase in the confidence of keeping a child alive, which makes the next child less urgently required, would entail a decline in the utility of the next child and would thus lead to fertility reduction (provided the decision to avoid that birth is effectively reached and carried out). Such processes would take some time to gain cultural acceptance (though the "lag" might be reduced by an effective communication strategy) and the first effect of an improvement of the health situation would be expected (and has been demonstrated) to be an increase in fertility due to the outcome of biological processes.^{25/}

^{25/} See for example: Samuel H. Preston: "Health Programs and Population Growth" in "Population and Development Review", Dec. 1975, Vol. I, N° 2; and Shea Rutstein and Vilma Medina: "The Effects of Infant and Child Mortality on Fertility in Latin America", CELADE, abril 1975, Santiago, Chile.

If our reasoning has been correct an MCH program would eventually contribute to a decline in the utility of the child and such health policy measures could also profitably be included in an integrated social-population-policy. This is something which needs no advocating since there is some degree of integration of family planning with health services in all existing family planning programs. Family planning organizations often reside under the Ministry of Health; where this is not the case, there is close operation. It should, however, be realized that though modern medical technology and public health policies may reduce infant and child mortality at a much faster rate than has been the case in the West, the decline levels off at a rather high level, which cannot be further reduced without improvements in the standard of living.

III.2. THE MOTHER-FATHER DYAD

We have interpreted kinship as a complex of relations and thus far have directed our attention to one of these relationships, notably that between parent and child. For a change in the utility of the child to have any effect upon the fertility level, the decision to alter reproductive behavior and/or age of entry into union must be made in the kinship units of society. The question at hand is: how does such a decisionmaking process evolve, what are the pre-requisites for such a decision to be reached and of course, what can we do to improve the effectiveness of the decision-making unit in this regard? We shall discuss the pre-requisites for an efficient execution of this decision, which takes place in the sexual dyad under that heading. It is important to realize that such factors become increasingly important for effective birth prevention in industrialized societies, where the utility of the child has declined to a moderate or low level.

With the decline of mortality, often accompanied by a reduction of the average age at marriage, the span of life spent in the reproductive

period expands, while the desired family size decreases. We may estimate that, in a contemporary industrialized society about half of the women in the reproductive period are at risk of becoming pregnant, while they do not intend to have any more children.^{26/} An average age of completed family size of 30 is a reasonable estimate, while menopause may be expected around the 45th year of age. Therefore, highly effective birth control is to be practiced by couples during a large number of years, covering about half of the reproductive period of the woman, if they are to limit their family to desired size. It appears to be worthwhile to investigate which factors promote adequate adaptation to such an anti-natalistic situation.

The decision-making unit as to having the next child or not, has been documented to include people with differing relationships to the pater(s) and mater(s) in question. The mother of one of the parents is often consulted on such occasions, as are other female members of the family, the doctor and possibly neighbours and friends, but the male and female members of society who are to be responsible for the child, always take part in the decision, albeit that one party may have a larger say in the matter than the other. The decision-unit may thus be composed of various people but always includes the mater-pater dyad.

The decision about the age at marriage takes place outside the reproductive unions and is taken by the spouses - to - be or other family members. Although there are historical examples of fertility decline due to a rise in age at marriage, upon fertility have been calculated and discussed in detail, we shall limit our discussion to reproductive decision-making within unions and leave the decision-making as to the age of entry into unions out of the picture.

In principle an analogous line of reasoning to that referring to reproductive decision-making is applicable: changes in the utility of the child affect the age at which marriage can be contracted and reproduction may follow. For example the position of female migrants in developing countries who aspire employment as domestic servants, which is incompatible with married life (and

^{26/} Ryder and Westoff (1965) found that 68 percent of their respondents "neither intend nor expect to have any more children"; Faberij (1974) calculates that about half of the Dutch women in the reproductive period are in such a situation.

and the effects of a possible rise in age at marriage

having children) may be conceptualized as an anti-natalistic situation due to the high level of CL-alt (D in our classification).

At the societal level we may expect a shift in age at marriage to be a prominent mechanism of limiting procreation where birth control within marriage is unacceptable for cultural reasons. In any case the postponement of marriage implies either postponement of sexual relations or the use of birth preventive measures before time. The effective practice of birth prevention is subject to similar considerations outside as within unions although other elements attain focal importance due to the different nature of the relationship.

It is due to the secondary importance of changes in age of marriage in comparison to changes of reproductive behaviour within unions in a situation of shortage of time that we must disregard the decisions involved in family formation.

If we assume that our efforts to create an anti-natalistic situation, have been successful (or such a situation has spontaneously arisen) we may now establish that the mater-pater dyad must be aware of the (changed) situation and must decide to do something about it before effective birth control can be practiced. As Fawcett puts it: "In contrast to such topics as consumer behaviour, childbearing does not require an affirmative decision. A decision is required only to stop or delay having children".^{27/}

That the situation in which a couple would rather not have any more children, but does not take well-designed action to that effect, is not conjectural, is clear in view of the common finding of KAP-studies in developing countries, that the actual family size usually exceeds desired family size and the similar situation found in some (mainly lower class) segments of developed societies. Although in general, desired family size tends to be higher than intended family size, and actual family size in developed countries, this does not warrant the conclusion that effective family planning is generally practiced in such countries. Research in the USA, The Netherlands, Belgium, France and Italy, for example, points out that an estimation of $\frac{1}{4}$ th of all births as unplanned is quite optimistic for such countries.^{28/}

^{27/} James T. Fawcett: "The Satisfaction and Costs of Children" op.cit. p.9.

^{28/} Ciska Winkel: Literatuurrapport Anticonceptie gedrag",
Nisso, Zeist, December 1974, p.10,11.

The nature of birth preventive behaviour seems to indicate that it will only take place in an effective manner if:

- 1) the objective is clear to those participating in the decision;
- 2) there is adequate communication between the participants in the decision (which is necessary to reach any effective decision);
- 3) the objective as well as the behaviour itself is discussable within the decision unit;
- 4) there is a preparadness to act toward the objective.

If these conditions are met, the kinship unit in an antinatalistic situation must be able to reach the decision to practice birth control within its sexual dyads. There are further requirements applying to these sexual dyads, which must be fulfilled in order to carry out the decision effectively. (We will discuss them later). Let us now try to substantiate our four deducted propositions by a short exposition on each theme.

III.2.1 The objective must be clear. We have theorized that the objective must be explicitly clear to those involved in the decision in order to result in commitment to birth preventive behaviour. We would expect to find effective birth preventive behaviour only with parents who are determined not to have another child at the moment and not with parents who are ambivalent or weakly motivated to prevent the next birth.

We may state, with a sound empirical basis, that contraceptive use and effectiveness both increase as the desired family size is reached. In other words, extent of use and effectiveness is a function of the motivation to stop at a given parity. It is a common finding of research on contraceptive effectiveness that it is higher for couples who have reached their desired family size, than for those who have not, that is, birth preventive behaviour is more effective if carried out to avoid having any more children at all than if carried out to postpone birth of the next child.

Furthermore, if the question is included whether the respondents had any previous idea about family size, it is common to find a positive correlation with effectiveness of birth preventive behaviour.

It seems plausible in view of such empirical findings that certainty of effective birth preventive behaviour requires that those in the decision-making unit reach an explicit and determined agreement to prevent a pregnancy. Whether effective birth control will be practiced in case of an ambivalent or implicit agreement is uncertain. Faberij suggests that much will then depend on the contraceptive behaviour in the preceding period. If the couple has, for example, previously been determined to prevent a pregnancy and has thus been regularly using contraceptives, but is now not quite so sure whether a baby is not desired, she would expect them to continue effective birth control until they decide to have a baby. We would then have a situation with ambivalent motivation in which there is effective family planning. If however, the couple has previously wanted a child and has therefore not been practicing contraception, but now no longer really wants a child, she would expect a situation with ambivalent motivation to arise in which ineffective contraception is practiced.

There is summarily reason to believe that the clearer the objective is to those participating in the decision-unit, the more confident we may be that effective birth preventive behaviour will ensue.

III.2.2 Communication within decision-unit. Assuming that a shift in the utility of the child has occurred, confronting the kinship unit with a more anti-natalistic situation, we may interpret birth preventive behaviour in this novel situation as a specific instance of family problem-solving ability.

Adequate communication between spouses would contribute to effective birth preventive behaviour and we would conversely expect the decision to prevent a pregnancy to be impeded by ineffective communication. Besides the classical studies of Rainwater and Hill, Stycos and Back, many other studies support this contention, finding comparatively strong connections between aspects of marital interaction and contraceptive effectiveness.

We may thus conclude that effective communication between the participants in the decision-making unit does, in general, promote effective birth preventive behaviour, though there are indications that effective birth prevention may also take place within a family with male or female dominance if the motivation of "the person in charge" is strong enough. Methods requiring regular use or concerted efforts seem to be avoided and effective contraception appears to be exception rather than rule under such circumstances. With this proviso, we feel confirmed in our supposition that there is a relation between family communication and effective birth preventive behaviour.

- III.2.3 The discussability of birth preventive behaviour. Reaching a joint decision to prevent a pregnancy requires not only that those participating in the decision can communicate freely but also that the subject matter is not considered too delicate a topic to dwell upon. This implies that sexual behaviour and contraceptive usage must be discussable. That this is often not the case, even between sexual partners, has been documented in numerous studies. Approximately half of the respondents were, for example, found not to discuss sexual matters with their spouses in the Puerto Rico study and in rural Pakistan.^{29/}
- III.2.4 Preparedness to act. Only if one realizes that it is possible to do something about it, will a decision be reached to prevent a childbirth. This implies, in general, an active stance in life in which one takes measures to influence one's own future and in particular, confidence in the effectivity of the measures under consideration. We would thus expect "efficacy" and "faith in the reliability of available means of birth control" to be related with birth preventive behaviour.

Once we have defined "efficacy" with R6ling as "faith in the ability to influence one's own fate and willingness to solve one's own problems", it is clear that this is a familiar concept, which occupies a central position in studies on subjects such as "achievement-motivation", "competence", Rotter's I-E scale" "fate-control" "mastery" etc. A considerable number of empirical studies have related such variables to contraceptive effectiveness and demonstrated a significant positive relationship.

- III.2.5 Who else participates in the decision making process? Although the male and female adults who are socially and legally responsible for the child are always taken up in the decision-making process, it is essential for a policy of fertility regulation to realize that there are others involved in the decision also.

An attempt to influence the parent's decision may fail due to resistance

^{29/} J.A. de Vries: "Some Cultural and Socio-Psychological Factors Affecting Male Family Planning Decision-Making Behaviour in Rural Pakistan". In: D.G. Jongmans, H.J.M. Cleassen: "The Neglected Factor", Van Gorcum, Assen, The Netherlands.

of other members of the decision-unit. Since there is such a wide trans-cultural variation among those included in the decision-unit, it is impossible to say anything in general about the other participants in the decision.

Recognition of the fact that there are other participants in the decision unit, who may exert decisive influence, however, implies the necessity in each cultural context to study the decision-unit, in order to distinguish the key figures in the decision-making process. This may open the possibility to direct a special communication effort towards the opinion leaders.

A suggestive example in case may be medical personnel. Numerous studies in developing as well as developed societies indicate that physicians may not be willing to give contraceptive advice or may not have sufficient up-to-date knowledge to do so correctly. Various publications suggest to improve this situation by adaptation of the curricula of medical schools.

III.2.6 Fertility reduction by promoting birth preventive decision. If our analysis has been correct, effective birth preventive behaviour should be furthered by measures which:

- stimulate kin-groups to set a reproductive target early in the reproductive period;
- stimulate effective communication between the participants in the decision making process;
- make birth preventive behaviour more discussable within the decision-unit;
- stimulate the preparadness to act by promoting efficacy, an attitude of planning for one's own future.

Various aspects of population policies proposed or carried out can be classified under such decision-promoting factors. We have in mind for example: sex-education, population education, family life education, contraceptive information programs, family planning clinic counseling, ante- and post-partum counseling etc.

These policies promote effective birth-preventive decision-making by stimulating the discussability of sexuality, reproductive target setting in the young reproductive years and efficacy, though they are seldom explicitly designed to promote decision-making.

We may therefore conclude that, although we have been able to find policy measures which appear to affect birth preventive decision-making processes,

little is done explicitly for that reason. If there is, however, any truth in the monotonously reiterated KAP findings, that people in developing countries have more children than they want, and that they usually know about -and have positive attitudes toward- birth control but seldom practice it, the birth-preventive decision appears to be the key missing factor. We have also argued that there are large groups of people in industrialized societies who do not succeed in effective family planning and that a crucial determinant thereof is absence of the decision to regulate spacing and number of children. Recognition of these facts seems to justify explicitly taking up the promotion of birth preventive decision-making within the kinship units of society as a subgoal in population policy. Efforts could then be systematically directed toward that end.

III.3 Mother-Genitor Dyad. We may agree with Hawthorne that "although a strong motivation to achieve a particular family size is a necessary condition to contraceptive effectiveness, it is not sufficient". The decision to limit family size has to be carried out diligently in order to guarantee success.

Effective birth preventive behaviour within the sexual dyad presupposes adequate "throughput" of information through the (personality- or social-) system from the decision-unit to the action-unit. Transmission of information between various elements of a system proceeds more effectively, the less rigid the division of labour, the role-segregation and the status hierarchy, that is the less segregated the various positions within the system are.

In principle we have made no assumptions as to the simultaneous presence of genitor and pater in the kinship unit nor about the lasting presence of one or more genitors at all, for that matter. In order not to needlessly complicate our argumentation at this point, since genitor and pater are synonymous in the joint or nuclear kinship units in most of the populations of the world today, we shall assume that they are the same person. Except for rare cases such as matriarchal or matrifocal societies (where available data confirm our proposition,^{30/} integration of the genitor in the kinship unit means integration of sexuality within family life.

^{30/} Wolf Bleek for example reports that contraception is acceptable only for extramarital sexual relations and that tubectomy is the preferred method of birth control in a ghanian matri-lineage (see Bleek's contribution to Jongmans and Claessen op.cit.).

Efficient goal attainment furthermore implies an insight into the available alternatives and into the effectiveness of these alternatives, in order to choose the most suitable line of action.

Efficient family planning thus pre-supposes knowledge of available means of birth control, of the reliability of these means, of where to obtain the necessary services, and how to use the methods properly.

We would, thus, expect more effective birth preventive behaviour to ensue:

- the more integrated sex is in married life;
- the more knowledge prevails of birth preventive measures;
- the more favorable are the attitudes held toward birth control.

We shall examine these propositions consecutively.

III.3.1 Sex in married life. Of all possible manifestations of sexuality we are only concerned with those which occur within the reproductive units of society. We need not embark upon the task of seeking to define sexuality in general, but may confine ourselves to heterosexual intercourse within the sexual dyads.

We shall attempt to demonstrate that there is an association between sexual relations within marriage and the effectiveness of birth preventive behaviour. This does however, by no means, imply that there is anything like a monocausal relation between sexual behaviour and birth control. We may agree with Turner that the relationship between sexual adjustment and marital adjustment is reciprocal and that sexual adjustment in marriage is more effect than cause of general marriage adjustment. "Since the sexual relationship is only one feature of a complex and comprehensive relationship, there is more scope for sexual adjustment to be facilitated or damaged by the total marriage pattern than for the reverse effect to occur".^{31/}

We have maintained that communication between spouses is a crucial determinant of the effectiveness of birth prevention and this applies in optima forma to the very "embodiment" of communication: sexual intercourse. It is, therefore, difficult to regard sexuality in isolation of other aspects of the relationship. Let us nevertheless try to compartmentalize sexual relations from the rest of the marriage, recognizing that this component may independently exert a certain influence on birth prevention but may also be viewed as a sensitive indicator of the general situation in the marital relationship.

^{31/} Ralph H. Turner: "Family Interaction", John Wiley and Sons, Inc., 1970, page 332.

Nye and Berardo describe three types of heterosexual intercourse within marriage, varying considerably in intensity and meaning, which often occur in sequence.

Novelty sex: The sexually inexperienced regard sex with a combination of curiosity and excitement. The attraction is in the fact that it is a new experience, a new relationship, in the idea of the act rather than the act itself.

Individually oriented sex: one or both partners may achieve sexual gratification without response on the part of the other; the orgasm of each is a separate, individually oriented event.

Mutual stimulation sex: It occurs only when both spouses desire it. The arousal of each partner becomes a stimulus for further arousal of the other until orgasm results. Both partners are likely to reach orgasm at about the same time, since both are tuned in to the feelings of the other as well as their own. "Besides providing gratification for both spouses, this type of intercourse differs from others in that it produces more pleasure in the period prior to orgasm and more intense orgasmic experience. This third type involves restraint and control; restraint in that it can occur only when both partners actively want intercourse; control in that each partner must control arousal to approximately that of the other".^{32/}

We shall examine the birth preventive effectiveness in each of these types of marital intercourse.

We may be short about novelty sex: birth preventive behaviour is ineffective under such conditions and its occurrence is rare within marital unions.

Individually oriented sex is in general less favorable for effective birth control than mutual stimulation sex. Rainwater for example (1960-US) distinguishes between "sexual relations of mutuality" and "rejection". The former are characterized by mutual genital interest, co-operation and ^{dis}cussion; it is more likely that female applicants will be used by these couples and used more consistently and rationally. The latter relationships are characterized by the wife's distaste for the sexual interest the man has in her, lack of cooperation and emotional distance; in these couples it is more likely that there will be a

^{32/} F. Ivan Nye and Felix M. Berardo: "The Family", McMillan Co., New York, 1973, pp. 329-331.

sporadic use of male applicants, with little effectiveness.^{33/}

Rainwater's 1965 study (US) also finds a strong relationship between sexual enjoyment of the wife and effective contraceptive practice.^{34/} The importance of the variable of sexual gratification is also apparent from Rainwater's finding in the middle class "that when there is an equal degree of interest in sexual relations, the couple is more likely to adopt effective contraceptive practice before birth of the last wanted child than if either the wife or the husband enjoys sexual relations more than the other ... The great majority of those couples who have equal enjoyment of sexual relations (and are effective contraceptors) are very positive in their interest in marital sexuality and only a minority are mildly positive. Thus, in most cases, the association of effective contraception with equal enjoyment accompanies very positive sexual relations on the part of both partners. In contrast, ineffective practice is associated particularly with a sexual relationship in which the wife enjoys sex more than her husband, or in which he enjoys sex but she does not exhibit a positive interest in it. Where there is equal interest in sexual relations, the couple is more comfortable about sexual relations and has less anxiety which might interfere with the adoption of effective contraception".^{35/}

Back and Hass state that the degree of sexual gratification varies quite markedly by social class and within the lower class also by conjugal role relationship. "In turn sexual gratification appears to be related to contraceptive effectiveness in US samples. In short, American women expressing greater sexual gratification seem to accept and discuss contraception more easily".^{36/}

From such accounts as well as others, included in Winkel's literature survey, a pattern emerges which may be illustrated by the following diagram:

^{33/} Hawthorne *op.cit.*, Pohlman *op.cit.*

^{34/} Lee Rainwater: "Family Design: Marital Sexuality, Family Size and Contraception", 1965, Aldine, Publishing Co., Chicago.

^{35/} Rainwater *op.cit.*, p. 241 and following.

^{36/} Kurt W. Back and Paula H. Hass, "Family Structure and Fertility Control", in James T. Fawcett "Psychological Perspectives on Population", 1973.

type of marital sex:	conjugal role-relationship:	degree of sexual interest:	degree of sexual satisfaction:	effectiveness of birth-control:
mutual stimulation	low segregation	equal interest	equal satisfaction for both-generally satisfactory	effective
individual orientation	high segregation	wife often less interested	less satisfactory in general - one spouse often more satisfied than the other	ineffective (except for "authoritarian" approach)

We are thus of opinion that effective birth preventive behaviour is in general associated with a certain type of sexual relationship within marriage and add that cultural factors (educational level and socialization practices for example) are important determinants of the nature of this sexual relationship.

III.3.2 Knowledge of and Attitudes toward Birth Preventive Measures and other Factors determining choice of birth preventive technique

The partners in a companionate marriage in an anti-natalistic situation must adopt effective birth preventive measures in order to succeed in limiting their offspring to the desired number. Very effective measures indeed have to be consistently utilized if unwanted pregnancies are to be avoided effectively on a societal level.

Westoff and Westoff refer to a study by Robert Potter and James Sakoda in the following wording: "imagine a group of couples desiring three children moderately spaced over 20 years of marriage who are practicing contraception with 99 percent effectiveness. The three births occur within the first 5 years of marriage and they face 15 years of exposure to the risk of an unwanted child. Only two-thirds of the couples can expect to escape without an additional, unwanted pregnancy. Some 28 percent will end up with a total of four children, 5 percent will have five children and a tiny fraction will have at least six, of which three would be unwanted. If the level of contraceptive effectiveness is 95 rather than 99 percent, only 13 percent would theoretically be able to limit their fertility to three births. About 31 percent would have four children, another 31 percent would experience five, and the remaining 25 percent could

expect at least three unwanted pregnancies".^{37/}

In order to make a realistic choice among the various contraceptive measures, in due recognition of the risk of becoming pregnant anyway, the partners must know the alternatives and have an idea about the reliability thereof.

The choice of birth preventive measure depends on various factors, besides those discussed under the heading of the decision unit, which may be summarized under the categories of knowledge, acceptability and attainability of the various measures. Such factors have, in general, recently received ample attention in family planning programs where efforts have been directed towards increasing each of these factors. Due to shortage of time, we shall not discuss ^(constant variation) in detail such factors ~~which have been~~ pertaining to the creation of a more antinatalistic set of intermediate variables.

III.3.3 Birth control by affecting the sexual dyads of society

Government measures designed to affect the sexual relations within marital unions are rare. Besides extension of sexual- and family-education, measures pointing in that direction might include raising the minimum age at marriage for females, thereby reducing the age differential between husband and wife, corrosion of family networks, in which the wife occupies an inferior position, prohibiting arranged marriages etc.

Sexual relations within marriage are nowhere regulated by law (except for severe physical maltreatment). Sexual laws in general attempt to limit sexual intercourse to marital unions and restrict sexual activities outside marriage.

Marital intercourse patterns are not viable to state manipulation.

IV. INTERMEDIATE VARIABLES

The kinship unit with a given utility of the child, given decision-making ability and given birth-preventive effectiveness has a limited number of possibilities by which its reproductive targets can be achieved. Davis and Blake have classified these intermediate variables through which any influence on societal

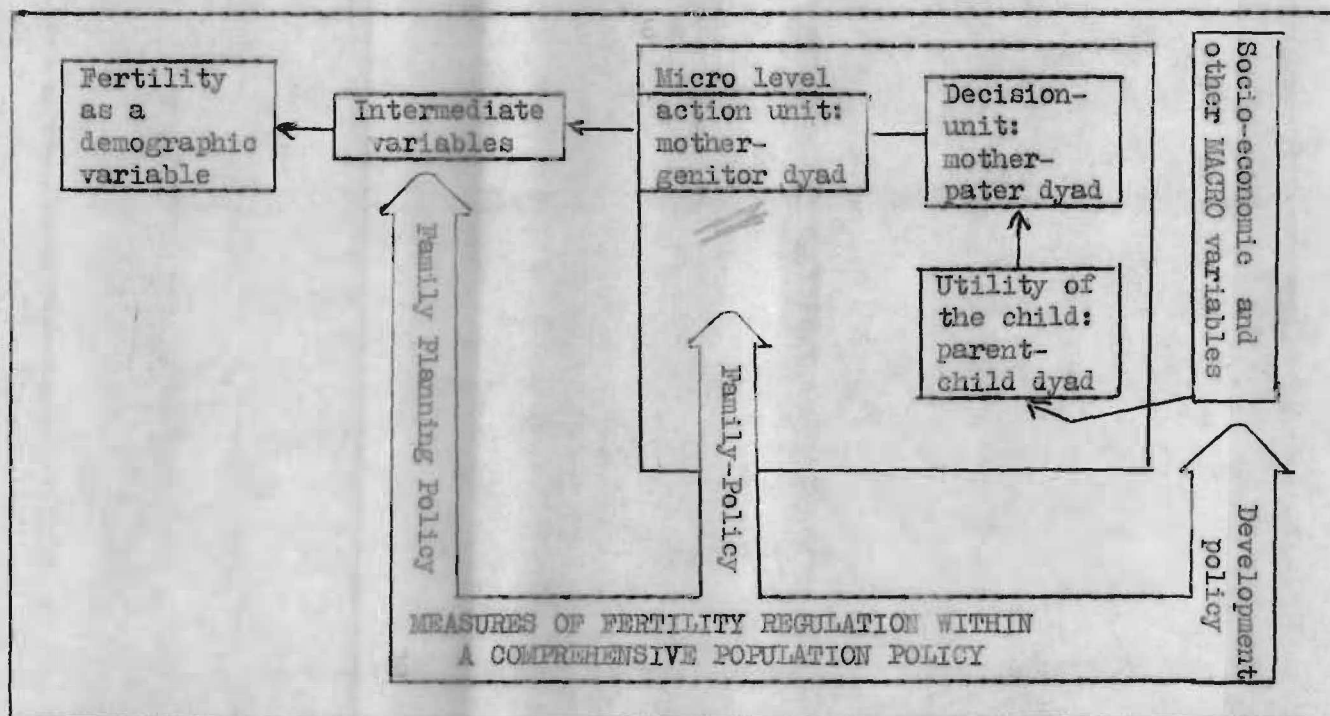
^{37/} Leslie Aldridge, Westoff and Charles F. Westoff: "From Now to Zero", Little Brown & Co., 1968, p. 70-71. A more elaborate explanation of why this is so plus a similar calculation by Bourgeois Pichat for India is to be found in: Goran Ohlin: "Population Control and Economic Development", OECD, 1967.

fertility must operate.

It has become customary within the sociology of fertility to use their terminology when discussing relevant topics. A large body of literature is thus available which pertains to the various intermediate variables. No attempt will be made to reduce it to a summary and it is assumed that the reader has a notion of the working of these variables and the attempts to influence fertility through their manipulation.

V. SUMMARY

The paradigm for the explanation of fertility variation which we have attempted to work out, may be summarized by the following diagram:



we have attempted to lay down an explanatory framework from which any comprehensive culturally specific explanation of fertility variation may be deduced and which may serve as a basis for the integration of fertility regulation within a population policy and development planning.

The basic hypothesis is that each unit in the diagram consists of a necessary link in the chain of causation and that fertility decline therefore may only occur if (1) the structural situation of the society (macro level) changes and (2) causes a decline in the utility of the child in the kinship units of society (3) leading

to the decision to postpone marriage or restrict reproduction within unions which decision (4) has to be carried out effectively by an adaptation of reproductive behaviour which results in (5) an alteration of the values of the "intermediate variables" and finally to (6) a change in societal fertility levels.

Application of the paradigm to policy formulation implies strategically directing efforts to the link which is holding up the process of fertility reduction and not wasting funds on independent variables which will have no effect since another condition for fertility reduction is not fulfilled. Which link in the chain of causation is of key importance may be inferred by secondary analysis of data available from fertility surveys, KAP studies, socio-economic surveys of the family, of households etc. or from a survey specifically designed to chart the situation with regard to these variables.

The paradigm has the pretension in its elaboration of going beyond the extrapolation of empirical generalizations by attempting to reveal why certain macro variables, such as the participation of the women in the workforce, or a decline in infant mortality sometimes leads to fertility decline but sometimes doesn't, integrating such partial explanations as encountered elsewhere, into a basic comprehensive framework.

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