

SOCIAL AND PSYCHOLOGICAL FACTORS AFFECTING FERTILITY

XXVIII. THE INFLUENCE OF SIBLINGS AND FRIENDS ON FERTILITY¹

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THIS report examines the relationships between the family sizes of couples in the Indianapolis sample and those of their siblings and friends. In a previous article² the influence of another "primary group," the family of origin, was investigated with generally negative results so far as the present sample is concerned. However there are both theoretical and methodological reasons for expecting closer fertility relationships in connection with contemporary "primary" groups. Indeed, as it turns out, fertility of friends provides the closest correlate of planned family size uncovered by the Indianapolis Study of Fertility.

Before considering these matters, however, it is appropriate to summarize the experience of one of the authors with a related set of items. The Indianapolis Study included among its original hypotheses the following two: the relevance of "childhood situations" and the relevance of "conformity to group patterns" to both fertility and fertility planning. Information about the primary groups and their fertility represents only part of the data collected to test these hypotheses.

CHILDHOOD SITUATIONS

To test the hypothesis that childhood experiences influence fertility, several types of information were collected about the family of origin in addition to its size. These may be classified

¹ This is the twenty-eighth of a series of reports on a study conducted by the Committee on Social and Psychological Factors Affecting Fertility, sponsored by the Milbank Memorial Fund with grants from the Carnegie Corporation of New York. The Committee consists of Lowell J. Reed, Chairman; Daniel Katz; E. Lowell Kelly; C. V. Kiser; Frank Lorimer; Frank W. Notestein; Frederick Osborn; S. A. Switzer; Warren S. Thompson; and P. K. Whelpton.

² Kantner, J. F., and Potter, R. G.: Social and Psychological Factors Affecting Fertility, xxiv. The Relationship of Family Size in Two Successive Generations. The Milbank Memorial Fund *Quarterly*, xxxii, No. 3, July, 1954, pp. 294-311. (Reprint pp. 1069-1086.)

as those dealing with (1) the affectional tone of the home (e.g., happiness of children, happiness of parents) and the difficulties encountered by the parents in raising their children,³ (2) the extent to which parents actively encouraged their children to have families of their own, and (3) the structural characteristics of the family of origin (e.g., marital history of parents, ordinal position and number of siblings, occupation, and education of parents). Although there is much that is interesting in these data, no association between them and either fertility or fertility planning has been found. This negative result is especially true for the items relating to the assessment of childhood and parental encouragements to family formation (1 and 2 above). Regarding the structural characteristics, couples reared in broken homes or reared by persons other than their biological parents exhibit above-average fertility. Examined within socio-economic categories, however, these differences tend to disappear.

Reasons for so many negative findings are not difficult to find. During the time that elapses between childhood and marriage, early experiences become entangled with a multitude of other influences, the disentangling of which poses formidable problems in a nonlongitudinal study. Even if full information were available on all significant intervening influences, the small size of the Indianapolis sample and the frequently skewed response distributions would tend to frustrate analysis. Other problems probably arise because childhood is recalled so selectively. This does not mean, however, that future research should ignore the childhood milieu. With the aid of more appropriate study designs certain early influences may yet appear as important determinants of fertility.

CONFORMITY TO GROUP PATTERNS

Among the hypotheses formulated at the outset of the Indianapolis Study was one that posited a relationship between

³ E. F. Borgatta and C. F. Westoff have used these items in a scale which they call "happiness of family and childhood situations." See *Social and Psychological Factors Affecting Fertility*. xxv. The Prediction of Total Fertility. The Milbank Memorial Fund *Quarterly*, xxxii, No. 4, October, 1954, p. 408. (Reprint p. 1112.)

conformity to group patterns and both fertility and contraceptive effectiveness. Over half of the items here probe for values pertinent to fertility (ideal number of children, best age to marry, best birth intervals, attitude toward childlessness, attitudes toward birth control clinics and birth control advertisements, etc.). A modal or median response has been ascertained for each value. However, the degree of deviation from these empirically established norms shows little relationship either to fertility or fertility planning. The result is also negative when conformity, measured by an interviewer rating scale, is treated as a personality trait.

Though adding little to our knowledge of fertility differentials, the responses to the "conformity" questions are of interest in their own right. For example, three-fourths of the wives said that for families "in moderate circumstances" two or three children are ideal. This holds rather uniformly in each of the various fertility-planning groups. Birth control ads in magazines and birth control clinics are favored by an overwhelming number of wives (only a little more than 5 per cent of the wives state that they are "opposed" to clinics or even indifferent about their value). Similarly, few wives approve of having children as late as age 40. The preferred period of reproduction for most respondents, then, falls short of a dozen years on the basis of their statements as to ideal age at marriage, ideal interval from marriage to first birth, and best age to complete the family. However, this preferred period of child-bearing is long enough on the average so that if the couples had followed the "ideal" birth interval of two years reported by most wives, they would have had substantially larger families than they did.

Thus far "conformity" has been approached in two ways. It has been treated as acceptance or nonacceptance of the majority position on various values pertinent to fertility and secondly as a generalized personality trait. In the present analysis "conformity" is viewed more narrowly as responsiveness to the fertility examples provided by relatives and friends. This type

of responsiveness is investigated by examining the fertility correlations between couples and their primary groups.

PROPOSITIONS TO BE TESTED

Information is available on the family sizes of husband's siblings, wife's siblings, and wife's best friends. The remainder of this report is devoted to analyzing correlations between fertility values of the Indianapolis Study couples and these three groups. The analyses are set up to test three main propositions:

(1). There is a positive relationship between one's own family size and the family size of one's married siblings (to be stated henceforth as the relationship between couple fertility and sibling fertility). This relationship is true for either husband's or wife's siblings.

(2). The relationship between fertility of couples and fertility of friends is also direct and substantially stronger than the one above.

(3). In the "efficient family planner" sample these relationships maintain their strength within socio-economic status. However in the "inefficient family planner" sample, effectiveness of contraception decreases with decreasing socio-economic status, giving a strong relationship between status and family size. Hence in this sample the relationships hypothesized in (1) and (2) above should be reduced when socio-economic status is held constant.

The "relatively fecund" couples are classified as "efficient family planners" or "inefficient family planners" according to their success at birth control.⁴ The "efficient planners" all claim that they had their last pregnancy only when they stopped contraception for the purpose. The inefficient planners admit to one or more "unwanted pregnancies."⁵

⁴ A description of the criteria for "relatively sterile" and "relatively fecund" is provided in Whelpton, P. K., and Kiser, Clyde V.: *Social and Psychological Factors Affecting Fertility*. viii. The Comparative Influence on Fertility of Contraception and Impairments of Fecundity. The Milbank Memorial Fund *Quarterly*, xxvi, No. 2, April, 1948, pp. 182-236 (Reprint pp. 303-358).

⁵ More specifically, the "efficient planners" include those couples who had no pregnancies that were not deliberately planned by stopping contraception in order
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The three propositions above are directed toward couples who have completed their family building. This ideal condition is not quite met by the Indianapolis couples. Their marriage durations of 12–15 years mean that they probably have completed from 80 to 90 per cent of their eventual fertility.⁶ In other respects, too, the sample is highly specialized. The couples are native-white Protestants, married during 1927–29 with neither spouse previously married, with husband under 40 and wife under 30 at the time of marriage, with city residence during most of the time since marriage, and with both husband and wife having at least a complete grammar school education.

To the authors' knowledge no previous tests have been made of the relatedness of family sizes among siblings or friends. Thus there is little guidance for expectations. The hypothesis that siblings and couples are directly related in their fertilities must be regarded as provisional. In the first place, the same couples show no relationship between their fertility and that of their parents'.⁷ This result disagrees with other studies which on large samples have reported correlations

to conceive and those whose last pregnancy was deliberately planned by stopping contraception in order to conceive but who had one or more pregnancies under other circumstances. In previous reports in the Indianapolis series, these groups have been referred to as "Number and Spacing Planned" and "Number Planned" respectively. The "inefficient planners" are couples classified as least successful in planning family size because one or more pregnancies occurred after the last that was wanted. It is recognized that probably in some cases the "unwanted" pregnancy was "wanted" by the time it occurred. In previous reports this group has been designated as "Excess Fertility." An additional group of couples, the "Quasi-Planned" in earlier reports, who did not deliberately plan the last pregnancy, but who either wanted the last pregnancy or wanted another pregnancy, is excluded in the present analysis. A fuller discussion of these planning types is given in Whelpton, P. K., and Kiser, C. V.: *Social and Psychological Factors Affecting Fertility*, vi. *The Planning of Fertility*. The Milbank Memorial Fund *Quarterly*, xxv, No. 1, January, 1947, pp. 63–111 (Reprint pp. 209–257). The "Quasi-Planned" are excluded on the basis of an analysis showing that this group is probably a mixture of two types: couples wanting the number of children they have and perhaps additional ones and couples properly belonging to the "Excess Fertility" category, but without any means of reliably separating the two types. (See Potter, R. G.: *The Influence of Primary Groups on Fertility*, Unpublished Ph.D. dissertation, Dept. of Social Relations, Harvard University, 1955, Appendix A.)

⁶ The source for this estimate is Glass, D. V., and Grebenik, E.: *The Trend and Pattern of Fertility in Great Britain, Part I: Report*, PAPERS OF THE ROYAL COMMISSION ON POPULATION, Vol. VI, London, H.M.S.O. 1954, Table 26.

⁷ Kantner and Potter, *op. cit.*, pp. 302 and 308. (Reprint pp. 1077 and 1083.)

of about .20. It is taken by the authors to mean that in the Indianapolis Study an adverse sampling scheme attenuates .20 correlations into nonsignificance. Because of the eligibility criteria employed, the couples tend to represent middleclass urbanites proficient in the use of contraception. Their parents, not directly subject to these eligibility criteria, represent a wider range of income and residence. Thus the sample contains a certain proportion of urban middle-class couples with rural or low-income parents. In this group the generational contrast in fertility is likely to be widest; and the inclusion of this group naturally reduces the fertility relationship between generations. At the same time couples of another type who might help to strengthen the fertility relationship between generations are automatically excluded. These are the nonmobile sons and daughters of rural and low-income parents, who on account of their nonmobility are more apt to retain their parents' high fertility.

For the same reason the sampling design must be taken as adverse for the fertility relationship between couples and siblings. It is possible to get into the sample urban, middle-class couples paired with rural and low-income siblings; but impossible to get the pairing of a rural and low-income couple with similar siblings. However, the force of this type of bias may be lessened by the fact that so many siblings have participated in the respondents' upward mobility or their cityward migration. Also siblings, belonging to a more recent generation, have participated that much more in the secular trend toward more efficient birth control.

There is another reason for expecting a stronger bond between the fertilities of siblings than between fertilities of consecutive generations. A respondent may react negatively to his family of origin and desire a family of very different size for himself. For example, the authors found a slight tendency for couples from very large families of origin to have smaller families than couples reared in families of moderate size.⁸ If it ex-

⁸ Kantner and Potter, *op. cit.*, pp. 302 and 307. (Reprint pp. 1077 and 1082.)

ists, a negative reaction of this type may tend to reduce the average relationship of parent-offspring fertility. Yet if this negative reaction is sufficiently shared by his brothers and sisters, it might actually contribute to the relatedness of their family sizes. Thus to some extent a factor that reduces a fertility relationship in the parents' case may at the same time enhance a relationship in the siblings' case.

However, a shared resolve to have small families cannot be achieved unless birth control is used with success. Accordingly any relationship between the fertility of couples and siblings should be stronger among "efficient planners" than among "inefficient planners," provided that socio-economic status is held constant. Without such a control couples and siblings might be related in their fertility simply because, being of similar status, they tend to be similar in contraceptive efficiency.

The reasons for expecting a relationship between fertility of friends and couples are multiple and, on the whole, more compelling. Friends are probably in a more strategic position than siblings or parents to influence ideals of family size. To be sure, couples exercise a right to choose their own family size. But their ideas are subject to influence regarding such matters as what size of family can be afforded on a certain income; what is a fair load on the wife; and many other pertinent values. Seemingly friends are in a good position to sway such ideas. The Warner school in sociology has stressed the clique's importance as a socializing agent in adult life. Then too, friends are often in closer contact with the couple than are siblings or parents. Several years of marriage may be required before the couple decide how many children they want. By this time the couple may be far removed from nearest relatives.

Yet one can easily overstress this idea that friends influence ideals of family size. In this report the term "friends" refers to three friends of the wife and presumably most of them are current friends. These friends may not be the most strategic ones, especially if the couple made their crucial fertility decisions years earlier.

Selective factors also play a part, perhaps a predominant one. Friends may be selected in a fashion that leads to related family sizes. For example, childless couples are apt to find that they have most in common with other childless couples and choose them as friends with disproportionate frequency. Small family size increases the chances that the wife will work for pay, usually with the work situation then bringing her into contact with other wives of low fertility. Over small areas housing tends to be homogeneous in rent and living space. This may reduce the chances that two couples similar in income but widely separated in family size will be neighbors.

There are several reasons, then, for expecting a relationship between the fertilities of couples and their friends. This fertility relationship should be stronger among "efficient family planners" provided that friends exercise an important influence upon the couples' family size ideals and provided that socio-economic status is held constant. Without adequate family planning, family size ideals cannot be implemented and influence counts for less.

Expectation that the fertility relationships will be independent of socio-economic status in the "efficient planner" sample and dependent in the "inefficient planner" sample follows from known relationships.⁹ In the "efficient planner" sample socio-economic status has a negligible relationship with couples' fertility; and it is hard to anticipate anything different for its relationships with fertility of siblings or friends.¹⁰ In the "in-

⁹ The measure of socio-economic status used here is the "Summary Index of S.E.S." which is based upon the husband's occupation, his annual earnings since marriage, rental, net worth, purchase price of car, education of husband and wife, and the Chapin Social Status Scale. For a full description of this index, see Whelpton, P. K., and Kiser, C. V.: *Social and Psychological Factors Affecting Fertility*. ix. *Fertility Planning and Fertility Rates by Socio-economic Status*. The Milbank Memorial Fund *Quarterly*, xxvii, No. 2, April, 1949, pp. 188-244. (Reprint pp. 359-415.)

¹⁰ The "efficient planner" sample includes both the "Number and Spacing Planned" and the "Number Planned." When just the "Number and Spacing Planned" are considered, the correlation between socio-economic status and couples fertility rises to .16. See Westoff, C. F. and Kiser, C. V.: *Social and Psychological Factors Affecting Fertility*. xxi. *An Empirical Re-Examination and Intercorrelation of Selected Hypothesis Factors*. The Milbank Memorial Fund *Quarterly*, xxxi, No. 4, October, 1953, p. 430. (Reprint pp. 953-968.)

efficient planner" sample, because adequacy of birth control decreases steadily with decreasing socio-economic status, there is a substantial relationship between socio-economic status and fertility of couples. Moreover, it seems highly plausible that the statuses of siblings and friends are closely related to the couples' statuses. As a result the fertility relationships of this sample should depend tangibly on the tendency of couples, siblings, and friends to be alike in socio-economic status and hence to be alike in contraceptive effectiveness and fertility.

SIBLINGS' AND COUPLES' FERTILITY

Siblings refer to "sociological" siblings rather than to "biological" siblings.¹¹ These are children reared in the same household with the respondent, though not necessarily born of the same parents. The ages of sociological siblings tend to be more closely grouped around those of the respondents. This tends to increase the homogeneity of childhood environments. It also means less variable marriage durations.

This second advantage is important because the chief problem connected with measuring fertility of siblings is their variable marriage durations. Obviously on the average more births can be expected of siblings married 20 years than of siblings married 5. But also on the average more births can be expected of four siblings each married 5 years than of one sibling married 20 years. One way of meeting these problems is to measure sibling fertility as a ratio, with the births of a sibling expressed as a ratio of the births expected of persons having his duration of marriage. This expected number of births is derived by using the fertility record of all siblings in the sample. The aver-

¹¹ "Sociological" siblings are defined as

(a) Full and half brothers and sisters within 10 years of the age of the wife (husband) provided that they were not separated from the wife (husband) by death or other reason before they reached 3 years of age or the wife (husband) reached 6 years of age.

(b) Step and adopted brothers and sisters within 10 years of age who shared the home throughout the time the wife (husband) was under 6, or for 3 years while she (he) was 6-16 (or an equivalent combination).

(c) Other children meeting the requirements of (2) and reared with the wife (husband) if the latter lived longest while 6-16 with nonrelatives (but not in an institution) or with other relatives than one or both parents.

age number of births per sibling in the first, second, third, and so on year of marriage is calculated and then these averages are summed for those specific years which fall within the marriage duration of the particular sibling. Of course, if the respondent has more than one married sibling, a ratio of observed to expected births may be computed for each sibling and then averaged.¹²

Siblings and couples may be related in their fecundities, or physiological capacities to reproduce. It follows, then, that the presence of many siblings and couples whose fertility is determined only by fecundity would cloud the meaning of any relationships found between their fertilities. To minimize this problem, the "relatively sterile" couples have been excluded. The sample of siblings cannot be refined in the same way. As a substitute for direct refinement, siblings and associated couples are excluded if the married siblings in question have not had at least one birth. Such a procedure excludes some voluntarily childless siblings, but removes most of the extremely infecund siblings as well. Besides the elimination of couples without married siblings, this cuts sample size by approximately one-third.

Results for the "efficient planners" are first examined. Fer-

¹² This measure is more easily described with symbols. For each year of marriage—first, second, third, and so on—an average number of live births per sibling is calculated from the experience of all married siblings. Denote these average fertilities as x_i , $i = 1, 2, 3, \dots$. Analogously the live births observed for a given sibling may be denoted as f_{ij} , $i, j = 1, 2, 3, \dots$ where i again stands for the ordinal year of marriage duration and j identifies the sibling. Then the measure of fertility for a respondent's siblings is simply

$$\frac{\sum_j (\sum_i f_{ij})}{\sum_j (\sum_i x_i)}$$

where x and f are summed over the full length of marriage of each married sibling and these totals are then summed over the total number of married siblings which the respondent has. One additional remark should be made. Instead of the x_i , coders of the Indianapolis Study used as their expected fertilities $y_i = 10 (x_i/x_{10})$. Their final measure of the fertility of a respondent's siblings is

$$\left\{ \frac{\sum_j (\sum_i f_{ij})}{\sum_j (\sum_i y_i)} \right\} \div x_{10/10}$$

This formula may be simplified by cancelling terms to obtain the formula cited above. Thus:

$$\frac{\sum_j (\sum_i f_{ij})}{10 \sum_j (\sum_i (E_{x_i}/x_{10}))} \times \frac{10}{x_{10}} = \frac{\sum_j (\sum_i f_{ij})}{\sum_j (\sum_i x_i)}$$

tility of wife's siblings yields a correlation of .25 ($N = 230$) with fertility of couples. The corresponding correlation for fertility of husband's siblings is .22 ($N = 231$). Neither relationship gives evidence of nonlinearity.

Fertility distributions are typically skew, with the lowest fertility values naturally stopping at zero but with the highest values free to spread out. By employing square roots instead of the original fertility values, distributions are obtained which come much closer to the assumptions usually made in significance tests. Under these conditions the fertility correlations between couples and husbands' siblings and between couples and wives' siblings are .15 and .25 respectively, with a correlation of approximately .15 needed to reject, at a .95 confidence level, the hypothesis that the two sets of fertility are unrelated.

As anticipated, relationships are not reduced when socio-economic status is held constant. Among the "efficient planners" much the same fertility is exhibited in the various socio-economic strata; and the same is true for siblings. The two lowest strata ($N = 40$) are exceptions since their couples show a sharp increase in family size. However, it may be doubted whether this is an authentic rise in size of planned family. The separation between "efficient" and "inefficient" family planners becomes very uncertain in these lowest strata. Accordingly they are left out of the analysis summarized in Table 1.

Among "inefficient planners" the relationships between sibling fertility and couple fertility remain very low but do not

Table 1. Coefficients of correlation¹ between fertility of efficient family planners and the siblings of husband or wife.

PARTIAL CONTROLS (1)	"SOCIOLOGICAL SIBLINGS" OF WIFE ($N = 200$) ² (2)	"SOCIOLOGICAL SIBLINGS" OF HUSBAND ($N = 202$) ² (3)
No Control	.21	.11
Socio-Economic Status	.21	.12

¹ Fertility values are converted into their square roots.

² Excluded are the two lowest socio-economic status divisions. Needed to reject $p = 0$ with .95 confidence when $N = 200$ is a correlation coefficient of about .15.

vanish. Coefficients of .15 are evinced both in the cases of the wife's siblings and her husband's. Such coefficients put the relationships on the border of .05 significance. Both relationships appear to be linear.

However, both relationships collapse when socio-economic status is held constant (*see* Table 2). Very probably siblings and couples are closely related in their socio-economic statuses and the .43 correlation which couples exhibit between their family sizes and their socio-economic status is repeated among siblings.

FRIENDS' AND COUPLES' FERTILITY

Much stronger relationships are found between the fertilities of couples and friends than between the couples and siblings discussed above. In both the "efficient planner" and "inefficient planner" samples the correlation is approximately .40. Before considering these relationships in detail, something should be said about measurement.

In the next paragraphs the term "friends" refers to three married friends of the wife. No restrictions were imposed on the wife concerning her choice of married friends. Thus a friend might be a next door neighbor or a distant childhood chum with whom she has kept in touch by mail. But it seems reasonable to assume currentness of contact and geographical proximity in most cases. Also, a friend may be married a longer or shorter time than the wife, with her family size naturally affected. However to the extent that friendship cliques are age-graded, the marriage durations should tend to be homogeneous.

Table 2. Coefficients of correlation¹ between fertility of inefficient family planners and the siblings of husband or wife.

PARTIAL CONTROLS (1)	"SOCIOLOGICAL SIBLINGS" OF WIFE (N = 206) (2)	"SOCIOLOGICAL SIBLINGS" OF HUSBAND (N = 210) (3)
No Control	.15	.15
Socio-Economic Status	.05	.10

¹ Fertility values are converted into their square roots. Needed to reject $p = 0$ with .95 confidence when $N = 200$ is a correlation coefficient of about .15.

The wives' fertility is measured in terms of live births; their friends' fertility in terms of living children. Had the latter measure also been applied to the wives, the correlations between fertility of wives and friends more likely would have been higher rather than lower than the ones to be examined. To the extent that selective factors operate in these correlations, they operate in terms of living children, not live births. However, the issue almost certainly is a secondary one, since a comparison of the wives' distributions of live births and living children shows them to be very similar.¹³

One further remark about measurement should be made. The fertilities of wife's friends were not reported individually in the study. Only a single figure giving the total number of living children of the three friends was required. If the wife reported on only two friends, their total fertility was multiplied by 1.5. If she reported on only one friend, her answer was not used. As expected the reports usually relate to three friends. This means that an extreme family size of one friend tends to be averaged toward a more median value by the fertilities of the other two friends. Undoubtedly this feature raises the fertility correlation between friends and couples over what it would be if wives reported on only one friend. Chances are greatly diminished that wife and friends both will have extreme family sizes. This is important because when these extremes are opposite, they contribute relatively huge deviations to the standard error of estimate.

Among "efficient planners" the fertility correlation between wives and their friends is .37 ($N = 337$). Again fertility values are converted into their square roots in order to obtain better shaped distributions.) The relationship shows no evidence of nonlinearity. As expected, it is not reduced when socio-economic status is held constant (Table 3).

Of special interest is whether among the "efficient planners" childless wives select other childless wives as friends more often

¹³ Whelpton, P. K., and Kiser, C. V.: *Social and Psychological Factors Affecting Fertility*. vi. The Planning of Fertility. *The Milbank Memorial Fund Quarterly*, xxv, No. 1, January, 1947, p. 63. (Reprint, p. 232.)

than do wives with children. This cannot be answered directly. Information on the fertility of wife's three friends is restricted to a single figure stating their total number of children. However, if three friends total two or fewer children, then one or more of them are without children. Proportions of such cases can be calculated and then compared for wives with 0, 1, 2, and 3 or more children. The results, starting with childless wives, are 40 per cent, 22 per cent, 8 per cent, and 12 per cent—this for sample sizes of 88, 77, 106, and 66. The evidence is clear that among the "efficient planners" childless wives report friends without children more often than do wives with children.

Among "inefficient planners" the fertilities of wives and their friends show a correlation of .40 ($N = 268$). Again the relationship appears to be linear; and it manifests no signs of attenuation among wives with large or small families.

A coefficient of .40 puts it a shade above the corresponding correlation in the "efficient planner" subsample. The slight edge is specious, however. The two coefficients cannot be compared directly with each other, since in the "inefficient planner" sample the variance of couples' fertility is 38 per cent greater than the variance of the couples' fertility in the "efficient planner" sample. If the coefficient in the "inefficient planner" sample had a standard error of estimate no larger than the standard error of estimate in the "efficient planner" sample, the "inefficient planner" coefficient would be nearer .60 than .40. No special assumptions are required for this calculation.¹⁴

Table 3. Coefficients of correlation between fertility of couples and average fertility of wives' three friends, by family planning status of couples.¹

PARTIAL CONTROLS (1)	EFFICIENT FAMILY PLANNERS ($N = 297$) ² (2)	INEFFICIENT FAMILY PLANNERS ($N = 268$) ² (3)
No Controls	.38	.40
Socio-Economic Status	.38	.31

¹ All fertility values are converted into their square roots.

² Excluded are the two divisions of lowest socio-economic status ($N = 40$). Needed to reject $p = 0$ at a .95 level of confidence, when $N = 260$, is a correlation coefficient of about .13.

¹⁴ Let the subscripts e and i distinguish whether a statistic belongs to the
(Continued on page 260)

The families of "inefficient planners" increase in size as one descends the socio-economic scale. The tendency is marked enough to give a correlation of $-.43$ between socio-economic status of wives and their fertility. Wives and friends are closely related in their statuses so that there is even a correlation of $-.30$ between fertility of friends and wives' socio-economic status. Thus the fertility tie between wives and friends depends partly on a similarity of socio-economic status together with the tendency of fertility to increase as socio-economic status decreases. The degree of this dependence turns out to be about 40 per cent. When socio-economic status is held constant, the correlation between fertilities drops from $.40$ to $.31$. This means a reduction to $.31^2/.40^2$ or $.60$ in the proportion of fertility variation originally accounted for.

Part of the reason why the fertility relationship depends on socio-economic status is that effectiveness of contraception is directly associated with socio-economic status. This can be demonstrated quite directly. The number of pregnancies unwanted by husband and the number of pregnancies unwanted by wife are recorded. The correlation between these unwanted pregnancies and the couples' fertility is $.55$. That is, about 35 per cent of the fertility variation of the "inefficient planners" can be accounted for in terms of unwanted pregnancies. Moreover, number of unwanted pregnancies is to a substantial extent inversely correlated with socio-economic status, the correlation being $-.30$. In summary, the relationship between fertility of wives and fertility of wives' friends drops about 40 per cent when socio-economic status is held constant. Part of the reason for this dependence is the familiar fact that socio-economic status is closely related to effectiveness of contraception and this in turn accounts for an important fraction of the variation in family size.

"efficient planner" or "inefficient planner" sample. No arbitrariness is introduced if s_0^2 is assigned a value of 1. Then $s_1^2 = 1.38$. r_0 is $.37$. Its square, r_0^2 , will be defined as $1 - s_z^2 / s_0^2$ which means that $.14 = 1 - s_z^2$ or that $s_z^2 = .86$. Now suppose that s_z^2 takes the same value of $.86$ in the "inefficient planner" sample with its $s_1^2 = 1.38$. Then hypothetical $r_1^2 = 1 - .86/1.38$ or approximately $.38$, the square root of which gives r_1 as approximately $.62$.

ROLE OF QUALIFYING FACTORS

The influence of a primary group on fertility is not automatic. The types of social relationships between couples and members of a particular primary group vary enormously. Undoubtedly this variation affects the likelihood that a primary group will influence the size of family preferred by the couples. To test this supposition in relation to friends, the couples may be variously classified according to their relationships with their friends. Each set of subgroupings which results from such a classification then is examined for evidence of differing levels of influence. That is, fertility correlations between wives and wives' friends are calculated in each subgroup and their rank order compared with expectation.

This extension of the analysis actually has been carried out. Relationships have been classified along such dimensions as: feeling of luckiness about friends, frequency of contact with friends, residential mobility, perception of own finances as compared with friends', social mobility of couples, and others. The analysis has been restricted to "efficient planners" since inadequate family planning could only obscure the comparisons.

Results have proved negative. Three factors may have contributed to this outcome. The classifications of social relationship are few and crude. This is not surprising, since the data were not collected with this type of classification in mind. Nor has it been possible in any classification to hold constant more than one factor. Ideally the bearing of differing kinds of social relationship is investigated only when some control has been achieved over such aspects as frequency of contact, uniformity of family size among friends, and the presence or absence among friends of extreme family sizes. Finally, there is no justification for expecting qualities of social relationship to give differing fertility correlations between couples and their friends, unless the influencing of family size ideals by friends is an important component in these correlations. It may be that these correlations depend on selective factors. If so, a negative outcome is virtually inevitable.

PERCEPTION OF ECONOMIC SITUATION (1)	PERTAINING TO HUSBAND'S PERCEPTION		PERTAINING TO WIFE'S PERCEPTION	
	Percentage Having More Children than Wife's Friends (2)	Sample Size (3)	Percentage Having More Children than Wife's Friends (4)	Sample Size (5)
Perceive Having Less to Spend than Friends	46	111	44	112
Perceive Having About the Same to Spend	36	146	38	161
Perceive Having More to Spend than Friends	35	80	33	64
TOTAL	40	337	39	337

Table 4. Among "efficient planners" percentages having more children than wife's friends, by husband's and wife's perception of their income situation as compared with their friends'.

One result merits specific notice. Husbands and wives are asked, "During most of your married life have you had as much to spend as most of your friends?" The answers are fairly evenly divided among "having less," "the same," and "more money to spend."

One characteristic of couples perceiving that they have less money to spend than do their friends is a feeling of economic insecurity.¹⁵ This makes sense, since friends afford the readiest benchmark of economic adequacy. But this specific group of couples also has a distinctively high proportion of wives having more children than the average for their three friends. This is surprising because of the association between low fertility and low economic security.¹⁶

Probably this association is overshadowed by another. Among couples of similar income, those who see themselves with more children can honestly say that they have less money to spend on many things, especially of a recreational

¹⁵ Economic security is measured here by the "summary index of economic security" used in Kiser, C. V. and Whelpton, P. K.: *Social and Psychological Factors Affecting Fertility*. XI. The Interrelation of Fertility, Fertility Planning, and Feeling of Economic Security. *The Milbank Memorial Fund Quarterly*, XXIX, No. 1, January, 1951, pp. 112-114. (Reprint pp. 538-540.)

¹⁶ *Ibid.* (Reprint pp. 495 ff.)

nature. In corroboration, Table 4 indicates that spouses who perceive having less to spend are selected toward having a higher fertility than their friends.

SUMMARY

The relationships between the couples' fertility and the fertilities of husbands' or wives' siblings are very weak. In the sample of "efficient family planners" they barely reach statistical significance. Among "inefficient family planners" they do not exist independently of socio-economic status. Relationships equal to those found could be expected between any two groups having statuses as closely related as those of the couples and their siblings.

A much stronger bond exists between fertility of couples and fertility of wives' three friends. A correlation coefficient of .37 is met in the "efficient planner" subsample and is maintained within socio-economic strata. This apparently linear relationship holds up well at both extremes of couple fertility. Childless wives, more often than wives with children, report as friends women without living children. Wives having three or more children report friends of higher fertility than do wives with two children.

Unexpectedly the fertility correlation between couples and wives' friends is just as high in the "inefficient planner" sample, standing at about .40. One reason for this surprising result is mechanical: the family sizes of couples are 38 per cent more variable in the "inefficient planner" sample than in the "efficient planner" sample. The relationship also depends partly on the fact that couples and friends tend to be similar in socio-economic status and therefore in effectiveness at birth control. The amount of variation in couple fertility which can be accounted for in terms of fertility of wives' friends is reduced 40 per cent when socio-economic status is held constant.

INTERPRETATION

Probably even in an unrestricted sample the correlation between fertility of couples and fertility of their siblings would

be low. It seems unlikely that siblings wield much influence upon each other's ideals of family size. Nor do shared reactions to a family of upbringing seem to be the basis for a substantial fertility relationship. Then too, the awkward way in which sibling fertility had to be measured contributes toward weaker relationships. To allow for differing marriage durations, sibling fertility must be measured as a ratio of observed to expected fertility. Unfortunately these ratios are sensitive to a number of factors, as the following example shows. Think of a couple who want two children; have them in the first two years of marriage; but stop there. If their fertility is measured at the end of this second year, their rating will be well above two other types of couple who also stop at two children: namely the couples who space their two children more widely and secondly the couples who have their two children in the first two years of marriage but whose fertility is not measured until several years of marriage have elapsed. Naturally this looseness between measured fertility and actual completed size of family tends to attenuate fertility relationships.

The fact remains, however, that in the "efficient planner" sample the fertility relationships between fertility of couples and that of siblings reach statistical significance while the relationships involving parents do not.¹⁷ For interpretation little can be done except to repeat a rationale given earlier. It is improbable that the difference arises solely because siblings wield greater influence upon family size ideals than parents. Some fraction of the couples have reacted negatively to the size of their families of upbringing. These negative reactions tend to weaken the fertility relationship between generations. But if these negative reactions are sufficiently shared by brothers and sisters, then they should enhance, not reduce, the fertility relationships between siblings.

This supposition gathers support from the contrasting results in the "efficient planner" and "inefficient planner" subsamples. If the fertility relationship between couples and sib-

¹⁷ Kantner and Potter, *op. cit.*, p. 302 (Reprint p. 1077.)

lings depends primarily on shared reactions to families of origin, then it should diminish among couples whose birth control is so inadequate that they cannot implement their common goals. When socio-economic status is held constant, the relationship actually does dwindle among the "inefficient planners."

Seemingly the fertility relationship between couples and wives' friends has a multiple basis. Friends are in a strategic position to influence family size ideals. Couples of similar fertility are apt to find more in common and to seek each other out as friends. Principles of nonpurposive selection may also operate. Couples of like fertility are led into unintentional association by similar housing needs and common activities, with propinquity then favoring the formations of friendships.

From the data at hand, it is impossible to say which principle contributes the most. One cannot decide whether influences upon family size ideals play a primary or secondary role in the overall relationship. Nevertheless there are several reasons for believing that the principles of purposive and nonpurposive selection together have an important, if not predominant, role.

(1). The main reason for suspecting that selection plays a large part in the relationship of couples' fertility and friends' fertility is the persistence of the relationship in the "inefficient planner" sample. To be sure, it shrinks when proper account is taken of the wider variation in fertility and of the partial dependence of the relationship on socio-economic status. Nevertheless a sharper shrinkage would be expected if the relationship depended heavily upon wives being influenced by their friends. Such influences forfeit much of their power among couples unable to practice efficient birth control.

(2). Evidence has been provided that childless wives tend to have childless wives as friends. It is a little far-fetched to think of a newly married wife coming into the company of several childless wives and then being "influenced" to remain childless herself. It is much easier to think of wives coming together on the basis of common interests that are partly conditioned by the absence of children.

(3). Finally there is the consideration that "friends" in this report doubtless refers in the main but not necessarily to three *current* friends of the wife. Current friends may not be the crucial ones from the standpoint of influencing fertility. This would be especially true for couples who made their basic fertility decisions much earlier.

RECOMMENDATION FOR FUTURE STUDIES

How best may the study of primary group influence upon fertility be advanced? The present report has examined fertility correlations between respondents and their siblings and friends. These correlations are difficult to interpret. For example, how much does the relationship between fertility of siblings and couples depend on mutually influenced ideals of family size and how much upon shared reactions to families of upbringing? It is no easier to tell whether the relationship between fertility of friends and couples rests on friends influencing size preferences or on the tendency of persons with similar family sizes to meet and choose each other as friends. Because of this difficulty, merely duplicating studies like the present one on other samples is not enough.

More direct studies are needed of the ways in which primary groups influence fertility. Before such studies can proceed very far, however, more must be known about family size ideals and their processes. A couple may take years to reach the final and effective decision as to how many children they want. The processes by which vague, tentative ideas about family size grow into firm, highly rationalized goals ought to contain many regularities. Hitherto these regularities have not been studied systematically. Suited for such study would be a panel design, permitting trends to be followed over time. The sample of couples should cover a range of marriage durations, so that these trends may be checked against hypotheses for various marriage points.

Ideals of family size have a long time reference. Not only are they changing through time, but also the influences playing upon them are changing. Therefore subtle means are required

to isolate the influence of any one group. The most successful measures may be indirect ones—e.g., asking for examples of “successful families” from among the respondent’s relatives or near acquaintances. Special situations may provide the largest yields in terms of results. Among these situations might be spouses in disagreement over their family plans or spouses exposed to conflicting advice. In general, there seems to be an important area of study here, but a very difficult one. Considerable ingenuity will be demanded.