cumulation of biomass occurs at any trophic level, when prey species are not consumed at a rate equal to that of production. If we consider the socalled eutrophication coefficient (that fraction of the annual production of prey species that is consumed by predation), the problems of energy transfer in Lake Erie come into better perspective. The Lake Erie basin does not have a consumer species structure (including man) to cope with the productive capacity of the system. More biomass could be removed at all consumer levels. A complicating factor to be considered here is the sporadic, or interrupted, nature of primary production in the lake. Phytoplankton production occurs in periodic pulses; that is, blooms occur in spring, summer, and autumn. In addition, these blooms are characterized by different species composition. The size of a predator population will naturally reflect the lower levels of food available continuously throughout the year. At times of high production, much of the phytoplankton (as well as attached Cladophora) reenter the nutrient cycle as detritus without passing through consumer species. The detritus, as well as the reducer

(bacteria) species themselves, are recycled into the nutrient pool of the phytoplankton. The failure of inorganic nutrient to transfer up and out of the system due to few detritus feeders may be the key to the accumulation of organic matter.

It is a great temptation at this point to introduce calculations on productivity, standing crop, and consumer biomass. I will avoid this because my motive is to provoke a new approach to thinking on the problem of retarding eutrophication. The literature is well endowed with data on productivity in Lake Erie, and the introduction of specific examples would serve only to divert attention away from the idea and to bury it in a quarrel over details. Obviously, the maintenance of an ecological steady state is an ideal that cannot be achieved but that may be approached.

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Abortion and Public Opinion: The 1960-1970 Decade

Surveys show that Americans oppose elective abortion but in certain groups views are changing rapidly.

Judith Blake

In Western countries as well as elsewhere the history of population policy has, with few exceptions, been a chronicle of government efforts to repress birth limitation and reward reproduction (1). The relatively low natality of both continental and overseas Western European peoples is thus a testimony to their powerful motivation to have small-to-moderate size families

in the face of strong governmental pressures to prevent them from doing so (2). In most of the United States, state laws on abortion constitute some of the more repressive of our pronatalist policies. Hence, they are among the many implicit and explicit influences on demographic events that will need revision if population limitation is to be pursued realistically as a na-

tional goal (3). What are the chances of fundamental changes in state laws to remove the legal ban on most kinds of abortion? Whether such modifications will come about primarily through the influence of widespread public opinion, or through the action of particular community groups, is uncertain. However, it is of some importance to know where public opinion stands and the direction in which it is moving.

To answer these questions, I shall analyze the differences and changes in views on abortion among white Americans during the past decade. The data are drawn from five Gallup polls taken during the period 1962 through 1969, and from the National Fertility Study of 1965 conducted by N. B. Ryder and C. F. Westoff (4). The data on abortion from the last three Gallup polls were gathered at my request. The polls sampled both men and women; the National Fertility Study sampled

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married women only. As for age, the polls interviewed persons aged 21 and over; the National Fertility Study interviewed those under age 55. All are national samples.

All the Gallup polls posed three identical questions:

Do you think abortion operations should or should not be legal in the following cases:

- a. Where the health of the mother is in danger?
- b. Where the child may be born deformed?
- c. Where the family does not have enough money to support another child?

At my request, the three polls in 1968 and 1969 added a fourth question:

d. Where the parents simply have all the children they want although there would be no major health or financial problems involved in having another child?

The National Fertility Study had a somewhat different introduction to a total of six questions:

I'm going to read to you a list of six possible reasons why a woman might have a pregnancy interrupted. Would you tell me whether you think it would be all right for a woman to do this:

- a. If the pregnancy seriously endangered the woman's health?
 - b. If the woman was not married?
- c. If the couple could not afford another child?
- d. If they didn't want any more children?
- e. If the woman had good reason to believe the child might be deformed?
 - f. If the woman had been raped?

The difference in the introductory wording to the questions apparently resulted in less acceptance of abortion among respondents to the National Fertility Study than among respondents to the Gallup surveys (except in the case of the "mother's health"). In the National Fertility Survey, respondents were asked whether they would approve an action (that is, termination of pregnancy under a given condition with no mention of its legal status). In the polls, respondents were asked whether they would approve making such action legal. Some respondents might well approve making abortion legal, while not approving an illegal termination of pregnancy. And some respondents may have interpreted the question in the National Fertility Study factually-as a query of whether abortion is in fact "all right" (that is, legal or morally acceptable, or both) under the conditions specified. The wording of the introduction is open to varying

Table 1. Percentage of white men and women in the United States who, in various national polls and surveys taken between 1962 and 1969, disapprove legalization of abortion to preserve the mother's health, if the child might be deformed, and if the parents cannot afford, or do not want, another child. The 1962 Gallup poll was conducted in August. 1965a is the National Fertility Study conducted late in 1965. 1965b is a Gallup poll taken in December, and 1968a and 1968b are Gallup studies done in May and December, respectively. The 1969 Gallup poll was taken in October.

	1962	1965a	1965b	1968a	1968b	1969
Mother's health						
Men	15		13	11	10	13
Women	17	11	16	10	11	14
Total disapproving	16	11	15	10	10	13
Total respondents	(1391)	(4418)	(1428)	(1483)	(1427)	(1448)
Child deformed						
Men	28		29	23	20	23
Women	30	45	32	26	25	27
Total disapproving	29	45	31	. 25	22	25
Total respondents	(1391)	(4418)	(1428)	(1483)	(1427)	(1448)
Money						
Men	73		71	72	63	66m
Women	74	87	76	73	73	69
Total disapproving	74	87	74	72	68	68
Total respondents	(1391)	(4418)	(1428)	(1483)	(1427)	(1448)
No more children						
Men				82	78	77
Women		91		88	85	81
Total disapproving		91		85	81	79
Total respondents		(4418)		(1483)	(1427)	(1448)

interpretation. Despite the somewhat imperfect comparability of the questions asked as between the National Fertility Study and the Gallup polls, I am using the National Fertility Study data, with the exception of responses to questions (b) and (f). As will be seen, the group differentials in the National Fertility Study are similar to those in the Gallup polls, even though the level of approval is lower.

American Attitudes toward Abortion

In some ways, the public's views on abortion over the past decade accord with what might have been expected; in other ways, they appear surprising and paradoxical. It was to have been expected that, among the reasons for abortion, the justification in terms of the mother's health (already a legal ground in many states) would be more acceptable than the economic ground. In the light of widespread discussion of abortion reform, it was to be anticipated that disapproval would have declined, and that it would have declined most among the highly educated. It also seems understandable that in general non-Catholics would disapprove less than Catholics, but that fundamentalist non-Catholics (located in the South and Midwest) would be on a par with Catholics when it comes to disapproval. What may seem surprising, however, is the above-average disapproval by lower-class non-Catholics throughout the decade (and, in some cases, even an increase in disapproval); the greater feminine than masculine disapproval of financial and discretionary reasons for abortion (even when education is held constant); the aboveaverage disapproval by youthful respondents (except in the case of the mother's health); the fact that respondents widely disapprove economic and discretionary reasons for abortion, in spite of the alleged importance of economic and individualistic motives in American life; and, finally, the rapid increase in tolerance by Catholics regarding all justifications for abortion.

I shall begin by presenting the results for white Americans generally over the decade and then divide the population according to Catholic and non-Catholic affiliation. Among non-Catholics, I shall present the results according to the respondents' age and educational achievement, and then, for Catholics and non-Catholics severally, give some attention to geographical variation in views on abortion. Finally, I shall compare public attitudes toward abortion with those on other important issues, to get some indication of the relative support for changes in policy toward pregnancy termination.

Views Held by White Americans by Sex

If the four reasons for abortion are regarded as forming a possible scale, then one might expect that the preser-

Table 2. Percentage of white non-Catholic men and women in the United States who, in various national polls and surveys taken between 1962 and 1969, disapprove legalization of abortion to preserve the mother's health. The 1962 Gallup poll was conducted in August. 1965a is the National Fertility Study conducted late in 1965. 1965b is a Gallup Poll taken in December, and 1968a and 1968b are Gallup studies done in May and December, respectively. The 1969 Gallup poll was taken in October.

	1962	1965a	1965b	1968a	1968b	1969
		М	en			
Age						
Under 30	8		9	8	7	7
30-44	8		9	5	4	8
45+	11		12	. 8	9	13
Education						
College	4		4	2	. 2	5
High school	12		11	10	7	9
Grade school	10		18	7	14	22
Total disapproving	10		11	7	7	11
Total respondents	(520)		(504)	(543)	(543)	(539)
		Wor	nen			
Age						
Under 30	7	8*	11	6	6	7
30-44	6	6	7	4	7	9
45+	13	7	11	. 8	10	13
Education						
College	6	3	5	1 .	3	4
High school	6	6	9	8	9	9
Grade school	20	14	18	12	15	28
Total disapproving	9	7	10	7	8	10
Total respondents	(539)	(3180)	(544)	(548)	(511)	(512)
		Tot	al			
Total disapproving	9	7	10	7	8	11
Total respondents	(1059)	(3180)	(1048)	(1091)	(1054)	(1051)

^{*} The National Fertility Study includes respondents who are under age 21. These are coded here in the "under 30" category.

vation of the mother's health would be the most socially acceptable since it already has widespread legal sanction. In fact, all the studies show that very few men and women disapprove abortion when maternal health is the issue (Table 1); throughout the decade between 10 and 16 percent of the respondents disapprove. Curiously, Table 1 shows that respondents seem more concerned with the health of the mother than with the health of the

Table 3. Percentage of white non-Catholic men and women in the United States who, in various national polls and surveys taken between 1962 and 1969, disapprove legalization of abortion if the child might be deformed. The 1962 Gallup poll was conducted in August. 1965a is the National Fertility Study conducted late in 1965. 1965b is a Gallup poll taken in December, and 1968a and 1968b are Gallup studies done in May and December, respectively. The 1969 Gallup poll was taken in October.

	1962	1965a	1965b	1968a	1968b	1969
		Me	n			
Age						
Under 30	28		24	. 28	22	16
30–44	26		28	17	19	21
45+	17		23	19	14	20
Education						
College	19		18	16	14	14
High school	21		25	22	16	19
Grade school	25		30	19	23	28
Total disapproving	21		• 24	20	17	20
Total respondents	(520)		(504)	(543)	(543)	(539)
		Won	ien			
Age						
Under 30	22	42*	32	15	16	16
30-44	22	39	26	22	22	21
45+	22	36	24	18	23	24
Education						
College	15	27	21	13	10	9
High school	21	41	26	23	24	21
Grade school	30	55	31	15	27	42
Total disapproving	22	40	26	19	21	21
Total respondents	(539)	(3180)	(544)	(548)	(511)	(512)
		Tota	al			
Total disapproving	22	40	25	19	19	20
Total respondents	(1059)	(3180)	(1048)	(1091)	(1054)	(1051)

^{*}The National Fertility Study includes respondents who are under age 21. These are coded here in the "under 30" category.

child, even though the child will have longer to live, or perhaps "deformity" is less clear than "health" as a concept. One can have a deformity that amounts to little or much, but "to preserve the health of the mother" seems unambiguously serious. By the end of the decade, disapproval of abortion to prevent deformity was expressed by about 25 percent of the respondents, in contrast to 13 percent disapproving in the interest of maternal health. Over time, some decline in disapproval of child deformity as a justification is evident.

When we turn from maternal health and child deformity to economic hardship as a justification for pregnancy termination (Table 1), the rise in disapproval is great. As compared with 13 percent for the mother's health, and 25 percent for child deformity, disapproval for economic reasons characterizes about two-thirds of all respondents. Disapproval has declined somewhat during the decade, but it is clear that Americans generally are preponderantly negative toward economically practical reasons for abortion. It is hardly surprising, therefore, that the idea of purely elective abortion ("where the parents have all the children they want") should elicit disapproval at the end of the decade, from about 80 percent of the white population. Indeed, this latest figure is lower than the level of disapproval early in 1968. It is worth noting that women are generally more disapproving for all four reasons than men are.

The strikingly negative views expressed in these surveys toward pregnancy termination for economic and discretionary reasons naturally make one wonder how the liberalization of abortion will ever come about. In attempting to answer this question, I shall turn first to non-Catholics. Moreover, before I consider attitudes toward the most controversial justifications for abortion, I shall show how segments of the population differ (by education and age) regarding the most accepted reasons.

Views Held by Non-Catholics

Confining ourselves to non-Catholics, we find somewhat lessened disapproval of abortion to preserve the mother's health and prevent child deformity (Tables 2 and 3) than was the case when Catholics were included. If we

average the last two surveys, disapproval on grounds of the mother's health amounts to less than 10 percent (as opposed to 12 percent for all religions), and on grounds of child deformity to less than 20 percent (as opposed to 24 for the religious groups combined). There are significant variations by educational level (Tables 2 and 3). The most disapproval comes from respondents in the lowest educational brackets. With regard to the mother's health, an average of the last two surveys shows that only 3 percent of college-educated men disapprove, as against 18 percent of the grade-school educated. Among women, the percentages are 4 and 22, respectively. By the end of the decade, respondents with an elementary education appear, if anything, to have become more hostile to abortion for health reasons. As for child deformity, an average of the last two surveys shows it to be disapproved by 14 percent of college-educated men, but by 26 percent of the grade-school educated. For women, disapproval amounts to 10 percent of the collegeeducated and 35 percent of those with an elementary education. There is also a widening gap over time between the college- and grade-school educated. For example, if we compare an average of the two earliest Gallup surveys (1962 and 1965b) and the two latest (1968b and 1969) by educational level, we find that the difference between the grade-school and college-educated widened from 9 to 12 percentage points for men, and from 13 to 25 percentage points for women. Turning to age differences, we see that those aged 45 and over of both sexes disfavor abortion on grounds of the mother's health more than those under 45. However, with regard to child deformity, this age pattern tends to reverse itself. Over the decade, the young are, by and large, more likely to be negative than the old.

Interestingly enough, disapproval of legalizing abortion on economic grounds is lessened very slightly by eliminating Catholics from the population under consideration (Table 4). For example, in 1969, 66 percent of all men disapproved and 64 percent of non-Catholic ones did so. Among women, the figures were 69 percent and 67 percent, respectively. Moreover, disapproval declined by only a few percentage points over the 10-year period. Throughout the decade, women objected more than men. A sharp difference among educational groups again

appears. The difference was particularly large by the end of the decade, because disapproval declined markedly among the highest class but remained stable or increased among the lowest class. An average of the two latest surveys in Table 4 (1968b and 1969) shows that about two-thirds of the men with an elementary or a high-school education rejected the economic justification for abortion, whereas among the college-educated fewer than 50 percent did so. Among women, threefourths of the less educated, but only a little over 60 percent of the collegeeducated, were negative. The sex difference in attitude within each educational category also tended to increase during the period. In those educational strata where women disapproved more than men early in the decade, the sex differential remained or increased over time, and where it did not exist, it developed. The net result is that at all educational levels (but particularly at the college and grade-school levels), women now object to abortion for economic reasons decidedly more than men. An examination of opinions by age does not lend support to the notion that those under 30 are an avant-garde in attitudes about abortion reform. Early in the decade, 75 percent of the young men and 80 percent of the young women (an average of Gallup surveys for 1962 and 1965b in Table 4) were opposed to permitting abortion on economic grounds, whereas among those 45 and over, only about two-thirds of both men and women were opposed. The age differential is now disappearing, but it is not yet entirely gone, and a sex differential still exists (1968b and 1969), due to the fact that the disapproval of men has fallen more rapidly than that of women.

As with the previous question on abortion justified by economic hardship, so with the issue of elective aboreliminating Catholics lessens negativism by only 1 or 2 percentage points. It is still true that almost 80 percent disapprove (Table 5). Moreover, on the average, women are more disapproving than men, although women would presumably benefit the most from such legislation. Notwithstanding these high levels of disapproval by non-Catholics, it is clear that opinions concerning discretionary pregnancy termination are changing rapidly over time, though not equally by educational level. The class with a college education has changed most rapidly, while the class with only an elementary education showed the least change. Because of this differential rate of change, social class differences have

Table 4. Percentage of white non-Catholic men and women in the United States who, in various national polls and surveys taken between 1962 and 1969, disapprove legalization of abortion if the parents cannot afford another child. The 1962 Gallup poll was conducted in August. 1965a is the National Fertility Study conducted late in 1965. 1965b is a Gallup poll taken in December, and 1968a and 1968b are Gallup studies done in May and December, respectively. The 1969 Gallup poll was taken in October.

	1962	1965a	1965b	1968a	1968b	1969
		Me	n			
Age			*			
Under 30	82		67	69	62	61
30-44	75		74	67	63	63
45+	68		67	70	57	65
Education						
College	70		63	59	47	50
High school	74		72	73	64	71
Grade school	69		68	74	66	66
Total disapproving	72		68	69	60	64
Total respondents	(520)		(504)	(543)	(543)	(539)
		Won	nen			
Age						
Under 30	83	88*	76	70	76	62
30-44	72	85	78	73	75	68
45+	66	84	71	67	68	68
Education						
College	69	80	67	64	62	61
High school	74	88	78	73	74	66
Grade school	66	85	67	66	78	76
Total disapproving	71	86	74	69	72	67
Total respondents	(539)	(3180)	(544)	(548)	(511)	(512)
		Tot	al			
Total disapproving Total respondents	71 (1059)	86 (3180)	71 (1048)	69 (1091)	66 (1054)	65 (1051)

^{*}The National Fertility Study includes respondents who are under age 21. These are coded here in the "under 30" category. In the age group "under 21," 91 percent disapproved, and in the group 21-29, 88 percent disapproved.

Table 5. Percentage of white non-Catholic men and women in the United States who, in various national polls and surveys taken between 1965 and 1969, disapprove legalization of abortion if no more children are desired. The 1965 data are from the National Fertility Study conducted late in the year; 1968a and 1968b are Gallup studies done in May and December, respectively. The 1969 Gallup poll was taken in October.

	1965	1968a	1968b	1969
	Λ	1en		
Age				
Under 30		76	74	66
30-44		80	77	7 9
45+		82	7 5	77
Education				
College		72	69	63
High school		86	80	83
Grade school		81	76	79
Total disapproving		81	75	76
Total respondents		(543)	(543)	(539)
	W	omen		
Age				
Under 30	92*	90	84	82
30-44	89	89	85	80
45+	88	86	83	7 7
Education				
College	83	80	7 6	70
High school	92	91	86	81
Grade school	89	90	84	86
Total disapproving	90	88	84	79
Total respondents	(3180)	(548)	(511)	(512)
	T	otal		
Total disapproving	90	84	79	78
Total respondents	(3180)	(1091)	(1054)	(1051)

^{*} The National Fertility Study includes respondents who are under age 21. These are coded here in the "under 30" category. In the age group "under 21" 93 percent disapproved, and in the group aged 21-29, 92 percent disapproved.

widened. Between May 1968 and October 1969, the percentage point difference between the grade-school and college-educated rose from 9 to 16 among men, and from 10 to 16 among women. When broken down by age, the data are somewhat surprising. Young women (those under 30) consistently disapprove elective abortion more than older women, although the disapproval of all age groups has lessened over time. Young men, on the other hand, are consistently more in favor of elective abortion, in the three surveys, than older men. It is nonetheless true that, even among young men, two-thirds disapproved. Only among college-educated men (of all ages combined) does disapproval fall to as low as 63 percent.

Non-Catholics and Abortion: Summary and Interpretation

The data presented here enable us to see which reasons for abortion already have strong and relatively stable public support, and which are in the process of gaining adherents. Abortion to preserve the mother's health or prevent child deformity may be said to be publicly well accepted, while abortion for discretionary ("selfish") reasons receives minimal but, nonetheless,

rapidly growing support. Legal freedom of elective abortion, however, is rejected by the non-Catholic majority.

Among non-Catholics, the collegeeducated men are quite clearly the most favorable toward freedom of abortion. I have shown in other papers that for at least 30 years, men of this class have maintained modest familysize goals and have favored widespread distribution of birth-control information. Insofar as any support exists for the distribution of birth-control materials to teen-age girls, it comes from these men (3, 5). Apparently, many of them desire a limited commitment to reproduction, are ready to see all restrictions on reproductive choice abolished, and are psychologically prepared to take a morally relaxed view of sexual behavior. Widespread airing of the issues concerning abortion in both the mass media and state legislatures throughout the country evidently reinforces long-standing masculine attitudes toward sex and the family and encourages men to express them openly.

In trying to understand these attitudes, we may surmise that upper-class men have much to gain and very little to lose by an easing of legal restrictions against abortion. For some time, these men seem to have been satisfied with relatively small families extending over a limited period in their lives. Thus

the increased availability of abortions is not likely to damage whatever interest they have with respect to the family. Furthermore, their sexual freedom has been curtailed, both within marriage and outside it, by restrictions on contraception and pregnancy termination, since as a class they are especially vulnerable to being held financially and socially responsible for accidental pregnancies. For this reason, they are likely to favor a lessening of those restrictions. And when one takes into account the fact that birth-control "reforms"-whether advanced contraceptive methods like the pill and the coil, or abortion itself-cost men virtually nothing, their positive attitude toward legalizing abortion becomes even more plausible. After all, it is women who must undergo abortions, not men. In fact, since modern birthcontrol methods relieve men of all risk, discomfort, and inconvenience, it would be surprising if masculine opinion concerning them did not reflect growing approval.

When we turn to college-educated women in the non-Catholic population, we see that they do not share an equally positive attitude toward elective abortion. Yet we might have expected the attitude of women to be more positive than that of the men, since the inability to terminate an unwanted pregnancy presumably inconveniences women more than men. However, I have shown elsewhere that upper-class women desire somewhat larger families than upper-class men, and are generally less enthusiastic about introducing complete freedom of choice into the reproductive sphere (3, 5). For example, well-educated women are no more likely to approve contraceptives for unmarried teen-age girls than are poorly educated women, and they are far less likely to approve of them than are well-educated men (3, p. 527).

In attempting to account for the seemingly paradoxical views of upper-class women, we must bear in mind their greater involvement than men with reproduction as a career. Motherhood is the principal career for most women, and hence they may well experience ambivalence and uncertainty when confronted by major changes in the conditions of this career. Restrictions on reproductive choice are part of the mystique surrounding the "occupation" of motherhood. Occupational mystiques are, of course, not unique to the feminine sex; their self-serving

function has been widely recognized in other spheres. To a very real extent, restrictions on abortion bolster the public sentiment that motherhood is "natural" and inevitable, rather than planned and discretionary. To legalize elective abortion is to drastically undercut women's freedom to create a respected occupational niche for themselves simply by being careless. In a sense, the battle of the sexes at this social level consists precisely in the different vantage points from which men and women approach sexual relations. What is for men a recreation and diversion is for women a potential source of income, social status, and achievement. At the same time, the inconvenience and risk in making reproduction completely discretionary is being passed on to women. Their uncertainty concerning elective abortion is therefore understandable.

It could of course be argued that women's more negative attitudes toward discretionary abortion as compared with men's are not linked directly to sex differences in familial and occupational interests, but are indicative rather of a more generalized feminine conservatism. To answer this question definitively goes beyond the scope of this paper. However, many data suggest that such a conclusion cannot be taken for granted. For example, with respect to opinions concerning the Johnson Administration's advancement of racial integration, in seven polls women consistently expressed the view less often than men that Johnson was pushing "too fast," and women evinced more satisfaction with his integration policies (6). Moreover, men's and women's views on a variety of racial questions, over and above the speed of integration, have been found to be strikingly similar (7). Sometimes women are more favorable toward direct action for the purpose of effecting social change than men are. For instance, more women than men would approve a clergyman in their church taking part in protest marches on civil rights issues (8). Nor can it be alleged that women are less informed than men on medical issues and hence more likely to reject an unfamiliar notion such as abortion. If anything, women appear to pay more attention than men when the issue relates to reproduction and almost equally as much attention as men when the question relates to activities, such as smoking, in which women participate less than men. Surveys have

Table 6. Percentage of white Catholic men and women in the United States who, in various national polls and surveys taken between 1962 and 1969, disapprove legalization of abortion if the mother's health is in danger, or if the child might be deformed.

	1962	1965a	1965b	1968a	1968b	1969
Mother's health				-		
Men	33		22	20	17	19
Women	39	22	31	19	18	22
Total disapproving	36	22	27	19	18	20
Total respondents	(332)	(1238)	(380)	(392)	(373)	(397)
Child deformed						
Men	51	*	24	33	30	32
Women	54	57	26	45	33	41
Total disapproving	53	57	25	39	32	37
Total respondents	(332)	(1238)	(380)	(392)	(373)	(397)

found, for example, that more women than men have heard about artificial insemination, and that about an equal number of both sexes have heard of a report on the effects of cigarette smoking (9).

My interpretation of why resistance to enhanced availability of abortion is greater among women than among men of the upper class is given credence by the even more pronounced resistance among the lower classes of both sexes (10). In a sense, the "deviant" attitude is that of the upper-class male, and it is his desire for a small family, his instrumental view of teenage sexual behavior, and his willingness to approve convenience methods of birth control that require explanation. The remainder of the population holds views that are generally in line with existing traditional and legal norms of sexual behavior and pronatalist constraints. These norms, to an observer, may well appear incompatible with many of the economic and status interests of the individuals they affect. Thus it is easy to see, for example, that many women and poor people would be "better off" with no children, or few children, or fewer children than they have. What is perhaps less apparent is that the norms supporting such reproductive behavior are in line with, and, indeed, a part of the many noneconomic goals and interests of most of the population-in particular, a commitment to family roles and rewards. Since the majority of women and less advantaged persons derive most of their lifetime rewards from the family complex, and from the norms upholding it, and at the same time experience little that deeply challenges this institutional arrangement, they tend to support it unconditionally. In particular, they appear loathe to admit the legitimacy of laws which would allow individuals the right to "turn off" such a hallowed institution as the family through the simple mechanism of an abortion. The legal restriction on abortion (and on many other aspects of sexual and reproductive behavior) carry a message for them-the state's recognition and support of their life's work. A lifting of these restrictions carries a message as well—the state's relative indifference to this work. To most Americans the potential gain in convenience for a few is not sufficient compensation for the probable loss of a sense of meaning for the many. should sexual behavior and reproduction become a matter of increasing legal indifference. Among people who have few independent ways of feeling important, being an object of institutionalized restraint indicates that "somebody" cares how they behave, that they have not been totally forgotten.

Just why younger people so strongly disapproved abortion for economic reasons in the early 1960's is not easy to understand. When Westoff and his colleagues found less desire for abortion reform among younger than among older women in the National Fertility Study (which sampled only women), they interpreted it to mean that the young do not have the same pressure of family obligations as do the more mature (4). Data from Gallup polls on both sexes over time indicate that the explanation may involve more than simply the effect of the life cycle. There appears to be a secular trend toward lessened disapproval of abortion affecting all ages, and affecting younger people more than older ones. This trend has taken place during a period of decreasing, rather than increasing, fertility pressure, since young men and women at the end of a decade of declining birth rates were less burdened with offspring than were young people at the beginning of

Table 7. White Catholic men and women in the United States in 1969 who approve legalization of abortion if the mother's health is in danger, or if the child might be deformed. Percentages given according to their knowledge of whether the Catholic Church allows abortion for these reasons.

	Church allows	Church does not allow	Don't know	Total approving abortion
Mother's health	- Control of the cont			
Men	11	74	15	100 (142)
Women	25	62	13	100 (143)
Total	18	68	14	100 (285)
Child deformed				
Men	7	77	16	100 (109)
Women	13	70	17	100 (94)
Total	10	74	16	100 (203)

it. One may ask whether the late-decade younger generation has not developed demanding standards of birth prevention-standards that take off from the 100 percent effectiveness of the pill as a base line. Youthful tolerance of imperfection in birth-control practice may now be far less than was that of the "pre-pill" youngsters who began the decade. Now, a birth that is not intended is not simply an inconvenience, or even a tragedy, it is an affront to standards of consumption in the birth-prevention sphere. If 100 percent effectiveness in birth prevention (rather than mere pregnancy planning) is becoming a standard, it seems that attitudes toward abortion as a means of accomplishing this goal should be affected favorably-particularly in an era of increased exposure to sexual intercourse, and, on this count, increased risk of pregnancy.

Views Held by Catholics on Abortion

Let us now examine the views held by Catholics. In general, they disapprove of legalizing abortion more than non-Catholics, but the difference is less than might be expected when one considers that the Catholic Church unconditionally bans the induced termination of pregnancy. The largest differences between Catholics and non-

Catholics occur with regard to justifications that are least disapproved by both religious groups—the mother's health and child deformity-because non-Catholics are so close to unanimous in their approval of these reasons for abortion. However, although not equaling the views of non-Catholics, the amount of disapproval by Catholics has decreased rapidly since the beginning of the decade. The modest religious differentials with regard to justifications in terms of financial hardship and a desire to terminate childbearing are more a testimony to the negativism of non-Catholics than to a positive attitude by Catholics.

At the beginning of the decade, over a third of the Catholics surveyed disapproved legal abortion to preserve the mother's health, but by the end of it only a fifth were disapproving (Table 6). Moreover, with regard to abortion to prevent possible child deformity, Catholic disapproval also declined rapidly from over half disapproving to just over a third. Throughout the period Catholic women disapproved this justification more than men. One possible interpretation of the laissez-faire attitude toward abortion on the part of so many Catholics is that they are uncertain of the Church's position on this issue. The views of the Church on pregnancy control became increasingly ambiguous during the decade, giving

Table 8. Percentage of white Catholic men and women in the United States who, in various national polls and surveys taken between 1962 and 1969, disapprove abortion if the parents cannot afford another child, or do not want more children.

	1962	1965a	1965b	1968a	1968b	1969
Money						
Men	78		77	81	7 2	71
Women	85	91	83	81	78	76
Total disapproving	82	91	80	81	7 5	74
Total respondents	(332)	(1238)	(380)	(392)	(373)	(397)
No more children						
Men				85	84	80
Women		94		88	88	87
Total disapproving		94		86	86	83
Total respondents		(1238)		(392)	(373)	(397)

rise to speculation that they had been eased, and it is possible that many Catholics believed that some relaxation of strictures against abortion was taking place as well. With this possibility in mind, I requested that the following two questions be inserted in the 1969 Gallup poll:

Do you think the following statements are true or not:

a. The Catholic Church allows abortion if the mother's health would be endangered by having another child.

b. The Catholic Church allows abortion if there is a possibility that the child may be born with a serious deformity or handicap, such as might occur if the mother had German measles.

These questions followed the four standard questions about legalizing abortion. As may be seen from Table 7, among Catholics approving the legalization of abortion for reasons of the mother's health, 74 percent of the men and 62 percent of the women say they know that the Church does not allow abortion for this reason. Interestingly enough, however, more than twice as many Catholic women as Catholic men (25 as against 11 percent) claim that the Church does allow abortion for this reason. It is possible, of course, that more women than men are misinformed, but it seems unlikely. Catholic women are, as a group, more apt to attend church and go to confession than Catholic men (11). A more reasonable explanation is that women wish to appear to conform to norms more than men, even when they deviate. Their solution to this dilemma is to redefine the norms so that their views no longer seem to be out of line. Turning to the extent of knowledge among Catholics of the Church's position on abortion to prevent child deformity (Table 7), we find that knowledge of the ban against abortion for this reason is even more widespread than knowledge of the ban against abortion to preserve maternal health. Among those who approve the legalization of abortion, 77 percent of the men and 70 percent of the women say they know that the Church does not allow it for this reason. It is again of interest to note that the percentage of women claiming that the Church does allow such abortions is approximately double the percentage of men making this claim. It is thus apparent that American Catholics, although they approve abortion somewhat less than non-Catholics, nonetheless disagree with the notion that,

in case of danger to the mother or possible child deformity, abortion should be illegal. The survey data, obviously, do not mean that these Catholics have said that they would actually resort to pregnancy termination in such circumstances, but simply that they think legal abortion should be available to those who wish it.

As with non-Catholics, disapproval of legal abortion for economic reasons is high among Catholics, with 76 percent of the women and 71 percent of the men disapproving in 1969 (Table 8). Nonetheless, such disapproval has declined consistently over time and, by 1969, Catholic disapproval was, on the average, only 10 percentage points greater than non-Catholic—74 percent as against 64 percent. It is interesting that the economic justification for abortion elicits a sex differential among Catholics, with women disapproving more than men.

It is hardly surprising that most Catholics—87 percent of the women and 80 percent of the men-condemn elective abortion—abortion to prevent the birth of an unwanted child (Table 8). However, disapproval among Catholic men has declined since 1968, so that a sex differential is emerging. What does seem noteworthy is that Catholic disapproval of elective abortion is not even greater, given the Church's total ban on abortion. In fact, Catholics and non-Catholics hold similar attitudes on this issue, with 79 percent of non-Catholic women and 76 percent of non-Catholic men disapproving.

We are thus reminded that lay Catholics can sharply take issue with the views of their Church and that it is an exaggeration to think of American Catholics as representing, in fact, a blueprint of Church doctrine (12). Even on issues where the Church takes a specific doctrinal stand, Catholics may differ less from non-Catholics than non-Catholics differ among themselves by socioeconomic status. A consideration of geographical variation in attitudes toward abortion is another case in point.

Geographical Variation in Attitudes on Abortion

It has been convenient thus far to analyze attitudes toward abortion among various religious, social, economic, and age groups in the country as a whole. Abortion laws, however,

Table 9. Percentage of white Catholic and non-Catholic men and women who disapprove legalization of abortion to preserve the mother's health, if the child might be deformed, and if the parents cannot afford, or do not want, another child. Tabulated by region of the United States and showing results of combined polls taken in December 1968 and October 1969.

Region and justification	Non-	Catholic	Catholic		
Region and Justineation	Men	Women	Men	Women	
Mother's health					
North/East	7	8	16	14	
Central	9	12	20	30	
South	12	11	*	*	
Mountain/Pacific	6	6	*	*	
Total disapproving	9	9	18	20	
Total respondents	(1082)	(1023)	(374)	(39 6)	
Child deformed					
North/East	12	14	27	30	
Central	20	26	36	53	
South	24	26	*	*	
Mountain/Pacific	15	16	*	*	
Total disapproving	19	21	31	37	
Total respondents	(1082)	(1023)	(374)	(396)	
Money					
North/East	52	59	70	71	
Central	66	74	70	87	
South	73	81	*	*	
Mountain/Pacific	49	56	*	*	
Total disapproving	62	70	71	77	
Total respondents	(1082)	(1023)	(374)	(396)	
No more children					
North/East	70	70	82	85	
Central	78	88	82	93	
South	84	91	*	*	
Mountain/Pacific	67	. 72	*	*	
Total disapproving	76	82	82	88	
Total respondents	(1082)	(1023)	(374)	(396)	

^{*} Insufficient cases for analysis.

are state laws, and thus it is pertinent to examine whether regional variations exist in public attitudes. Table 9 presents the views of Catholics and non-Catholics on abortion in four regions—North/East, Central, South, and Mountain/Pacific—from the two latest surveys combined. The data not only show the regional variation in attitudes, but help as well to identify the attitudes of the regionally concentrated non-Catholics among whom religious conservatism and fundamentalism are strong.

Table 9 shows clearly that among non-Catholic Americans, attitudes toward abortion differ substantially by region-particularly when the more controversial justifications for it are considered. The Far West and the East lead in support for abortion reform. If the country were made up solely of non-Catholics from these two regions, only half the male population would disapprove abortion on grounds of financial hardship, instead of 62 percent of all non-Catholic males and 65 percent of all males. Among women, about 58 percent would disapprove, as compared with 70 percent of all non-Catholic women and 71 percent of all women. The South is the bastion of conservative attitudes toward abortion. In fact, disapproval of abortion for economic reasons and of elective abortion is higher among non-Catholics in the South than among Catholics in the country as a whole. Whereas 73 percent of men and 81 percent of women in the non-Catholic South disapprove financial reasons for legalizing abortion, corresponding figures for Catholics in the nation are 71 and 77 percent. With respect to elective abortion, 84 percent of men and 91 percent of women disapprove among non-Catholic Southerners, as compared with 82 percent of Catholic men and 88 percent of Catholic women in the country as a whole. Disapproval of abortion for these two reasons among non-Catholics in the Midwest closely parallels that among Catholics nationally. In sum, outside of the non-Catholic East and Far West, 70 percent of American men and close to 80 percent of American women disapprove abortion on grounds of financial hardship, and about 82 percent of the men and almost 90 percent of the women disapprove elective abortion.

How Much Approval Is Necessary?

It is possible to argue, from the data presented in this paper, that a nationwide elimination of antiabortion

laws would be unpopular with a majority of Americans. If the Supreme Court became progressively involved in ruling on the constitutionality of state legislation concerning abortion, for example, a decision on its part favoring elective abortion would not accord with the views of over 80 percent of the population.

Yet to base present and future abortion legislation on existing public opinion seems illogical. Such opinion is itself shaped, in part, by existing definitions of legality which come to us from a pronatalist past. Under the impact of increasing public discussion of abortion during the past decade, the views of some groups in the population, as we have seen, have undergone a rapid liberalization. Moreover, a reform of abortion legislation would not require nonapprovers to take any action, but would simply permit a selfselected group of approvers to take the action they desire. An even more important point is that legalized elective abortion would affect fewer people, and would be disapproved by no more, than many other recent social changes initiated under the impetus of judicial rulings on constitutionality. If we consider just two of these—the insistence of the Supreme Court on the disestablishment of religion in public schools, and on rapid school integration—we have a more objective and realistic standard against which to judge the relationship between public opinion and abortion legislation.

In August 1962 the Gallup poll posed the following question: "Do you approve or disapprove of religious observances in public schools?" Seventynine percent of the adult population approved, and only 14 percent disapproved (13). In August 1963 the poll again queried the American public on the issue: "The U.S. Supreme Court has ruled that no state or local government may require the reading of the Lord's Prayer or Bible verses in public schools. What are your views on this?" Seventy percent of adult Americans disapproved, and 24 percent approved (14). The general level of disapproval of elective abortion by the end of the decade approximated this level of disapproval of the Supreme Court decision on prayers in school about the time the decision was handed down. And the level of disapproval of abortion on grounds of financial hardship is considerably lower than the disapproval of abolishing school prayers.

In order to tap opinion concerning the Supreme Court's order in 1955 that its 1954 ruling on racial desegregation in public schools be carried out "with all deliberate speed," the Gallup poll asked (in May 1956) the following set of questions (14):

The Supreme Court has ruled that racial segregation in the public schools is illegal. Which of these points of view comes nearest to your way of thinking about the problems of segregation?

- 1) The government should try to bring about the integration of white and Negro children gradually—that is, over a long period of years.
- 2) The government should do everything it can to see that white and Negro children in all parts of the country go to the same public schools within the coming year.

Seventy-one percent of the national sample preferred "gradual" desegregation, and 1 in 4 of these volunteered that they never wanted integration to come about (14, p. 139). Only 18 percent wished to see integration take place "this year." It thus appears that the country as a whole did not approve the Supreme Court decision on school integration much more than it currently approves elective abortion. Yet in the face of such opinion the Supreme Court decision was made, and made with the realization that its implementation probably would require a mammoth and costly rearrangement of public school facilities throughout the country. The legalization of elective abortion would mean few changes for very few people.

Conclusion

Our examination in this article of the opinions of various groups in the population on the legalization of abortion contradicts the conclusions usually drawn by those who argue on a priori ideological grounds that certain groups should support legalized abortion in the United States. According to the latter, abortion should be supported most strongly by the less advantaged and by women (15). Clearly, this is not the case. Legalized abortion is supported most strongly by the non-Catholic, male, well-educated "establishment." I have explained this finding in terms of the occupational and familial roles that such men play, in contrast with the roles performed by women in their own class, and by men and women in classes beneath them.

We may conclude, therefore, that

changes in abortion laws, like most social changes, will not come about by agitation at the grass roots level, or by the activity of righteously indignant individuals who cannot currently circumvent existing statutes. Rather, it is to the educated and influential that we must look for effecting rapid legislative change in spite of conservative opinions among important subgroups such as the lower classes and women. These subgroups would probably avail themselves of the enhanced freedom to have abortions once it was secured for them by those whose social investment in traditional family norms and statuses is more limited. But these subgroups will not necessarily accord widespread approval to the practice of discretionary abortion, nor is it clear that the population generally will do more than tolerate abortion as a necessary evileven if it is relied on extensively as a stopgap measure. This popular ambivalence, plus the cumbersomeness of state-by-state change in abortion laws, suggest that a Supreme Court ruling concerning the constitutionality of existing state restrictions is the only road to rapid change in the grounds for abortion. Interestingly, such a ruling would be no more at variance with public opinion than some other famous judicial decisions have been. Hence, if we heeded only the fact that 80 percent of our white population disapproves elective abortion, our expectations concerning major reform would be too modest. We must also take into account the more positive views of a powerful minority; and we must bear in mind that changes far more radical than this one have been effected lawfully by such minorities, even when the issues enjoyed no more public support than currently exists for elective abortion.

References and Notes

- 1. These efforts have been evident not only in legal restrictions on contraception and abortion, but also in legal penalties for deviation from familial roles (deviations such as non-marriage, childlessness, and female labor force participation), direct cash payments for conformity, and mass propaganda regarding the primacy of the family and women's role as housewife and mother.
- as nousewite and mother.

 2. D. V. Glass, Population Policies and Movements in Europe (Clarendon Press, Oxford, 1940); in Research in Family Planning, C. V. Kiser, Ed. (Princeton Univ. Press, Princeton, N.J., 1962), pp. 231–261; Population Stud. 19, 221 (1966). Also, C. Watson, ibid. 5, 261 (1952); ibid. 7, 14 (1953); ibid. 7, 263 (1954); ibid. 8, 46 (1954); ibid. p. 152. Additional documentation may be found in N. E. Himes, Medical History of Contraception (Gamut Press, New York, 1963), especially pp. 186–330; U.N. Dept. of Social Affairs, Economic Measures in Favour of the Family (United Nations, New York, 1952); H. M. Groves, Federal Tax Treatment of the Family (Brookings Institu-

- tion, Washington, D.C., 1963); D. T. Smith, Ed., Abortion and the Law (Western Reserve Univ. Press, Cleveland, Ohio, 1967).
- 3. For further discussion of the need to modify existing pronatalist influences in the States, see J. Blake, Science 164, 522 (1969), pp. 528-529 in particular.

 4. Data on abortion from the National Fertility
- Study have appeared in a scalogram analysis; see C. F. Westoff, E. C. Moore, N. B. Ryder, Milbank Mem. Fund Quart. 47, 11
- J. Blake, Population Stud. 21, 159, 185 (1967).
 H. E. Gaudet, Public Opin. Quart. 32, 517
- (1968).

- . -, *ibid.*, p. 696. -, *ibid.* **31**, 658 (1967). -, *ibid.* **27**, 497 (1963).
- This finding accords with data from a National Opinion Research Center survey on attitudes toward abortion conducted in 1965 and analyzed by A. S. Rossi, in *The Case for* Legalized Abortion Now, A. F. Guttmacher, Ed. (Diablo Press, Berkeley, Calif., 1967), pp. 26-53. Rossi says, "Participants to abortion conferences, TV documentaries, and minutes of discussions by abortion reform committees often make the point that the only differences between the middle-class and working-class woman's abortion experience is the former's ability to buy the services of a skilled physician. This assumes that if the working-class woman could either afford to pay the price, or could obtain inexpensive abortions legally

- in an accredited hospital, that this class inequity would disappear. Our data on the strong association between educational attainment and liberal attitudes toward abortion suggest this may be an oversimplified view" (p. 48).
- view" (p. 48).

 11. The 1960 Growth of American Families Study found that, among Catholic husbands, 19 per-cent never received the sacraments, 15 percent received them once a year or less often, and 42 percent received them once a month and 42 percent received them once a month or more, Among Catholic wives, only 13 percent never received them, 9 percent received them once a year or less, and 54 percent received them once a month or more [P, K, Whelpton, A. A. Campbell, J. E. Patterson, Fertility and Family Planning (Princeton Univ. Press, Princeton, N.J., 1961), p. 83]. A question on church attendance during the previous 7 days esked on pine Gallun polls be previous 7 days, asked on nine Gallup polls between 1947 and 1961, showed that about 43 percent of men but approximately 50 percent of women attended during the week prior to each survey. In 1963, Roper found that 43 percent of women but only 32 percent of men attended church once a week during the month prior to the survey, and 35 percent of men but only 26 percent attend at all [H. E. G E. Gaudet, Public Opin.
- Attend at all [H. E. Gaudet, Public Opin. Quart. 28, 671 (1964)]. For an initial development of this point, see K. Davis and J. Blake, Commentary 29, 115 (1960). More recent detailed evidence may be found in J. Blake, Population Stud. 20, 27 (1966).

- 13. H. E. Gaudet, Public Opin. Quart. 29, 555 (1965).
- , ibid. **26**, 140 (1962).
- ibid. 26, 140 (1962).
 See, for example, A. F. Guttmacher, in The Case for Legalized Abortion Now, A. F. Guttmacher, Ed. (Diablo Press, Berkeley, Calif., 1967), pp. 1-14; M. Mannes, ibid., pp. 54-60; and G. Hardin, ibid., 69-86. Other articles emphasizing the discriminatory treatment of women and the less advantaged in abortion statutes and practice are: E. M. Schur, Ann. Amer. Acad. Polit. Soc. Sci. 376, 136 (1968); H. Rosen, in Abortion and the Law, D. T. Smith, Ed. (Western Reserve Univ. Press, Cleveland, Ohio, 1967), pp. 72-106.
- 16. I acknowledge support from the Ford Foundation and from a National Center for Health Services Research and Development training grant (8 T01 HS00059) to the Department of Demography, University of California, Berkeley. I also thank Irving Crespi of the Gallup Poll for assisting me in the collection of most of the data in this paper, and, as well, H. Nedel and W. Duncan, of the University of California's Survey Research Center in Berkeley, for their help in data processing. C. F. Westoff of Princeton University has my appreciation for making available the master tape of the National Fertility Study of which he and N. B. Ryder were codirectors. N. Tomasevich has made numerous editorial suggestions and K. Davis has given me the benefit of his critical acumen and unerring sense of relevance.

NEWS AND COMMENT

Nader and the Scientists: A Call for Responsibility

Consumer advocate Ralph Nader has launched a drive to encourage scientists, engineers, and other professionals to "blow the whistle" on destructive or unethical practices by the organizations that employ them. The campaign, which was introduced to the public at a "Conference on Professional Responsibility" held in Washington, D.C., on 30 January, embodies an important new tactic in Nader's continuing crusade eliminate objectionable practices by corporations and government agencies. In the past Nader has relied primarily on outside pressure to club errant bureaucracies into line, but now he hopes to increase the effectiveness of his efforts by enlisting the support of publicminded professionals within the organization. Such professionals, he believes, can help check the excesses of "runaway or unjust bureaucracies" whose operations have become so extensive that it is difficult for outsiders to monitor them.

The Nader campaign consists of more than just a pep talk and exhortation. Nader has set up a clearinghouse to offer advice to troubled professionals and to receive information from them in strict confidence. The administrative chores of the clearinghouse will be handled by Peter J. Petkas, a young lawyer with the Public Interest Research Group, a Nader-sponsored public interest law firm in Washington, D.C. Petkas says that only he and Nader will have access to the information sent to the clearinghouse, and that Nader himself will make the final decisions on what action to take as a result of the information received.

Thus far, the "public service" performance of most professionals has been rather poor, in Nader's opinion. Instead of speaking out against hazardous or unethical behavior by their employers, as most professional codes of ethics would require, all too many professionals, in Nader's view, tend to look the other way or slavishly follow company orders.

Nader told the conference that employed professionals are often among the very first to know about such corporate or bureaucratic depredations as defectively designed automobiles, industrial dumping of mercury into waterways, suppressed data on occupational diseases, and undisclosed adverse effects of drugs and pesticides. "Hundreds and often thousands of people" are privy to such information, Nader complained, yet they "choose to remain silent within their organizations" or, worse yet, allow their services to be used in support of corporate or governmental abuses.

Nader noted that many professionals are "conscience-stricken" over their acquiescent role and "want guidance" on how to correct intolerable situations. What is needed, he said, is "an ethic of whistle blowing which can be practically applied in many contexts within corporate and other complex organizations or bureaucracies." In a prepared statement distributed before the conference, Nader suggested that the employed professional might find it easier to follow his conscience if "his duty to dissent is protected by an organization of his peers, by his professional society, and by law that requires due process and substantive justice." In his speech to the conference, he argued that "people must be permitted to cultivate their own form of allegiance to their fellow citizens and exercise it under conditions of due process and essentially constitutional right vis-à-vis the organization, private or public."

The day-long conference at Washington's Mayflower Hotel was devoted to speeches and panel discussions aimed at