CHAPTER III
A MEDICAL VIEW

Abortion Deaths

"Five thousand American women die every year from illegal abortions!" This assertion is repeated over and over again by proponents of abortion law relaxation. It is demonstrably false. Informed proponents of relaxation of the laws know it is false, but they usually keep silent, and popular media continue to perpetuate the false figure.

Kenneth R. Niswander, for example, writing in the *Western Reserve Law Review* states: "Of women electing illegal abortion, an estimated five to ten thousand die each year."[1] Bates and Zawadzki state that the number of criminal abortions each year in the United States is large, and add: "Out of this number at least five thousand women die as a direct result."[2] *CBS Reports,* "Abortion and the Law," put the "fact" strategically near the beginning of the program: "Five thousand of these women die," Walter Cronkite said with a tone of horrified conviction.[3] The "fact" was driven home again toward the end of the program, the last scene of which showed an alleged hospital death following illegal abortion.

Glanville Williams cites the 1939 British Government Interdepartmental Committee for a figure of between 411 and 605 deaths due to abortions of all types in England each year, and adds that "the committee admitted that this probably understated the position."[4] For the United States, he refers to a 1935 estimate of 8,000 deaths per year, but concedes that this may have been reduced by antibiotics.[5]

What evidence is provided for these figures? Niswander cites Taussig and Russell S. Fisher. Bates and Zawadzki cite Fisher. Williams cites Taussig and Fisher. *CBS Reports* cites no one at all.

Russell S. Fisher published his article originally in 1951 in a criminology journal and revised it for the symposium edited by Rosen. Fisher simply reworked Taussig's figures, assuming a larger number of abortions and a lower rate of deaths (because of the increase of population and the introduction of antibiotics, respectively).[6]

There is no need to examine in detail the extrapolations and deductions by which Taussig arrived at a figure of 8,000 to 10,000 deaths from all types of abortion. He assumed that the maternal death-rate following abortion would be 1.2 percent. He worked from one careful U.S. Children's Bureau study that examined maternal deaths in fifteen states in 1927–1928. He mixed in some questionable German data from the same period, and assumed that there would be as many deaths concealed as detected.[7]

But at the 1942 conference, *The Abortion Problem,* Taussig admitted that he had to reconsider his estimates: "They were trimmed down considerably, particularly as to the number of abortion deaths, in which I attempted to find concealed abortion deaths under other causes of death." He concluded: "I think we can positively say there do not occur over 5,000 abortion deaths annually in this country, no matter how we try to cull the various brackets in the mortality statistics."[8]

Taussig reduced his estimates with reluctance. He had postulated a death-rate of 1.2 percent following abortion; Fisher trimmed this to .5 percent, on the basis of his guess concerning the effect of antibiotics. But Gebhard and his colleagues refer to hospital studies of the period before World War II—before antibiotics—that revealed a range of .35 percent to 1.9 percent deaths among abortion cases *admitted to hospitals.*[9] Obviously only the serious cases that led to complications found their way into hospital records.

A sane approach should begin with an examination of the official statistics. In 1964 in the United States there were 1,343 maternal deaths from all causes related to pregnancy and childbirth. Abortion of all kinds accounted for 247 reported deaths. A British gynaecologist who participated in the 1966 conference, *Abortion in Britain,* summarized British statistics, which reveal about 50 deaths per year due to abortion of all kinds; only 61 percent of these cases were definitely a result of illegal interference.[10] It was on the basis of such figures that Dr. Goodhart concluded that the death-rate from illegal abortion either approximates that from normal childbirth, or the number of illegal abortions must be greatly exaggerated.[11]

Of course, the officially reported statistics will be disputed; the claims will be made that many abortion deaths are concealed and remain uncounted in official statistics. There are three routes by which we can examine the merits of this claim. First, a closer examination of the vital statistics themselves. Second, special studies in certain states. Third, expert opinion from persons known to be sympathetic to abortion law relaxation.

The *Vital Statistics of the United States* uses the years 15–44 as a basis for calculating the fertility rate, because almost all pregnancies occur during these ages. In 1964, when 247 deaths were reported due to abortion of all kinds, only 50,241 American women aged 15–44 died *from all* causes. To conceal any substantial number of deaths in this small total mortality would be impossible. In these age groups, far more men than women died—the total of American male deaths, aged 15–44 in 1964, was 89,759. If abortion deaths were con-

cealed in large numbers, then, they would have to be in categories where female deaths outnumber male deaths. One such category is cancer. All forms of cancer accounted for nearly a quarter of female deaths—11,943. There were fewer male deaths due to cancer in the corresponding age groups—only 9,687. But the difference is explained by the simple fact that 3,044 women died of breast cancer, while only 8 men died from cancer of the breast.

As to special studies, one of particular interest is a report by Dr. Milton Helpern, Chief Medical Examiner of New York City. This was presented at the 1955 Planned Parenthood abortion conference, and it is hard to believe that most advocates of abortion law relaxation are unaware of it. Dr. Helpern described the investigations that were conducted to determine whether a death was due to criminal abortion. Although reporting had improved, the number of deaths had nevertheless fallen—from 140 in 1931 (around the time the material for Taussig's book was gathered) to 15 in 1951.[12] New York has about 4 percent of the nation's population, and probably more than its share of abortions. But if Helpern's figure were projected, only about 375 abortion deaths per year in the U.S. would be revealed.

A more recent report on New York indicates a ratio of 3.1 abortion deaths per 10,000 live births in 1960–62.[13] Apparently this figure applies to deaths due to abortion of all types, not only to criminal abortions. If this rate were projected, with a present birth-rate under 4,000,000, the number of deaths from abortion of all types would be about 1,200. This study was reprinted and distributed by the Association for the Study of Abortion, Inc.; other parts of it are often cited by advocates of the relaxation of abortion laws.

A very careful Minnesota study, 1950–1965, was reported by Dr. Alex Barno (who happens to be a Unitarian) at a 1966 meeting of the Central Association of Obstetricians and Gynecologists. Minnesota has one-fiftieth of the country's population; Dr. Barno points out that if there are 5,000 to 10,000 abortion deaths, the Minnesota share would be 100 to 200 per year. Actually, the average number of deaths due to criminal abortion was 1.3 per year. If this figure were projected to the nation as a whole, the result would be 65 deaths per year.[14] In the discussion following Dr. Barno's paper, Dr. Lee Stevenson of Michigan presented material from the Michigan Maternal Mortality Survey. These figures reveal an average of 15 deaths per year from all sorts of abortions between 1955 and 1959, and a higher average of 24 deaths per year between 1960 and 1964. In 1964 there were 25 deaths; if this were projected to the whole nation the result would be 628 deaths due to abortion of all kinds.[15]

A study of Maternal Mortality Committees of California reveals that "the number of deaths per year from all abortions has averaged about 30 without much variation during the period" (1957–1965) under study.[16] The abortions causing deaths studied were definitely induced in 54.7 percent of the cases and definitely spontaneous in 13.1 percent. The remainder were uncertain.[17] Since California has about one-twelth of the population of the U.S., a projection to

the entire country would indicate less than 350 deaths due to criminal abortion in the nation as a whole. If, as seems likely, the California proportions of types of abortions leading to deaths apply in Michigan and New York City, the projections for criminal abortions must be 13.1 percent to 45.3 percent less than the projections derived from their rates of maternal deaths due to abortion of all kinds.

From these studies, it seems clear that even if the official figures are seriously understated, the total number of deaths due to criminal abortion is less than 400 per year. This figure is in line with the results from Michigan and California studies, though very high in comparison with the Minnesota results and somewhat low in comparison with recent New York City figures.

Finally, there are the experts. Dr. Tietze examined the question of the validity of the official statistics in a 1948 article. After considering all the possibilities for understatement, he concluded that the vast majority of abortion deaths in the U. S. are correctly reported, though perhaps not as large a proportion as in Britain, where the Registrar General for England and Wales asserted there was no reason to suppose understatement by more than 10 percent.[18]

Mary S. Calderone, who edited the report of the 1955 Planned Parenthood abortion conference, wrote in 1960:

> Abortion is no longer a dangerous procedure. This applies not just to therapeutic abortions as performed in hospitals but also to so-called illegal abortions as done by physicians. In 1957 there were only 260 deaths in the whole country attributed to abortions of any kind.

She went on to note the decline in deaths between 1921 and 1951, and she explained it by drugs and by the large proportion of abortions performed by physicians.[19] This explanation is confirmed by the California study, which revealed that the death-rate from abortions performed by physicians must be very low; less than 3 percent of the deaths certainly due to criminal abortion followed the intervention of a physician, while two-thirds of them followed an attempt by the woman herself.[20]

Not 5,000 to 10,000 deaths due to criminal abortion, but 200 to 400 per year in the United States—that is the truth of the matter, and no advocate of abortion law relaxation should distort the facts. By "criminal abortion" here we refer to *all* illegally induced abortion, whether self-induced or induced by amateurs, or by trained physicians.

To his credit, Dr. Robert E. Hall, President of the Association for the Study of Abortion, Inc., and leading advocate of abortion law relaxation, recently criticized the excessive claims, referring to the article by Niswander mentioned above:

> I would quarrel with Niswander on only one point, namely, his perpetuation of Taussig's thirty-year-old claim that five thousand to ten thousand American women die every year as the result of criminal abortions. Whether this statistic

> was valid in 1936 I do not know, but it certainly is not now. There are in fact fewer than fifteen hundred total pregnancy deaths in this country per annum; very few others could go undetected and of these fifteen hundred probably no more than a third are the result of abortion. Even the "unskilled" abortionist is evidently more skillful and/or more careful these days. Although criminal abortion is of course to be decried, the demand for its abolition cannot reasonably be based upon thirty-year-old mortality statistics.[21]

Dr. Hall would have done better to have mentioned the census figure—247 deaths from abortion of all kinds. As we have seen, even if the figure is understated, *criminal* abortion deaths are surely less than 400 per year in the United States. Apparently Hall is maintaining Taussig's tradition, at least to the extent that Hall still doubles the reported death-rate, and uses the result in a way likely to lead the unwary reader to suppose there are as many as 500 deaths due to criminal abortion. However, for a man who is retreating, "probably no more than a third" of 1,500 deaths is a considerable improvement upon the much higher figures that usually have been given by advocates of abortion law relaxation.

Unfortunately, Dr. Hall in the same essay perpetuates the unfounded claim that there are one million illegal abortions per year in the United States.[22] Abortionists would have to be extremely skillful indeed if the actual maternal death-rate following abortion has to be reduced from Taussig's unbelievably high guess of 1.2 percent to .05 percent, or one death for each 2,000 criminal procedures.

Even more disturbing, however, is that Dr. Hall continues to talk as if legalizing abortion would eliminate criminal abortions and their consequences: "Although criminal abortion is of course to be decried," Dr. Hall says, "the demand for its abolition cannot reasonably be based upon thirty-year-old mortality statistics.[23] Even 400 deaths would be a very grave matter if they could be prevented. But, as we saw in chapter two, in our examination of "The Frequency of Illegal Abortions in Other Countries," a limited relaxation of anti-abortion laws is likely to lead to an increase of all abortions, of illegal abortions, and so of abortion deaths; even abortion on demand does not lead to the abolition of criminal abortion.

Often it is pointed out that the abortion death-rate is higher for non-whites than for whites. This is true; the 1964 census shows a death-rate, due to abortion of all kinds, six times higher among non-whites. In actual numbers, there were 130 non-white deaths due to abortion, and only 117 white deaths from this cause. *But these figures include spontaneous and therapeutic abortions as well as illegal ones.* And the non-white maternal death-rate from all causes other than abortion also is disproportionate; in 1964 it was five times as high for non-whites as for whites.

The latter difference can hardly be explained by criminal abortion; the laws against abortion could be loosened without altering this disproportion. The death-rate from all causes among non-whites is higher, usually more than

twice as high in all age groups up to fifty years of age. A non-white newborn baby girl is five times as likely to die of infection as a white baby girl; a non-white woman is nearly six times as likely to be a victim of murder as a white woman. These facts are due to a whole complex of social conditions which will not be improved in the least by a loosening of the laws against abortion.

Colored women simply do not get adequate medical care. Adverse conditions undoubtedly lead non-white women—who are less prone to abortion, as we have seen—to try to abort themselves, while white women get professional help, legally or illegally. Thus the Kinsey materials showed that 8–10 percent of abortions among the basic sample of white women were self induced, but 30 percent among the Negro and prison samples were self induced.[24]

Many women who are now dying as a consequence of self-induced abortion would not go to a physician for the operation if it were legal, unless it were free of charge. Advocates of abortion law relaxation have not yet proposed that the operation be done without charge. What would the American Medical Association have to say about such a program of aborticare?

Indications for Therapeutic Abortion

If a physician openly and with legal justification interrupts a pregnancy with the expectation that the child will thereby die, he is said to perform a "therapeutic abortion." *Therapy* is treatment by a physician; in therapeutic abortion the pregnant woman's disease is treated, in part, by interrupting her pregnancy.

When Taussig wrote his book, he devoted a long chapter to "Indications for Therapeutic Abortion."[25] In medicine the word *indications* refers to those conditions which seem to warrant a certain procedure. Taussig stated:

> If therapeutic abortion were limited to those cases where the life of the mother was certainly and immediately imperiled, the number of such abortions would be exceedingly small, and unfortunately they would in many instances be done too late to save her life.

But, he adds, "serious danger to the health of the mother" also must be considered.[26] A long list of indications follows; the leading one is active tuberculosis. Psychiatric reasons are mentioned, but they play a rather small role.

By 1951, Dr. Guttmacher was able to state:

> Even before the advent of the "miracle" drugs, the practice of allowing pregnancy to continue in women with pulmonary tuberculosis had become general. It had been determined that if the tuberculous pregnant woman was treated like the non-pregnant, with pneumothorax or even surgery if indicated, she did well.[27]

In other words, the leading indication in Taussig's time became insignificant in less than two decades, mainly because a prejudice against pregnancy was overcome by the facts. Guttmacher expresses this reason for change with admirable clarity:

> Two decades ago the accepted attitude of the physician was that, if a pregnant woman were ill, the thing to do would be to rid her of her pregnancy. Today, it is felt that unless the pregnancy itself intensifies the illness, nothing is accomplished by abortion.[28]

Dr. Guttmacher's effort to set out possible indications for therapeutic abortion also is introduced and concluded by a frank statement that there is little consensus among physicians concerning legitimate indications:

> I should like to re-emphasize the fact that, if two well-qualified obstetricians were each to write upon this subject, there would be no likelihood of absolute agreement: the views expressed, therefore, are not necessarily the only correct ones.[29]

An interesting survey of medical literature was included in Eugene Quay's legal study published in 1960. This survey reveals a trend toward reduced recognition of medical indications for abortion. But as the indications lessened in number, they also became less definite, so that hardly any condition is generally admitted to require abortion for the protection of the mother's life and health.[30]

There appear to be only the following types of cases concerning which there is general agreement:[31]

1) Some cases, including hydatidiform mole, in which the fetus is dead or has been reabsorbed. Such cases, though technically involving an interruption of pregnancy, present no ethical question.

2) Some types of cancer and other tumors require removal of the uterus during pregnancy. We shall see in considering the ethical questions that these cases present no problem; there is general agreement that removal of the uterus is allowable.

3) Ectopic pregnancies—i.e., those which involve implantation outside the uterus, usually in the tubes, but occasionally in the abdominal cavity—require removal. In most cases ectopic pregnancy presents no ethical problem. We shall consider the question in detail.

4) Heart and kidney diseases which are complicated by progressively diminishing or failing heart and/or kidney functions, especially during the first three months of pregnancy. These cases present an important ethical question, because there does exist a very broad medical consensus that there are legitimate grounds for therapeutic abortion in such cases, while an absolute prohibition of abortion seems to exclude the procedure.

Incidence of Therapeutic Abortion

Dr. Robert E. Hall has accepted a somewhat extended list, including a few less common conditions and special cases of some fairly common conditions. He observes that if his list were strictly observed, the rate of therapeutic abortions would be about 1 per 10,000 deliveries. The actual rate has declined in recent years, but hospital studies indicate it still is 1:400–500; the total

number of therapeutic abortions per year in the United States is 8,000 to 10,000.[32]

There are two facts that must be considered with regard to the therapeutic abortions that are now performed. The first is that incidence varies greatly in different hospitals, and between different groups of patients treated in the same hospital. The second is that most of these abortions are performed for reasons that are not, in a strict sense, therapeutic.

These points are revealed by several studies. Dr. Gold and his colleagues in their study in New York City show a 1960–1962 rate of 1 abortion per 10,000 births among Puerto Ricans—the ratio Dr. Hall said would prevail if strict medical indications were adhered to. The rate among non-whites was 5 times as high, and that among other whites 25 times as high, as that among Puerto Ricans.[33] Again, the rate in municipal hospitals was 1 per 10,000 births; the rate in general services of voluntary hospitals was 7 times as high, in private service of voluntary hospitals 24 times as high, and in proprietary hospitals 39 times as high, as in the municipal hospitals.[34]

Dr. Hall tabulated data from sixty large hospitals concerning recent periods, mainly in the early 1960s. These revealed variations between ward and private services of such an order that on the average therapeutic abortions were performed more than three times as often in private as in ward services. In 1951–1962, George Washington University Hospital, Washington, D.C., (private, not Catholic) had only 1 abortion to 4,324 deliveries in its ward service, but had 1 to every 218 deliveries in its private service. In 1960–1962, Woman's Hospital, New York City, had two and one-half times as many ward deliveries as private deliveries (4,501 to 2,023). But there were only 5 abortions on its ward service, while there were 101 on its private service, where a ratio of 1 abortion per 20 births was reached. Chicago Lying-In 1957–1962, performed 1 abortion for every 227 deliveries in its service, exclusively ward; Cincinnati General Hospital in the same years had no abortions but 24,417 deliveries in its service—also strictly ward. Similarly, in hospitals with strictly private services there were vast discrepancies. The California Hospital, Los Angeles, reported (1953–1962) 1 abortion per 488 deliveries; St. Luke's Episcopal Hospital, Houston, reported (1961) no abortions and 2,969 deliveries.[35]

Why this great variation? Dr. Hall suggests three reasons. First, ward patients generally register later for care and are "less aware of their need to be aborted." (This suggests either that the need is nonmedical, or that the patients in private service are better judges of medical need than their physicians.) Second, there is a higher incidence of abortion for psychiatric reasons among private patients. At Sloane Hospital, New York (1951–1960), psychotherapy was given to 86 percent of the ward patients and to only 57 percent of the private patients aborted on psychiatric grounds. (This suggests that pregnancy as such has a much less damaging effect on the mental health of women in lower socioeconomic brackets.) Third, "abortions were more common among the private patients at Sloane Hospital for virtually all of the more

debatable indications, such as arthritis, inactive tuberculosis, and rubella."[36]

This explanation tends to be confirmed by a recent study of therapeutic abortion at Mount Sinai Hospital, New York, 1953–1964. Abortions in the private service have risen very rapidly; between 1956–1958 and 1962–1964 the rate more than doubled, from 49 to 121 per 10,000 deliveries. At the same time there was only a slight increase on the ward service, from 48 to 62 per 10,000 deliveries. In both services, abortions for psychiatric indications increased, but more than two and one-half times as much in the private service. The rate for genetic reasons (mainly German measles) fell 75 percent in ward service while it increased more than 50 percent in private service. Very strikingly, the rate for the indication of cancer was consistently higher in private service; the mean rate (1953–1964) for this indication was 7 times as high on the private service as on the ward service.[37]

The authors of this report comment:

> On the basis of a twelve-year experience with therapeutic termination of pregnancy, we concur with the growing opinion that for most clinical conditions the natural history of a disease is not influenced deleteriously by an intercurrent pregnancy. Neither is the course of pregnancy often seriously affected by a complicating medical condition.[38]

The discrepancies thus seem to arise mainly from differences in the extent to which psychiatric and fetal indications are accepted as justifications for abortion. Psychiatric and fetal indications are such complex topics that we shall devote the next two sections to them. Fetal indications are not a basis for therapeutic abortion, if the word "therapeutic" is taken in its proper sense, because the health of the mother is not involved, and the health of the child is not improved. We shall see that psychiatric indications also have little to do with therapy. It follows that most abortions, performed openly in hospitals, are not, in a strict sense, therapeutic. Dr. Alan F. Guttmacher has written that over 85 percent of the abortion operations performed at Mount Sinai Hospital (1952–1956) "at least bent the law, if they did not fracture it."[39] He has also said that "the abortion laws make hypocrites of all of us."[40]

From data such as we have been reviewing it has been argued by Dr. Hall, Dr. Guttmacher, and others, that the differences in treatment are an inequity to those who have fewer abortions, and that changes in the laws are necessary to permit abortion for the indications in accord with which it is being performed.[41]

One point to be observed is that the evidence reveals that no change in the laws is needed to permit physicians who want to perform abortions for psychiatric, fetal, and other reasons to do so. If a physician in good standing wishes to perform an abortion in a hospital for any reason that would be approved by a substantial number of his colleagues, he can act following consultation; physicians are not convicted for violating anti-abortion laws in

such cases.[42] Laws that do not reflect current practice need not be altered to permit that practice; however, if the laws are loosened, practice may well vary even more widely.

A second point is that the argument for loosened anti-abortion laws based on the "inequitable" differences in treatment is strictly parallel to—in fact, is merely an extension of—the argument that always has been used by advocates of birth control when faced with the evidence that contraception increases the fertility differential between upper and lower social classes. In recent years the argument has been that contraception must be included in public health and welfare programs, so that lower class women might share the freedom to be as infertile as they wished. In the 1920s and early 1930s the argument was frankly eugenic—that contraception had to be extended to the lower classes lest their uncontrolled breeding debase society and culture. The extraordinary argument for a loosening of anti-abortion laws to eliminate inequities in treatment begins to make sense when it is put into its proper historical context.

A third point is that the matter may well be more complex than the argument suggests.

To begin with, Drs. Keith P. Russell (who has been a member of the Board of Directors of Dr. Hall's Association) and J. George Moore have concluded that differences in the patients, rather than a double standard, account for differential abortion rates in various types of hospital services.[43] Perhaps they are not correct, but if there is a double standard in practice among the same doctors in the same hospital, changing the laws would not eliminate it. Undoubtedly the well-to-do enjoy—if that is the correct word–a great deal more surgery generally, and the laws do not create whatever double standard is involved. Rather, it is a simple matter of economics.

Moreover, the differential between public and private services need not exist. A review at Toronto General Hospital (1954–1965), where 262 abortions were performed in a recent twelve-year period, shows a statistically insignificant difference between the "therapeutic" abortion-rate in public (1:181) and private (1:172) services. The law at Toronto is as restrictive as in the United States; the author of this report also favors loosening it.[44] But apparently in Toronto physicians are as willing to bend the law for poor patients as for rich.

We have seen in chapter two that the very lowest socioeconomic classes are not very likely to have criminal abortions. They may be even less likely to seek comparatively costly "therapeutic" abortions. Moreover, Dr. Alice Rossi, a sociologist who favors legalizing abortion for any woman who wants it, has speculated that middle class women and working class women react differently to illegal and legal abortion. A middle class woman who obtains an illegal abortion is distressed in part by the experience of going across the "social tracks," Mrs. Rossi explains:

> A working class woman under similar circumstances may feel very differently. Her discomfort may actually be greater about going uptown to a big, alien hospital

to obtain an abortion at the hands of a middle class doctor than resorting to an abortionist or physician in her own community.[45]

Mrs. Rossi assumes that the "working class woman" is likely to want an abortion. But in the poorest groups, we have seen that the *desire* may not be present. The Kinsey materials seem to show that those in the lowest socioeconomic class have a more affirmative attitude toward procreation and that abortion increases with status-striving.[46] Thus a major factor in the differential incidence of "therapeutic" abortions may be difference in demand.

This supposition concerning difference in demand receives some confirmation from an interesting study of therapeutic abortion in Salt Lake City, 1954–1964. The incidence in four large hospitals was one therapeutic abortion per 2,482 births. The author of the report points out that about 50 percent of the residents of Salt Lake City are members of the Mormon Church, which "places great value on having children. Such a philosophy is antithetical to the extensive use of abortion."[47] He explains further that the "Church makes no dogmatic statement concerning therapeutic abortion, but one finds strong sentiment against it, and criminal abortion is condemned as a sin."[48] In this situation 73 percent of the abortions were for medical indications (two-thirds of these serious heart and kidney problems), 18 percent were for psychiatric reasons, and 9 percent for fetal indications.[49]

The same report included an interesting survey of the attitudes of Salt Lake City's obstetricians and gynecologists. They considered (40 to 3) that indications for therapeutic abortion *sometimes* exist. But *asked to assume that each condition was serious,* a majority said they would consider therapeutic abortion only in case of rheumatic heart disease (22–19), certain kidney problems (26–14 and 28–10), and cancer of the cervix (25–19). The majority rejected all non-medical indications; for example, rape (13–30), suicide threat (17–20), German measles (7–36).[50]

Psychiatric Aspects of Therapeutic Abortion

Fourteen psychiatrists polled in the same survey all accepted possible indications for therapeutic abortion, and the majority of those answering was willing to consider almost every indication suggested. Interestingly, the majority of psychiatrists accepting many of the medical indications was almost unanimous, while it was significantly reduced where psychiatric indications were in question. The majority of the psychiatrists (9–4) rejected psychoneuroses as a possible indication. They also rejected (7–4) suicide threat, and in this were more reserved than the obstetricians and gynecologists. Apparently, the more a physician knows about an excuse for therapeutic abortion, the less likely he is to consider it valid. At the same time a majority of the psychiatrists polled did accept schizophrenia (8–5) and manic-depressive reaction (7–6) as possible indications for therapeutic abortion.[51] Clearly, in Salt

Lake City there was no general agreement in favor of therapeutic abortion for any of the proposed psychiatric indications.

Other reports strongly suggest that psychiatric indications for therapeutic abortion are mostly subjective. One study in California revealed attitudes that varied so much that some psychiatrists never recommend therapeutic abortion, while some "seem always to do so."[52] Dr. David C. Wilson, reporting on abortion at the University of Virginia Hospital, explained why abortions on psychiatric grounds dropped from an average of 3.8 per year (1941–1950) to none (1951–1952):

> The fact that no abortions have been done for neuropsychiatric reasons during the last two years at the University of Virginia Hospital means that a change of attitude has been successful in helping many people solve their problems in living, problems which seemed to be without solution at the time the case was presented.

The attitude that changed was not only that of the patients, but also that of the physicians.[53]

We shall see more about hospital committees in a subsequent section. It is perhaps due to their work that although the proportion of therapeutic abortions performed on psychiatric indications seems to be rising almost everywhere, the absolute number of such abortions seems to be declining, at least in some places. The study of trends in New York City (1943–1962) by Dr. Gold and his associates reveals that therapeutic abortion for mental disorders declined 19.1 percent between the 1951–53 period and the 1960–62 period.[54]

A variant of the committee system is a review board; staff members do not pass on proposed therapeutic abortions in advance, but simply formally review and discuss all such cases afterwards. This simple procedure reduced the incidence of therapeutic abortion on psychiatric grounds at Tampa General Hospital from 1 per 149 births (April 1963 to March 1964) to 1 per 410 births (April–December 1964). The authors of this report cite the even more dramatic declines achieved elsewhere by this simple device. They also point to the pre-existing situation. Between 1960 and 1964 various psychiatrists had recommended from one or two to as many as 23 and 33 abortions. One might suppose that differences in their practices were a factor, but this is discounted, and the difference is explained by "varying opinions of the subject."[55]

The strongest psychiatric indication for therapeutic abortion would seem to be the case in which a woman would otherwise commit suicide. However, Dr. Myre Sim, of Birmingham, England, cites evidence from earlier studies that women refused abortion do not commit suicide, and cites a study (1950–1956) by the coroner of Birmingham who concluded:

> In no case has pregnancy been established as a factor in bringing about the suicide. In two cases the woman thought she might be pregnant, but it was certainly not confirmed by medical examination or post-mortem examination. We have no record of any woman known to be pregnant having committed suicide.[56]

Swedish material continues to show that suicide threats are not carried out. A 1962 report of a study during 1954–1956 shows that women threatening to commit suicide did not do so prior to determination on their requests for abortion. A 1963 report of a study of 273 women refused abortion, including 32 who had threatened suicide, revealed no suicides. There were only three suicides following rejection of an application for abortion in the entire period between 1938–1958, so far as the Swedish National Board of Health could determine.[57]

A California study of suicides revealed only three involving pregnant women. Statistically 17.6, at a minimum, could have been expected in the population studied. All three of the suicides involved stress between the man and woman, rather than rejection of pregnancy. The authors, Drs. Allan J. Rosenberg and Emmanuel Silver, conclude that perhaps pregnancy has a psychically protective role.[58]

These studies all tend to confirm facts revealed in a discussion at the 1955 Planned Parenthood abortion conference. It was pointed out: "Suicide is one of the most difficult things to forecast in any patient . . ." Suicides among pregnant women in New York City (1953) were reported to be at a rate 90 percent less than among non-pregnant women in the same age groups. A Danish physician confirmed this by the observation that although the general suicide rate in Denmark is high, it is so low among pregnant women that not even an attempt at suicide is considered sufficient evidence to warrant therapeutic abortion. A Swedish physician reported a somewhat higher rate of pregnancy among female suicides in Sweden, 3.7 percent or 5 percent according to different studies, but did not compare these figures with what might have been predicted for *all* women.[59] An American psychiatrist said that not suicide risk but socioeconomic factors were the actual grounds in many instances in which psychiatric recommendations for termination were made.[60]

At the same conference, Dr. Iago Galdston, who opened the discussion of psychiatric factors, stated clearly that abortion as such is no remedy for the psychologically sick person. He added the blunt comment: "Bad as the situation was initially, it not infrequently becomes worse after the abortion has taken place."[61]

Theodor Reik has proposed a theory that might explain the worsening of the psychological situation after abortion. For the man, Reik theorizes, abortion is an expedient solution to the problem, but for the woman the operation has an unconscious meaning comparable to that of castration for a man. The experience embitters the woman against her partner.[62]

Severe depression has been suggested as a psychiatric indication for abortion. But Dr. George S. Fultz, Jr. has argued that abortion is seldom justified on any psychiatric ground; the treatment of existing illness is much more desirable. In regard to depression, he says:

> Depressions are due to guilt. Depressed patients, who are made more depressed by their pregnancies, are already guilt laden, and an abortion, even though it might serve as a temporary solution to the depression, seems to add much more guilt with increased depression later on.[63]

At a 1962 meeting of the American Psychiatric Association, Dr. Sidney Bolter offered a devastating critique of the role many psychiatrists were performing in the "therapeutic" abortion mill. He pointed out that there was a rush for judgment on cases not previously seen, and that important psychiatric factors against abortion were being casually ignored. He pointed to a prospect of severe psychic damage to the patient coming to the surface at menopause, perhaps years after the "therapeutic abortion."[64]

Dr. T. N. A. Jeffcoate, an eminent British obstetrician and gynaecologist, surveyed the conflicting attitudes among psychiatrists concerning abortion in cases of serious psychosis. He concluded that few mentally ill women are ever helped by abortion, and it is hard to tell beforehand who those few will be. Even in cases where severe mental illness returns after successive childbirths, abortion is not a solution, because it has its own problems and the "disorder is just as likely to follow abortion as delivery at term"[65]

Dr. Harry M. Murdock, a psychiatrist and professor of psychiatry, divides into three groups the pregnant patients seen in a private psychiatric hospital. First are patients discovered to be pregnant at admission. Here the family's first reaction often is to demand an abortion, but "the fact of pregnancy does not affect treatment or management, and the question of abortion does not require much consideration." Pregnancy is a reality stress, explains Dr. Murdock, and it sometimes seems to help recovery. Second are patients known to be in the early stages of pregnancy at admission. These have been ill for some time, but the pregnancy elicits a sharp reaction from the family. Among such psychotic patients, Dr. Murdock considers that the depressed stage of manic-depressive psychosis may be hastened and intensified by pregnancy. Third are patients whose mental illness first appears during pregnancy. Dr. Murdock's impression is that "pregnant women are more apt to make a satisfactory recovery from their psychosis, and to do so more promptly than comparable patients who are not pregnant."[66]

The fact of the matter is that the whole concept of psychiatric indications for therapeutic abortion is questionable. Dr. Quinten Scherman told the American College of Obstetricians and Gynecologists at a 1956 meeting:

> Medical men have devised better treatment of severe diseases associated with pregnancy and have been able to markedly reduce the therapeutic abortion rate throughout the country only to find that this least justifiable of all indications, psychiatric reasons, has been allowed to run rampant.

Of manic-depressive psychosis and schizophrenia he added: "The problem here is one of institutional care and certainly therapeutic abortion will not

solve it."[67] Dr. Myre Sim concluded flatly: "There are no psychiatric grounds for termination of pregnancy."[68]

Of course, many psychiatrists would not agree. But it is extremely important to understand why they would not.

Drs. Ebaugh and Heuser, of the University of Colorado School of Medicine, observed in a 1947 article that psychopathy and psychoneurotic reaction do not warrant therapeutic abortion. But in selected cases of schizophrenia, a therapeutic abortion may help to "soften the environmental stress." In selected cases of manic-depressive psychosis, abortion "may be advisable owing to the inability of the patient to care for the child and the problems inherent in management, confinement, and labor."[69] Here abortion is more a convenience for the hospital than a therapeutic measure for the patient.

In Rosen's 1954 symposium, Dr. May E. Romm stated:

> Women with major psychoses of the schizophrenic or manic-depressive types which are not amenable even to protracted therapy, if pregnant, should be relieved from continuing the gestation, both as a humane measure for themselves and for the sake of human beings who otherwise would be brought into an untenable environment.[70]

Here there is no question of therapy; the disease is assumed in advance to be "not amenable even to protracted therapy." Abortion is simply chosen in preference to other possibilities (which are not even mentioned) as a solution to a social problem.

At the 1955 Planned Parenthood abortion conference, Dr. Rosen, himself a psychiatrist, stated:

> So frequently when the psychiatrist sees a patient, he has been asked to do so not really because psychiatric indications or contraindications may be involved, but because socioeconomic factors are pronounced.[71]

By 1964, Dr. Alexander Simon of University of California School of Medicine inserted an extremely significant sentence in a summary of his view of the proper psychiatric evaluation of indications for therapeutic abortion:

> Essential to this evaluation is the assessment of other factors which always influence it: the patient's age, number of children, her wishes regarding therapeutic abortion, the family situation and interpersonal relations, the socioeconomic situation, fetal indications.[72]

This seems to mean that there is a psychiatric indication whenever the psychiatrist decides that, all things considered, it would be good if a woman's demand for abortion were approved. The psychiatrist becomes a kind of judge to whom patients must submit, but who himself decides each case without any definite rules.

Dr. Jack Weinberg, a prominent Illinois psychiatrist, has proposed explicitly that psychiatrists assume this role:

> It is in the more subtle situations with less defined and self evident indications for abortion where no expertise may be needed, that our hearts must grow strong, and

> our readiness to use our painfully acquired skills could be rewarded for the benefit of all. As an example, it is generally accepted that poverty, marital strife, poor housing, financial difficulties, adverse work situations and emotional conflicts can produce mental and physical disorders.

He wishes to consider "not only the direct but also the remote effects on the health and well being of the mother" in deciding whether abortion is indicated, but he wants to "resist the notion to terminate a pregnancy lawfully merely on the grounds that it is inconvenient to either or both parents."[73]

With an outlook of this sort, a very broad concept of "health and well being" allows anything the psychiatrist considers a sufficiently good reason for abortion to become a legitimate indication for "therapeutic" abortion. This development has occurred more straightforwardly in the Scandinavian countries. In Denmark, for instance, the chief excuse for legal abortion is called "stress syndrome." There is no definite illness, and this "stress syndrome" appears to be of two types:

> One type is dominated by social, financial, and housing problems. In these cases physical symptoms in addition to the stress are often predominant. The other type more often appears in middle-class women who are not directly threatened by social destitution due to the pregnancy, but who are motivated to seek an abortion through the fear of a reduction in their standard of living.[74]

In sum, many psychiatrists consider that there are psychiatric indications for abortion, but these reasons are mainly socioeconomic ones. They are converted into indications for "therapeutic" abortion only by the argument that what is not good for the patient—in the psychiatrist's judgment and by his system of values—is bound to make her sick sooner or later. A British psychiatrist, who himself favors broad indications for abortion, states frankly that non-medical factors are determinative:

> If these other factors are disregarded, we might as well abandon the task of advising on this matter, since the number of cases where a purely *medical* indication is concerned is very, very small, in my experience, none.[75]

And the word "medical" is not used here in opposition to "psychiatric."

If psychiatric *indications* for therapeutic abortion only become intelligible when mental health is extended to include socioeconomic welfare, the psychiatric evaluation of untoward consequences of abortion does not require any such stretching of concepts. The literature is filled with testimony from psychiatrists, including many who favor relaxation of anti-abortion laws, indicating the possible dangers of this practice, even when the abortion is done under the best conditions.

Dr. Sim puts the point bluntly: "Abortion, even if therapeutic, may in itself produce a psychosis."[76] An American psychiatrist concluded his presentation before a 1966 meeting of the American Society of Psychoanalytic Physicians by saying:

> Finally, any abortion is an emotionally traumatic experience, and is sometimes a precipitating and unsuspected cause of atypical psychotic reactions. These "pseudo-schizophrenic" episodes compare to those found in the postpartum psychoses, and should be generally treated in the same manner.[77]

The symposium edited in 1954 by Dr. Harold Rosen, who is a psychiatrist sympathetic to abortion law relaxation, contains abundant material pointing to the psychiatric dangers of therapeutic abortion. In a foreword, Dr. Nicholson J. Eastman, noting repeated use in various contributions of expressions indicating psychic dangers, commented:

> The feeling is growing apparently among the leaders in psychiatry that therapeutic abortion on psychiatric grounds is often a double edged sword and frequently carries with it a degree of emotional trauma far exceeding that which would have been sustained by continuation of pregnancy.[78]

In Rosen's symposium, Dr. Flanders Dunbar writes graphically of the "post-abortion syndrome," in which a woman begins to feel inadequate or guilty, blames her husband or society, becomes "an unpleasant person to live with," and loses "conviction in playing a feminine role."[79] Dr. May E. Romm emphasizes that a woman who undergoes therapeutic abortion is aware of her responsibility for the decision, and so may feel intense guilt and hostility toward the physician, even though she had pleaded with him for the abortion. "She may later equate the abortion with murder and react to the guilt entailed in it with a reactive depression or, in extreme cases, with a psychosis."[80] Dr. Rosen himself emphasizes the possible dangers of therapeutic abortion, pointing out that suicidal depression may appear as a result of abortion even if the pregnancy is not desired.[81] Dr. Theodore Lidz, a Professor of Psychiatry at Yale Medical School, states that abortion can be felt "as a serious assault upon the integrity of the body and a tremendous threat to the integrity of the ego structure." The mother feels this loss to herself as something for which she is responsible: "Much of what goes wrong in life can be blamed upon others, but the ultimate decision concerning abortion and the refusal to give that new life a chance remains with the mother." The guilt may reawaken past guilts, and in turn may be reactivated by future guilts, for example, at menopause.[82]

At the 1955 Planned Parenthood abortion conference, Dr. Iago Galdston stated: "Drawing upon my experience I would summate the major psychological effects in three terms: frustration, hostility, and guilt."[83] Dr. Lidz unfolded his views at some length according to the outline indicated by these three terms, and questioned whether these reactions were culturally or religiously based, or whether for the mother abortion does not violate "something that is properly her goal in life."[84] Dr. Rosen pointed out that adverse reactions do not always occur, and suggested that they are less common in psychologically healthy women than in the patients psychiatrists see.[85]

This last observation is supported by Martin Ekblad's follow-up study of 479 women granted abortions under Swedish procedures. He summarizes:

> The psychically abnormal find it more difficult than the psychically normal to stand the stress implied in a legal abortion. This means that the greater the psychiatric indications for a legal abortion are, the greater will be the risk of unfavorable psychic sequelae after the operation.[86]

Dr. Nathan M. Simon and Audrey G. Senturia have surveyed publications (1935–1964) on psychiatric consequences of abortion. Their survey is accompanied by a critique of the scientific method of the authors reported. They reach the conclusion: "There appears to be a lack of conclusive data about the effects of therapeutic abortion."[87] Yet, despite the faults of methodology Simon and Senturia point out, such as failure to take into account the significance of non-response to the surveys, the studies cited do point to the conclusion that therapeutic abortion has serious psychiatric consequences. Perhaps it is pedantic to insist on a perfect demonstration before admitting a point of this kind which is so generally agreed upon by psychiatrists working from clinical experience.

One of the studies Dr. Simon criticizes least (and cites only from a summary in a secondary source) is the Swedish work of Per Aren. At least 40 percent of the women studied became pregnant again within three years. Of 100 who gave birth after a previous legal abortion, "14 stated that they had desired to have a substitute for the child they had earlier not borne, and 20 stated that although the pregnancy was unwelcome, they could not bear the idea of going through a new abortion."[88] Aren holds that these cases show the importance of guilt feelings after legal abortion. He found also that in 142 cases in which legal approval for abortion was granted, but for various reasons the operation was not performed, 79 percent enjoyed mental health as good as or better than before—although the approval of abortion was on psychiatric or social-psychiatric grounds. In the remaining cases "the deterioration was usually insignificant, and in approximately half of the cases it was apparently due mainly to factors other than the arrival of the child."[89]

Another Swedish study published in 1965, too late for inclusion in the Simon-Senturia survey of publications, again revealed the dangers of legal abortion. Bengt Jansson points out that women granted legal abortion are likely to be psychically vulnerable. Still it is startling to find that 34 women out of 1,773 (1:52) granted legal abortion in Göteborg required psychiatric hospital treatment within a year. Abortion by itself was considered the causal factor in eight cases, and a contributing factor in seven others. There were five suicide attempts shortly after legal abortion, and Jansson concludes by agreeing with earlier Swedish studies:

> It may be said, perhaps, that legal abortion stands out as a fairly ineffective psychiatric therapeutic means. Women who are psychically vulnerable risk a deterioration in their condition through an unwelcome pregnancy and the extra load this involves, whatever course is adopted; while those who are mentally stable get over an abortion, or a rejection of their application for an abortion, considerably better.[90]

Drs. Arthur Peck and Harold Marcus, of Mount Sinai Hospital, reported (1966) a study of fifty patients interviewed by a psychiatrist before abortion and again within three to six months afterwards. They claimed the effect was really therapeutic, though ten women experienced some reaction and one an acute adverse reaction clearly related to the abortion. The validity of the result is questionable, however, because sixteen other women who were interviewed before abortion refused to return for the post-abortion interview and would not respond to repeated efforts to obtain information.[91]

Drs. Kenneth Niswander and Robert Patterson, of State University of Buffalo reported (1967) a questionaire sent to 163 patients who were aborted (1963–1965); 116 replies were received; 29 were returned undeliverable, and 16 were not returned. Six respondents were definitely negative or doubtful about their abortions, but the authors reach a confident conclusion "that the treatment is usually therapeutic in the best sense of the word—the patient feels better and, therefore, functions more effectively."[92]

The situation seems to be this. Until recently the psychiatric consensus and Scandinavian studies indicated that legal abortion is psychologically dangerous and that it is a rather ineffective means of psychotherapy. Recently some American studies have begun appearing that seem to suggest the opposite. The Scandinavian studies certainly are more extensive and more careful than the recent American ones, which involve very few patients and serious methodological defects.

The Report by the Council of the Royal College of Obstetricians and Gynaecologists thus seems to have been correct in concluding:

> Whilst the continuance of pregnancy can have a psychological rather than physical ill-effect, so can induced abortion. There are few women, no matter how desperate they may be to find themselves with an unwanted pregnancy, who do not have regrets at losing it.

The physicians conclude that if the indication for abortion seemed to the woman herself not essential to life and health "she may suffer from a sense of guilt for the rest of her life."[93]

It seems quite doubtful that a change in the criminal laws against abortion will eliminate this guilt; guilt has not been avoided in Sweden. On the other hand, it is fair to speculate that a great deal of the pressure to alter the laws may arise from a gnawing sense of guilt experienced by even reputable physicians who, having bent existing laws to the limit, project the guilt of performing abortions onto the laws, which are thereupon accused of making reputable physicians into hypocrites.

One point about relaxation of the laws should not be overlooked: it will not make the conscientious psychiatrist's work any easier. Dr. Lidz pointed out clearly that difficulty arises from lack of laws, and that laws protect physicians "from the need to make impossible decisions—decisions that often go beyond their knowledge." He adds: "Unrestricted by regulation, the deci-

sion to recommend therapeutic abortion for psychiatric reasons would remain just about as difficult as at present."[94]

Dr. R. F. Tredgold, a British psychiatrist sympathetic to abortion law relaxation, raised some additional important questions concerning psychiatric aspects of abortion in a lecture he gave at the Royal Society of Medicine in 1964. He found acute depression after therapeutic abortion exceedingly rare, but thought that his careful screening of patients might have helped to produce this result, and that "psychiatric support given before and after the operation" may have helped to prevent serious reactions.[95] Obviously such help would be available to few patients if therapeutic abortion were much more common than it now is. Moreover, Dr. Tredgold points out: "One may replace the foetus by a load of guilt, which is more difficult to treat."[96]

He also speaks very frankly about the attitude of the medical staff involved. Gynaecologists and nurses suffer a severe emotional strain because they "are asked to destroy life rather than to save it, as they have been trained to do." Dr. Tredgold expressed sympathy with the opinion—which on other grounds he opposed—of a "gynaecologist who said that if psychiatrists recommend abortion they should learn to do it themselves." He expressed even greater sympathy for nurses who must obey the "gynaecologists and often cannot voice their reluctance."[97] Dr. Tredgold says that he himself "could well do without" the burden of the decision to recommend "what some feel, and call, murder."[98] Medical reforms are urged that would force each general practitioner, gynaecologist, and psychiatrist to see and take responsibility for his own cases. Among these reforms is one that would shock many members of the American medical profession: "In no circumstances should fees be charged for advice or operation."[99]

Professor Jeffcoate also believes that "the destruction of a living embryo offends something fundamental in human nature." He cites another author for the opinion that "as the pregnancy sac is removed, the surgeon 'can feel the shudder of the theatre staff.'"[100] He suggests that both those performing an abortion and those consulting never accept a fee; thus necessary abortions could be performed without a suspicion of criminal intent.[101]

Apparently there is a good reason why the obstetricians and gynecologists in Salt Lake City were so much less willing to consider abortion than were their colleagues in psychiatry. The "refusal to give that new life a chance" may not only cause strain on the medical personnel involved, but may even generate a load of guilt—guilt that physicians would like to see divided evenly with colleagues, guilt that they may even feel obliged to compensate by performing this unpleasant operation without accepting any fee.

After Dr. Tredgold's article was published, other physicians, in letters to the *Lancet,* suggested that the difficulties of decisions concerning therapeutic abortion might be mitigated by the use of a committee system. One correspondent suggested that "collective decision" by general practitioner, psychiatrist, social worker, and gynaecologist would help the latter "to feel that the

distasteful operation he is to perform has been recommended on grounds which he can accept as valid."[102] A member of the Department of Psychiatry at the London Hospital argued that boards should be established. Some psychiatrists might want to keep independence in decision:

> But since the decision is so harrowing and the individual psychiatrist is so influenced by prejudice, conscious or unconscious, surely it would be wise to share this grave responsibility with colleagues and with, perhaps, a non-professional woman of commonsense and child-bearing age.[103]

Dr. Tredgold, replying to correspondence, showed little enthusiasm for the committee idea, partly because "it would be a great strain on the members of the panel to see so many such cases."[104]

"Fetal Indications"

In the next section we shall see how the idea of the abortion board has been put into practice in the United States. Before proceeding to this topic, however, we must consider another major category of excuses for "therapeutic" abortions—so-called "fetal indications." This expression refers to a probability or possibility that if a child is permitted to be born he may have some serious defect. If abortion is performed in such a case, it cannot be regarded as "therapeutic," unless it is argued that the continuation of pregnangy would damage the parents' mental health. This argument is sometimes offered, and undoubtedly prospective defects in the child have contributed somewhat to the proportion of abortions performed on psychiatric grounds. Nevertheless, there appear to be no studies devoted to discovering what happens to the mental health of parents expecting a possibly defective child if abortion is or is not performed.

A certain percentage of abortions performed as therapeutic are frankly admitted to be for fetal indications. The percentage varies in different hospitals, and also in different years, since the largest proportion of abortions for fetal indications is occasioned by the mother's having rubella ("German measles") early in pregnancy. This disease occurs in periodic epidemics, and it is easily overlooked if a case occurs during a non-epidemic year.

In the study of Dr. Gold and associates of therapeutic abortion in New York City, one abortion in every 19 performed (1951–1953) was for this reason. The proportion rose to one per 10–12 during 1954–1959, then fell to one per 14–15 during 1960–1962. In actual numbers there were as many abortions performed on this excuse in 1960–1962 as in 1951–1959, although abortion on all other indications fell by 50 percent.[105] In 1964, an epidemic year, 329 (57 percent) of the 579 therapeutic abortions in New York City were for rubella.[106] Almost every recent hospital study seems to indicate that where therapeutic abortions are performed, some are performed on fetal indications.

The effects of rubella on the unborn child are nothing new, but they were not noticed until recent times. We should not approach the question as if

epidemics of this disease were now adding defective children to the population. Rather, our growing knowledge of this disease has provided a new *understanding* of a portion of the congenital defects that have always occurred, but were accepted as unavoidable accidents until the relationship between them and German measles was learned.

What are the probabilities of defects? Early studies considered cases in which defects and rubella were found together, looking backward after the fact. The percentage of cases in which defects were found was naturally high. More recent studies have followed through cases in which rubella occurred, examining all the outcomes carefully. There is general agreement that the effect of the disease is slight if it is contracted after the twelfth week of pregnancy.[107] Various studies indicate diverse results if it is contracted before that time, with congenital malformations occurring as seldom as 10 percent of the time and as often as 66 percent of the time. The last was a French study involving only 30 infants. Studies that included large numbers showed a 10–20 percent incidence of defects.[108]

Within the critical twelve-week period, there is a considerable decline in the later weeks. The same large studies revealed an 11–33 percent incidence of defects if the mother contracted rubella in the first four weeks of pregnancy; 11–25 percent in the fifth to eighth weeks; and 8–13 percent in the ninth to twelfth weeks.[109]

A summary of several very small prospective studies showed a markedly higher rate in the first four weeks, but the same declining pattern: 14 of 23 born after rubella in the first four weeks suffered defects; 19 of 72, weeks 5–8; 10 of 127, weeks 9–12. Of 109 pregnancies in which rubella was contracted during weeks 1–8, 43 ended in spontaneous abortion or stillbirth (the infant was born dead), 39 resulted in a normal infant, 27 resulted in infants suffering from gross defects.[110]

Recent studies also reveal that the outlook for babies born with congenital rubella is not good. Of 64 infants studied up to 18 months of age, 44 showed some neurological impairment, although the impairment was minimal in 14 cases and improvement between 12 and 18 months was noted in 15 others. Twenty other infants originally under study had died before 18 months, and 16 mothers withdrew from the study.[111] While the method of selecting cases for this study precludes comparing its results to the prospective studies—that is, studies that follow a non-selected group from the beginning—it is clear that the damage from rubella is even more serious and prolonged than was believed in the early 1960s.

These percentages are frightening indeed. But there are many sides to the rubella story. Investigators studying fetuses that were aborted "therapeutically" after maternal rubella found no evidence of disease in 32 percent, including 20 percent of those whose mothers contracted rubella in the first four weeks.[112] Some of the children affected would have died of the disease, others would have recovered and been born normal, while still others would have

been born with defects. One cannot say how many would have fallen into each of these categories.

A survey of over 6,000 pregnancies during the 1954 epidemic revealed that less than 1 percent of the women had rubella in the first twelve weeks of pregnancy; to be exact, there were 54 cases. In 37 of these, the baby was normal; in 5, definitely defective; in 1, perhaps defective because of rubella. There was a stillbirth, a neonatal death, and a patient who could not be followed up. There were 8 "therapeutic" abortions; in one case, twins were aborted.[113]

A careful Australian study provides information concerning both the frequency and the types of defects that may occur. The incidence of major defects was found to be 60 percent in the first four weeks, about 33 percent in weeks 5–12, and 5.7 percent in weeks 13–16. The most common major defects were significant deafness in both ears (15.5 percent), heart defects (8.3 percent), and eye defects (4.8 percent). There were two cases (2.4 percent) of mental defect. The authors point out that the hearing and heart defects are amenable to treatment. They state: "In the present series, with only one exception (Case 54), it is expected that all the surviving children, including those with handicaps, will be able, with appropriate management, to lead useful lives."[114] Case 54 is a little girl who is retarded, perhaps partly due to a difficult birth.[115] An extensive British study also had very encouraging results, since the intelligence-distribution of affected children was found to be average despite handicaps.[116]

The rubella problem is a serious one, but it has been exaggerated. Lawrence Lader, in his book favoring the loosening of laws against abortion, stated:

> In the last available report of May 1965, Dr. Gilbert M. Schiff and his associates tested the first 300 babies of 1,549 born at the University of Cincinnati Hospital since the recent rubella epidemic. Of these 300, 276 had one or more defects, major or minor, associated with rubella. This staggeringly high percentage of defects forecasts "a major tragedy," warns Dr. Richard L. Masland, of the National Institute of Neurological Diseases and Blindness.[117]

What Dr. Masland may have been talking about is not clear, because he certainly could not have been referring to Dr. Schiff's study. In Lader's reporting of this study there *is* a tragedy, but it is not one of 276 defective babies out of 300. For in fact there were only 16 cases with apparent abnormalities; in only 9 of these was rubella virus recovered (though it could have been missed in others) and not all the abnormalities were related to rubella. In 8 other cases there was a history of rubella or intimate exposure to it, but no apparent abnormality. Where did the number "276" come from? That was the number of cases in which there was neither a maternal history *nor any detectable abnormality whatsoever.* In 33 of these babies, the rubella virus was found, and some abnormality may be discovered in later years. But obviously this is irrelevant to a discussion of abortion, since there was no reason to think the

mother had rubella until after the child was born. If all the mothers who had a history of rubella had been given "therapeutic" abortions, 5 deformed babies and 8 apparently normal ones would have been aborted.[118] The tragedy is that these 5 cases in effect become 276 in the minds of Lader's readers, who may be citizens thinking about loosening the laws or who may be women with rubella thinking about whether or not to have an abortion.

The whole problem will be considerably less serious very soon. An experimental live-rubella-virus vaccine already has been subjected to successful tests. The virus is weakened, but it creates immunity without causing the disease, or making the person vaccinated a carrier.[119] By September 1967, data prepared for publication showed 152 persons had been successfully immunized without infecting any of 142 persons with whom they were in constant contact. Several additional strains of virus were being checked to see if one even better than the original weakened virus could be found. An interesting sidelight of the research is the discovery that a rising level of rubella antibodies—which has sometimes been taken as sufficient to warrant therapeutic abortion—*does not* by itself show that a woman has rubella. In July 1969, this new vaccine was licensed for distribution.[120]

Some have suggested that other virus diseases may cause abnormalities. Only one, cytomegalovirus, is clearly implicated, however, and little is yet known about its frequency or the frequency and seriousness of its effects.[121] In a sense, it would be quite fortunate if virus diseases were shown to underlie many more birth defects, because we are so well on our way to controlling these diseases that we should be in a good position to eliminate more of the defects than the relatively small proportion due to German measles.

Second to rubella as an excuse for "therapeutic" abortion on "fetal indications" has been disease due to Rh-factor in the blood. The New York City study revealed this indication to account for more than one abortion of every fifty—one-third the rate for rubella during 1960–1962.[122]

Unlike rubella, Rh-factor does not lead to a complex of defects. The survival of the infant is the chief stake. Like rubella, the danger of the Rh-factor has always existed. However, when it became understood, some parents who had lost or nearly lost babies in late pregnancy or shortly after birth began seeking "therapeutic" abortion to forestall the unpleasantness and inconvenience of another such episode.

Dr. Hall, in a paper published in 1967, states: "If the husband is homozygous and repeated stillbirths have occurred under ideal care, the futility of further pregnancies may dictate consideration of this alternative."[123]

Now in this case, as in some others we will consider, there is a definite alternative to abortion, namely, the avoidance of further conceptions. Parents who lose a baby due to Rh-factor know immediately what the prospects are for later conceptions. Abortion in this case thus appears to be an expedient for

persons who reject "the futility of further pregnancies" as a matter of convenience, but at the same time refuse to take the trouble to avoid them.

More to the point is that further Rh-complicated pregnancies need not any longer be futile. In the very same volume which contains Dr. Hall's observation is an article reporting treatment of the child before birth by blood transfusions. Of thirty-nine cases that had a very poor outlook, eleven babies survived.[124] These results seem rather poor, but technique is continually improving. In one recent series, at Mount Sinai Hospital in New York, ten babies of a group of twenty-one treated by transfusion survived.[125] Moreover, attempts are being made to prevent the condition by treating the mother beforehand, and early results are promising.[126]

The thalidomide episode brought to the whole world's notice the possible effects of drugs taken during pregnancy. At least one woman who had taken thalidomide received worldwide attention when she traveled from America to Sweden to obtain an abortion; another mother who killed her thalidomide-damaged baby and was acquitted in a Belgian trial received wide publicity.

The only other drugs so far known to cause gross birth defects are some preparations used to produce abortion. Failing to do so, they may cause gross abnormalities. In one experiment, a drug given to twenty-four women caused sixteen to abort without surgical intervention. On surgical removal, half the remaining infants were seriously abnormal.[127] The ordinary birth control "pill" can sometimes cause a relatively minor deformity in baby girls if the mother mistakenly continues taking the drug during pregnancy. Other drugs also are known to have undesirable effects on the unborn but none that involve gross defects.[128]

The thalidomide episode is interesting, because it shows how little can be known at a moment of crisis about probable risks. After the fact, most investigations tend to conclude that only about 20 percent of the women who took thalidomide had abnormal babies.[129] Not all agree. Dr. W. Lenz, of West Germany, believes the risk was more than 50 percent during a two-week period during days 35–50 after the last menstruation. He contends that a 100 percent rate of damage at the precise time of sensitivity cannot be excluded, for it has been produced experimentally in monkeys.[130] However, no one could have known the odds or the critical days when thalidomide was first implicated as the cause of an epidemic of babies born with deformed limbs.

Not all thalidomide defects involve gross deformities of hands and feet. Dr. Lenz points out that "this condition is shown only by a small percentage of thalidomide babies." In some the ears and hearing are affected; in many cases only the thumbs are absent or deformed.[131]

What has happened to those severely deformed thalidomide babies who were not aborted or killed after birth? Their parents were severely shaken, but they have been helped by their communities and have banded together. An English physician working with the children reports that ingenious new devices permit them to exercise a wide range of activities; "problems are being

overcome and a remarkable degree of independence is being achieved." He concludes his report:

> Since the physicians and surgeons are going to retain their interest, the parents their patience and ingenuity, and the children their adaptability and sense of humor, these problems will be faced clearly and undoubtedly will be overcome.[132]

A similar story comes from Germany, where the vast majority of thalidomide babies were born. Children born with gross abnormalities have been found to be more adaptable than persons born normal and subsequently crippled. Children lacking upper limbs are learning to use an artificial arm powered by compressed carbon-dioxide gas. There are hopes that new electronically operated devices will widen their possibilities of action. This whole approach to the problem of the thalidomide children is best summed up by Dr. O. Hepp, Director of the Orthopedic University Clinic, Muenster, who refuses to regard them as abnormal, insists on their alertness and intelligence, and even states: "They are not crippled. They are normal children with another form of arms and legs."[133]

Dr. P.V. Doctor, of Gallaudet College, Washington, D.C., reported similar developments at Heidelberg, Germany. Impressed by the air of confidence and hope, and by the cheerfulness of children and hospital personnel, he titled his article: "The Most Beautiful Smile I Saw in Europe." It was the smile of a nurse, who offered her hand on behalf of one of the children with whom Dr. Doctor had tried to shake hands. Because the child, bidding the visitors goodbye, had such a happy, twinkling smile, the doctor had momentarily forgotten that there was no hand to shake.[134]

Of course, few of these children could have been aborted, because in most cases their parents were not aware in advance that a defect might appear. In any new episode involving drugs, parents would not know with any certainty what the risks might be; the widespread practice of abortion in such a case could easily lead to the destruction of thousands of normal and healthy babies, particularly if early reports proved false, as could easily happen. The solution to this problem seems to be the requirement for even greater care in the testing of drugs. Dr. Lenz blames some in the drug industry—"those who are more accustomed to think in terms of profit than of human suffering"—and some members of the medical profession for the thalidomide tragedy.[135] It seems fair to assume that neither the pharmaceutical firms nor the medical profession will become more responsible if the public at large adopts the attitude that the results of such mistakes can be scrapped like so many defective parts that fail to pass inspection at the end of a production line.

Probably very few abortions have been performed on genetic grounds—i.e., because the infant was expected to have an inheritable defect or disease. Generally the probability of an undesirable inheritable characteristic turning up in the child is much less than the 25–50 percent that many

people expect. These expectations arise from an over-simplified concept of inheritance; actually the odds may be much better, because simple inheritance is not at work in many rather common conditions. When a normal couple have a child with harelip, for example, the chances that another child will be similarly affected are not 50 percent or 25 percent but 4 percent. Inheritance is a factor in harelip, but evidently several hereditary factors, and perhaps environmental conditions as well, are required to generate the defect. A couple who lose one baby due to its being born anencephalic still have a good chance—about 95 percent—of having a normal baby next time. Even after two such experiences, the odds are still 90 percent in their favor. Considering that about 3 percent of births involve some serious developmental abnormality, an added risk of 4 percent or 5 percent is not very great.[136]

However, there are some very serious inheritable diseases that recur in a family with great frequency if the genetic conditions are present. A classic example is Huntington's chorea. This is a disease of the central nervous system which leads to progressive degeneration. It usually begins between ages 30 and 40, and there is until now no medical treatment. Half the children of victims are doomed to be afflicted, but since no one can tell which half until symptoms appear, many will have children and pass on the disease.[137]

Clearly this is a fearful disease, but one wonders what it has to do with abortion. Persons with a family history of this disease, or some other, may wish to avoid having children altogether. If a parent begins to show symptoms *during* a pregnancy, he could have known beforehand that his risk was 50 percent and that of his children 25 percent. These risks have simply doubled—he is a victim of what he feared and his children inherit his risk. Many people seem to be willing to accept this risk, and children of victims are not reported to condemn their parents for having given them life—even on such terms as these.

Another inheritable disease that has been mentioned in discussions of abortion is Tay-Sachs disease. Babies are born normal and healthy, but by their first birthday degeneration of the nervous system begins to show its effects, and the child is dead before it is four years old. There is no treatment for this disease.[138] There are a number of similar, fortunately rare, diseases of infancy that differ in the age of onset and the various symptoms, but that are alike in sharing the same dreadful prognosis. Because these diseases are inherited by a recessive gene in a strict genetic pattern, there is one chance in four that another baby in the same family will succumb.[139]

Conceivably a couple might learn that their first child was a victim of this disease while they were expecting their second. More often they will have had an opportunity to avoid pregnancy. If a pregnancy is in progress, the three to one chance in favor of a normal child is likely to lead most parents to transfer their hopes for the stricken infant to the one they are expecting.

Phenylketonuria (PKU) also is inherited by 25 percent of children whose parents are both carriers, and this disease also can cause severe mental retarda-

tion.[140] However, affected children can be treated effectively by a special diet if the disease is detected soon after birth; detection is possible by a simple test. At least one state (Illinois) now requires this test by law; parents thus are able to treat the affected child, and to avoid future pregnancies if they wish to do so.[141]

One could make a long list of other inheritable diseases. In many cases those who might transmit an inheritable disease know this before any pregnancy begins. In other cases, they will know their position before a *second* pregnancy is undertaken. In only a few cases will a couple first learn during pregnancy that they are likely to transmit a serious disease, and in these cases the odds favor the birth of a normal child.

Moreover, many such diseases are not so fearsome as they at first sound. For example, hemophilia (bleeding disease) is inherited only by men and transmitted only by women. The disease is serious, but many who suffer from it lead fairly normal and happy lives. Treatment is possible and the disease is often not severe.

A pregnant woman who finds that she already has a hemophiliac child can be assured that if the child is a girl, she will be normal, although perhaps able to transmit the disease. If the child is a boy, there is the same chance that he may suffer from the disease.[142] But even if he does, it is often not a great handicap to a good and useful life. A specialist says: "Both potential carriers and bleeders will continue to marry and have children." He believes the disease is "over-dramatized," he points out that "most hemophiliacs are gainfully employed," and concludes: "The outlook today is most encouraging."[143]

Another potential cause of defect in the child is exposure to large amounts of radiation in early pregnancy. Normal use of X-rays is not a problem, but radiation sometimes used in treating diseases—e.g., cancer of the cervix—can cause spontaneous abortion or abnormal development. The occurrence of such cancer during pregnancy is not common, since usually it appears in older women. Some authors advocate abortion by incision followed by radiation treatment. They regard this procedure as therapeutic abortion, and there are certainly no legal obstacles to it.[144] Others suggest that the pregnancy be ignored and radiation treatment instituted unless the infant is near viability, in which case some delay and a premature surgical delivery is regarded as justified.[145] If radiation therapy is carried out while the infant is in the womb, its death and spontaneous expulsion is to be expected, according to this point of view.[146]

Most reports of radiation damage to the unborn date from earlier decades, even before 1925, when accurate pregnancy tests and measures of radiation were unknown or not used. Today it appears that proper controls on the use of radiation treatment have practically eliminated this problem. Even in the older studies, two-thirds of the children were normal.[147] From an ethical viewpoint, necessary radiation treatment during pregnancy, even if it inciden-

tally causes the death of the unborn child, is not opposed by any author on morals and medicine.

The situation is quite different if "therapeutic" abortion is carried out following diagnostic X-rays—even extensive X-ray examinations early in pregnancy. Dr. Niswander has written: "In such cases abortion seems justified on both psychiatric and humanitarian grounds, in spite of the fact that there is little evidence to indicate how many of these children would be deformed."[148] In fact, an expert in the field of radiation has written that "no documented cases are on record where this misfortune could be attributed to diagnostic radiation."[149] If abortion in these cases is therapeutic, then so would it be in a case where a mother, having had a bad fall, thinks her child is likely to be deformed. Education, not abortion, would seem to be the treatment of choice in such cases.

Another category—and the final one—that must be considered under the heading, "Fetal Indications," is the group of babies who are abnormal because of chromosome abnormalities. The commonest of these are the mongol (Down's syndrome; trisomy 21) children.

At present, except in a small proportion of cases in which the abnormality is inherited, the generation of children with such defects cannot be avoided. However, chromosome studies could be made of samples of tissue collected from the early embryo, and certainly someone will soon devise a safe technique for gathering the samples. The argument has already been offered that, when this becomes possible, a "search and destroy operation" should be conducted.[150] In fact, one Illinois physician already has suggested that the possible cost to the state of life-time care would justify aborting any pregnancy subsequent to the birth of a mongol child.[151] Yet almost all such babies would be normal; the increased likelihood of mongolism would only occur in the comparatively few cases in which the abnormality is inherited. Even here, the probability of normality, which is not precisely known, is certainly much better than 75 percent.[152]

But if tests in the early weeks of pregnancy revealed a certainty that a mongol child was developing, the argument to abort it would be urged very forcefully. One would know in advance that the child would be severely retarded, and one could predict with some probability that there would be various other medical problems, including a possible heart defect.

As with other conditions, it is important to notice that mongolism does not necessarily remove all meaning and value from a child's life. One author formulates what is a commonplace in the literature about these children: "They are often fairly docile and good natured, playing contentedly with their toys and giving their parents very little trouble."[153] Such a child can give and receive affection; we expect little more from a pet in return for all the care we lavish upon it.

Moreover, mongol children are not all equally retarded and ineducable. One case—admittedly unusual—involved a girl of normal intelligence.[154]

Another, a retarded boy who learned to read and write, developed the verbal ability of a seventh-grade student, and certainly lived a meaningful life.[155]

Studies suggest that some method of prevention, or possibly even of treatment, may yet be discovered.[156] Of course, no such progress will ever be made either with this disease, or with any of the others so easily written off as hopeless, if abortion comes to be a regular method of "prevention."

In a strict sense, of course, it could not be called prevention. It is treatment of the most radical kind. One pediatrician observes of the already born mongol child:

> Once the diagnosis has been made with a fair degree of assurance, someone will almost surely suggest that the problem be solved by euthanasia. The suggestion may come from the obstetrician, from a nurse, from a member of the family who has been apprised of the situation, or it may occur to the pediatrician himself. Undeniably, euthanasia was resorted to, and not infrequently, in the past. It obviously presents an easy solution to what promises to be a long drawn-out, difficult situation. But the pediatrician must never allow himself to fall into this trap.[157]

He was speaking of euthanasia after birth, but the remark may be applied to "therapeutic" abortion on fetal indications. Dr. Herbert Ratner, Director of Public Health in Oak Park, Illinois, has referred to such abortion as "fetal euthanasia." He holds that it introduces a new principle into the practice of medicine: "To the perfective, preventive, and curative ends, we can now add exterminative medicine."[158]

The Abortion Board

Normally in the United States an abortion is not performed without the advice of two consultant physicians.[159] In many cases, the approval of the head of the obstetrical service or the chief of staff of the hospital is required.[160]

Dr. Alan Guttmacher provided a detailed account of one of the pioneering abortion board systems, that introduced at Mount Sinai Hospital in New York City in 1952. The committee was set up on a permanent basis, with the director of obstetrical and gynecological service as chairman, and members from medicine, surgery, neuropsychiatry, and pediatrics. The obstetrician-gynecologist presenting the case must provide letters from two consultants, one of whom must be available to answer questions. Other physicians may be asked for opinions. If the application is to be accepted, the five-member committee must approve unanimously.[161]

Dr. David C. Wilson reported in the Rosen symposium on the establishment of a board system at University of Virginia. It was occasioned by the increase of abortions on psychiatric grounds. The board, including an internist, an obstetrician, and a psychiatrist (other than the one making the recommendation) individually interviewed the patient and collectively met with her doctor. The result was a drop in the ratio of abortions to deliveries from 1:85 (1941–1945) to 1:337 (1951–1952). In the latter period there were no abortions

on psychiatric grounds.[162] The main reason for the decline, Dr. Wilson explains, was

> the attitude of the committee. This attitude has been that *if the woman wants to have a child, she can have it if all the forces of modern medicine are brought to her aid. If she does not want the child, then it is up to the committee to find out why and to do something about this factor.* [*italics his*][163]

Many other hospitals have reported establishing the committee system in one form or another, almost always with a reduced incidence of therapeutic abortion. Dr. Robert E. Hall reported that at New York's Sloane Hospital for Women, where a therapeutic abortion board was established September 1, 1955, therapeutic abortions fell from 1:69 deliveries (1950–1955) to 1:225 deliveries (1955-1960).[164] To achieve such a reduction was the aim of setting up the system in some cases. For example, at University of Pennsylvania Hospital, physicians, "alarmed by the increased incidence of therapeutic abortions in 1954," when the ratio reached 1:118 deliveries, set up a system of ad hoc three-man committees, working anonymously.[165]

Newark Beth Israel Hospital established a committee system to protect "the best interests of the patient and physician involved." A panel of ten obstetricians and gynecologists is available, but normally groups of four pass on each application. The procedure is anonymous and impersonal. Even the identity of all the members of the committee is known only to the chairman, who is the hospital's executive director. In his office, records are maintained; he notifies local authorities of every therapeutic abortion—a requirement of Newark law.[166]

Dr. Howard Hammond of Marin General Hospital in California reported in 1963 on a ten-year experience with an abortion committee. He considers the device a success, in that it protects physicians from pressure by patients or other physicians, educates patients and physicians to the actual medical indications, and eliminates the "personal element." Three other hospitals in the community refer all their cases to Marin General for evaluation.[167]

That the committee system may not be completely objective is suggested by the very frank examples of Dr. Lohner in his Salt Lake City study. Despite the very low incidence of abortion, one hospital's committee had approved it for a seventeen-year-old girl who was illegitimately pregnant, noting that she should understand that if it happened again she would not be allowed another abortion. Another hospital's committee reversed itself under pressure; the abortion was permitted although the committee maintained that the family was "unjustified in their demands."[168]

The institution of a committee system does not always reduce the incidence of abortion. In the study at Toronto General Hospital a definite increase in incidence was found to have followed the establishment of a committee in 1964. This was explained by an increased rate of referrals from hospitals in the surrounding area, where there is reluctance to permit abortion.[169]

Drs. Keith P. Russell and J. George Moore have stated the values of the committee system, recommended procedures, and reported results in some California hospitals. The values are deterrence of unnecessary abortions, protection of patients, medicolegal protection of the physician, and collection of data. The procedures suggested involve a seven-man board working on documented evidence. At three hospitals, various percentages of applications, ranging from 25 percent to more than 50 percent, were rejected, although the committee system by its mere existence is expected to eliminate the most questionable applications.[170]

The development of abortion boards is not a result of American inventiveness. Although differing in detail, a somewhat similar system has been established in the Scandinavian countries as part of their procedure in cases of legal abortion. In Denmark, for example, a woman applies to a Mothers Aid Center which investigates her case, explores alternatives to abortion, and collects relevant evidence. A Medicosocial Board linked to the center then passes on the application. The board has three members: a lawyer or social worker representing Mothers Aid, a psychiatrist, and a surgeon or gynecologist. The first member often is the one in charge of the Mothers Aid Center handling the case, the second often has been in charge of the medical examination, and the third often is in charge of the facility where the abortion will be performed if it is approved. The Board's approval must be by a unanimous vote. Hospital superintendents have the authority to by-pass this procedure entirely when the life or health of the woman is seriously at stake.[171]

Herbert L. Packer and Ralph J. Gampell, two attorneys, published in 1959 an interesting study of therapeutic abortion practices in California. Twenty-six hospitals answered a detailed questionnaire. Fifteen had some form of committee device. Eighteen hospitals said they had authorized "therapeutic" abortions which did not conform to their own interpretation of the strict requirement of law.[172]

The questionnaire included eleven hypothetical cases, concerning which the hospitals were asked whether they would approve a therapeutic abortion. Whether these cases were submitted to abortion committees is not stated, nor are the responses of hospitals having committees and those without them separately tabulated. The cases ranged from one involving strong medical indications to one involving a pure socioeconomic indication; all but one hospital would have approved the former and all but one would have rejected the latter. On less clear-cut cases opinions were divided; fifteen hospitals would have approved one case involving a psychiatric indication, though Packer and Gampell judged that it fell beyond the strict requirements of the law.[173]

Packer and Gampell seemed to consider the divergence between medical opinion and the law to be the least tolerable aspect of the situation. Accordingly, they proposed that the committee system, regulated by the State Health and Safety Code, be permitted to accomplish an effective relaxation of the criminal laws against abortion. The proposal was that a recognized hospital

committee should be legally empowered to render the performance of abortion immune from prosecution; the committee's approval, based on its own concept of medical advisability, would provide legal authority to operate.[174]

This proposal to institutionalize the abortion-board system has not won significant support. The committees, as we have seen, tend to reduce the incidence of abortion, and it has been pointed out that legislation of the sort proposed by Packer and Gampell would have little immediate effect. Physicians do not easily form a consensus in favor of abortion "because of their view of themselves as preservers of life," Professor B. James George, Jr., of University of Michigan Law School, points out. He adds:

> Abortion creates, although perhaps to a somewhat lesser degree than the related problem of euthanasia, a real tension between the physician's desire to preserve life and his awareness that by performing an abortion he is terminating life.[175]

Dr. Robert E. Hall has expressed dissatisfaction with the committee system:

> Abortion has become the only surgical procedure that usually requires the approval of a committee. In theory these boards serve to police the abortion practices of staff physicians, to prevent them from yielding to the pressure of undeserving patients, and to protect them from possible litigation. In fact these boards serve as medical tribunals which often serve merely to render moral judgments.[176]

Dr. Carl Goldmark, Jr., a member of the Board of Directors of the Association Dr. Hall heads, has been quoted as saying: "The abortion committee is just something for a hospital to hide behind. It's our greatest mistake."[177] He explains that the committees "evolved as a means to dividing the responsibility of the decision to abort," but the system turned out to be a conservative force.[178]

As a consequence, certain hospitals have done without abortion committees and have pursued a policy of permitting "a very liberal interpretation of the law." Two teaching hospitals in Buffalo, following this path, have more than doubled the incidence of "therapeutic" abortion during the period 1960–1964 compared with the period 1943–1949. A case given to exemplify those which account for many of the abortions on psychiatric indications: "A forty-year-old divorced woman with two young teenagers cannot have a child out of wedlock and maintain her social status." Interestingly, the incidence of abortion on private and clinic services was about the same (4 and 3.9 respectively) in the earlier period but became 32 times as common in the private service as in the clinic service (9.6 and .3 respectively) in the later period.[179]

Finally, Dr. Harold Rosen reported (1965) that Johns Hopkins Hospital neither had an abortion committee nor required certificates from two psychiatrists. He explained that no hospital requires two consultations for an appendectomy, while reserving the right to reject the application. "At the Johns Hopkins Hospital, it is felt that this analogy to an appendectomy is valid," Dr.

Rosen explains.[180] Dr. Rosen seems to have forgotten what the symposium he edited ten years earlier revealed about the psychological significance of abortion. Moreover, the very fact that he had occasion to edit such a book shows that abortion and appendectomy are in different categories. Who would think of conducting a symposium on the medical, psychiatric, legal, anthropological, and religious implications of appendectomy?

Techniques of Criminal Abortion

Although the practice of abortion in a primitive society is not always criminal by the norms of the society itself, the techniques used by such groups probably give a fair idea of what medically unsophisticated people will do if they set out to procure abortion.

George Devereux has compiled information on some 300 groups; he warns that the data are fragmentary and attempts to draw no statistical conclusions. But it may be interesting to notice that there are in his data definite mentions of 421 specific techniques—many reports indicating two or more methods. Most often mentioned was the use of drugs—170 reports. Thus more than one-third of all the reported methods involved drugs, and their use for abortion was reported in more than half the societies—for some of which there is no report concerning methods. Next most often reported was some kind of attempt to injure the fetus through the abdominal wall—for instance, by "pounding on the belly" with a stone. Such attempts were included in data on 124 societies. Only 14 reports indicated the use of instruments inside the pregnant uterus. Other methods mentioned more than four times were abdominal constriction by means of a tight belt or girdle (25), strain and effort (17), religious or magical means (17), application of heat (13), jumping or leaping (13), application of skin irritants (12).[181]

Many of the drugs are probably ineffective, some are frankly magical. But it is easy for an ineffective method to gain a false reputation for efficacy since there is a fair number of cases in which women who think they are pregnant are not, and another group of cases in which a spontaneous abortion occurs—when it would have occurred in any case.

Effective drugs perhaps work by causing so much gastrointestinal irritation that uterine contractions are induced, or by causing general organic weakness. In many cases these effects are supplemented by mechanical techniques.[182] A few groups developed rather refined techniques of manipulating and destroying the fetus through the abdominal wall.

The small number of reports (14) of the use of instruments is remarkable. Probably the explanation is that while the anthropological literature as a whole contains few reports of bad physical consequences—and most of these are reports of subsequent sterility—there is a single report of a group being deterred by experienced consequences from further efforts at abortion.[183] This unique case involved an Eskimo girl who nearly died after an abortion by means of instruments; her experience was such an object lesson to her group

that no further attempts at abortion were made during the next ten years.[184] As in this case, unsophisticated people probably learn by experience that crude surgery is dangerous, and they resort to other measures.

Dr. Taussig included in his book a chapter "Methods and Accidents of Illegal Abortion." He lists a number of drugs that are ineffective: ergot, quinine, tansy tea, and others. Other drugs, such as phosphorus, which may be effective abortifacients, are poisonous to the mother as well. Next are physical agencies, particularly direct trauma to the abdomen. Next instruments, including "goose feathers, crochet needles and penholders . . ." The professional, non-medical abortionist is reported to rely on intrauterine syringing with soap water or glycerine, or on the insertion of a rubber tube through the cervix. Either technique often stimulates uterine contractions and abortion.[185]

Dr. Taussig indicates that many victims of the abortionist are not pregnant. He also points out frequent accidents: perforation of the uterus with consequent hemorrhage, infection, and air embolism. The last condition occurs most often if a soapy solution is syringed into the uterus.[186]

Taussig's summary is interesting in itself, but also because it continues to be used by those who promote the cause of abortion law relaxation. Bates and Zawadzki, for example, include much of the same data in a chapter, "Self-induced Abortion."[187] With considerable detail they cite Dr. Guttmacher's story of a farm woman who successfully aborted herself twenty-eight times with a goose feather dipped in kerosene, but who required hospital care after she botched the twenty-ninth attempt.[188]

A catalogue of horrors can easily be compiled by referring to the medical literature. In the eight-year California study of 223 abortion deaths, of which 122 certainly resulted from criminal abortion, the causes of death were infection (54.7 percent), hemorrhage (7.2 percent), infection and hemorrhage together (5.4 percent), and blockage of blood circulation (26 percent), most often by an air bubble. Medication by mouth was reported in twelve cases, but may have occurred in others; it included castor oil, quinine, turpentine, and a type of pill called "Humphries No. 11 tablets." In five cases water, soap, lysol, or potassium permanganate solution were introduced into the vagina under pressure; in 32 cases these and other substances, including alcohol and hydrogen peroxide were introduced directly into the uterus. In a dozen cases air was forced into the vagina or uterus, in one case by the unusual device of a football pump and a plastic straw. In 56 cases solid objects were passed into the uterus; these included surgical instruments, rubber tubes, gauze packing, wires, rods, knitting needles, and even chopsticks. No goose feathers were reported.[189]

Since the California study was a report on abortion deaths, it omitted some techniques that are both ineffective and damaging but that seldom cause death. One of these is the use of potassium permanganate inserted into the vagina in tablet or crystal form. In 319 cases reported in the literature, only two patients died, very few more aborted than would naturally have done so,

but all suffered ulceration, bleeding, and burns in the vagina from this caustic substance. In 125 cases the patient was not even pregnant.[190]

In a 1963 survey, 77 cases of soap intoxication following criminal abortion were found to have been reported in the literature between 1917 and 1962. Of these, 43 patients died, while 34 survived. The soap is absorbed by the system and it causes damage to the kidneys, the liver, and other organs.[191]

It is important to remember that these are studies of unusual cases. We cannot generalize from two London hospitals, of course, but it is worth noticing that Dr. Davis' study of 2,665 cases of abortion (of all kinds) revealed many self abortions by douche with soapy water under pressure and many amateur abortionist's attempts with intrauterine syringing of soap water. Yet there were only six deaths in his series.[192]

The most serious threat, as we have seen, is infection. And the most serious development in case of infection is a condition of collapse called "septic shock." A great deal of attention has been given to this condition in recent years, and progress is being made in treating it. One interesting report indicated 130 cases of septic abortion including 10 cases with septic shock, which had been treated without a death.[193]

The wide variety of abortion techniques revealed in studies of abortion deaths must for the most part reveal the failures of those methods least often used. The greatest proportion of criminal abortions, we saw in the last chapter, is performed by medically trained personnel using standard medical methods. One gynaecologist stated at the British Family Planning Association's conference, *Abortion in Britain*: "The social cost of abortion done illegally is not as high as passion might suggest."[194]

Yet there can be no doubt that the cost of illegal abortion is high, and that every effort should be made to reduce it. For this reason, we must be extremely careful about alterations in the laws, since their relaxation, as we saw in chapter two, might well lead to an increase in criminal abortion. If abortion law relaxation can fail to decrease illegal abortions, even while legal abortions greatly increase, then the horrible facts about the methods and consequences of illegal abortions do not argue in favor of abortion law relaxation. Probably more would be gained by an aggressive campaign aimed at educating the public concerning specific dangers, such as those arising from the use of potassium permanganate.

Medical Techniques of Abortion

At the time Taussig wrote, some physicians were still giving drugs or injecting pastes or solutions into the uterus in an effort to induce labor. He pointed out the dangers of such procedures. Irradiation with X-ray had been used to kill the fetus, but expulsion was often delayed, and an inadequate amount of irradiation sometimes led to a live but malformed birth. Taussig himself favored surgical procedures similar to those still in common use.[195]

These methods are described in detail in standard obstetrical texts.[196] It is only necessary to indicate briefly what the various methods are, and why one or another is chosen.

The most frequently used method is the stretching (dilatation) of the opening (cervix) to the uterus and the scraping of its inner walls with an instrument (curette). The procedure is called "dilatation and curettage," or "*D. and C.*" for short. Not every *D. and C.* is performed as an abortion; the procedure also may be used, for example, to remove abnormal, non-malignant growths. Either general, local, or spinal anesthetic may be used. If the opening to the uterus is not easily dilated, it can be packed with gauze, which causes dilatation in a day or so. Hormones are sometimes given before surgery to improve the condition of the uterus.[197] Since the surgeon is working blind on a very delicate surface, there is some danger that he will break through the uterine wall (perforation), induce hemorrhage, or leave behind some of the tissue that belonged to the pregnancy.

Generally this procedure is not used beyond the twelfth week of pregnancy. The sixth and seventh weeks are thought to be the optimum time. As Dr. Guttmacher remarks: "In pregnancies beyond the seventh week, fetal parts are recognizable as they are removed piecemeal."[198]

After the twelfth week of pregnancy, the technique most commonly used until the last few years was a miniature cesarean section or *hysterotomy*—to be distinguished from *hysterectomy*, the removal of the uterus. The latter operation is not performed merely for abortion, but may be necessary if the uterus is seriously damaged or diseased. Hysterotomy, because it involves incision, is subject to serious complications; in recent years there has been an effort to find alternatives to it, except in those cases in which surgical sterilization is performed at the same time as the abortion.[199]

Attempts have been made to induce abortion by introducing oxytocin intravenously. Oxytocin is the hormone which normally stimulates labor and milk production. If it is used carelessly, the results can be disastrous; it can cause the uterus to rupture.[200] Used very carefully after mid-pregnancy, it can induce labor, similar to spontaneous abortion. The procedure is at least as difficult for the mother as childbirth.[201] Moreover, the possibility of serious complications has been reported.[202]

A simple technique has been used in recent years; it is amniotic fluid replacement. A large needle is inserted through the abdomen and uterus into the amniotic cavity. Some of the fluid is withdrawn and replaced with a glucose or saline solution. The hormones which prevent labor are apparently inhibited and a "spontaneous" abortion follows.[203]

An even newer technique is "vacuum aspiration." Developed in Mainland China, the U.S.S.R., and Eastern Europe, this method has already been adopted in Israel[204] and Britain.[205] A metal, glass, or plastic tube (cannula) is connected by rubber pressure tubing to a bottle, the pressure in which is reduced by means of a suction pump. Usually this technique has been used in

the first twelve weeks of pregnancy, although a Czechoslovakian abortionist reports success in 350 cases, 44 of whom were beyond the twelfth week.[206] The mouth of the uterus (cervix) is dilated less than would be required for a *D. and C.*, and in some cases dilatation is unnecessary. In Eastern Europe an electrical dilator, said to be able to do the job in one or two minutes, has been developed.[207] The aspiration procedure is reported to be very fast—fifteen seconds to three minutes. Moreover, the technique is not difficult to master. Although special equipment is required, it is not especially complex or expensive. The gadgetry involved in this technique is certain to help it gain acceptance in America. The prospect of five-minute operations will also have an appeal.

With the vacuum aspiration technique, less anesthesia is needed than would be required for a conventional *D. and C.*; in some cases the procedure can be performed without any anesthesia at all. The smaller fetuses are readily broken up and sucked out of the uterus. Sometimes the cannula becomes clogged, especially by the umbilical cord of a large fetus, and it must be withdrawn and freed. But usually even the fetal skeleton will pass through the tube.[208] One version of the apparatus includes a spinning, screw-shaped knife just inside the tip of the cannula; this equipment can handle larger fetuses because it grinds them up as it sucks them out of the uterus[209]

The commonly used medical techniques of abortion are not without their risks. Yet it is difficult to determine precisely how serious these risks are. Various studies probably use different criteria to measure complications, and studies in diverse countries are likely to refer to different sorts of patients. Clearly, the rates of mortality and complications following therapeutic abortions performed on strict medical indications are likely to be high, because the patients are already ill and the abortion may not be performed at the easiest time.

The dilatation involved in the *D. and C.* can cause tearing or rupture of the cervix.[210] Curettage may cause perforation of the uterus. The occurrence of this complication depends partly on the skill of the abortionist, and has been variously reported as occurring in .09 percent to 6 percent of cases.[211] At Toronto General Hospital, 1954–1965, with only 98 abortions by *D. and C.*, there were 4 perforations. In 3 cases a loop of bowel was brought down, and an immediate abdominal operation to remove the uterus was necessary.[212] Inflammatory complications also may follow; the rate reported depends very heavily on the extent of temperature-elevation required to indicate a complication, and varies from .87 percent to 55.6 percent.[213]

Considerable differences in death-rates also have been reported. A Danish study (1953–1957) indicated three deaths resulting from 9,429 abortions by *D. and C.* The death-rate from hysterotomy was more than four times as high—7 deaths in 5,320 patients.[214] By contrast, Dr. Mehlan reported that while Sweden and Finland had death-rates comparable to Denmark's, in Hungary (1957–1958) and Czechoslovakia (1958–1959) the death-rate from therapeutic abortions—most of which must have been by *D. and C.*—was 6 per 100,000,

and he stated there were no deaths resulting from 67,000 abortions in Bulgaria.[215]

In a later report, Mehlan presented even more optimistic figures. In Czechoslovakia and Bulgaria (1963–1964), no deaths among 207,000 cases of legal abortion; in Hungary (1963–1964) only two deaths among 358,000 legal abortions.[216] Still, delayed after-effects were noted in the form of difficulties with a later pregnancy. Spontaneous abortion, premature birth, and stillbirth were perhaps doubled.[217]

A report by Andras Klinger of the Hungarian Central Office of Statistics, published in the same volume with Mehlan's report, partly confirms and partly puts in doubt Mehlan's data. Klinger states that premature births increased (April 1964) after legal abortion. The rate was 10.1 percent with no prior abortion, 14.4 percent after one abortion, 16 percent after two, and 20.5 percent after three or more. Rehospitalization within four weeks after abortion was necessary in 1.49 percent of all cases. But Klinger states that Hungary has a death-rate from legal abortion of two or three annually.[218] Absolutely, two or three annually is not many more than Mehlan's two in two years, but the discrepancy makes one wonder whether either figure is at all reliable.

Assuming that the Eastern European statistics indicating such low death-rates are reliable, we are bound to wonder how to explain the difference between the Scandinavian and the Eastern European experiences. Part of the explanation could be that in Eastern Europe abortions are almost always performed early in pregnancy, while in Scandinavia they are permitted beyond the third month. Christopher Tietze has proposed this explanation.[219] But it does not account for the difference between 3 deaths per 9,429 Danish abortions by *D. and C.* and 2 or 3 deaths (or less) in over 184,000 legal abortions in Hungary (1964). Perhaps vacuum equipment already was rather widely used by that time, but this seems unlikely.

Part of the reason for the difference could be that in Denmark and other Scandinavian countries a surgeon, though well trained and equipped, is not so expert at abortion as is an Eastern European legal abortionist. The Scandinavian rate for deaths following abortion by *D. and C.*, is about equal to what may be projected as the American death-rate following *illegal* abortion–300 per 1,000,000–if one assumes that there are as many as 1,000,000 illegal abortions per year in the United States.

The method of abortion by amniotic fluid replacement was greeted with considerable enthusiasm precisely because it was hoped this technique would reduce the complications and death-rate following abortion after the twelfth week. However, a Japanese physician reported in 1965 that this method had been tried extensively in Japan, and that serious complications and deaths due to it had led to its practical abandonment.[220] The Council of the Royal College of Obstetricians and Gynaecologists also indicated that dangers were being observed in the British experience with this technique.[221]

The vacuum technique is rather new, and its proponents are claiming that it is much less subject to complications than the traditional *D. and C.* The Czechoslovakian, Vojta, claims that the most serious complication is "residues"—that is, unremoved tissues which could lead to infection. He reports these in 4–7 percent of the abortions performed by others, and admits to 2.5 percent initially (reduced to less than 1 percent by double-checking) in his own patients. "Later complications," he adds, "were no more frequent in our study than when the classic method was used."[222]

British reviewers of the literature point out that no perforations have been reported in over 14,000 abortions, and that inflammatory complications vary from .8 percent to 5 percent in different reports—a range about one-tenth that for the *D. and C.*[223]

From these reports, it would seem that vacuum aspiration is a very efficient method of abortion. However, abortifacient drugs that can be taken whether needed or not on a pill-a-month basis may be even simpler and more efficient. They seem likely to be more acceptable psychologically, since they need not interfere with the "normal" menstrual cycle.

Abortion in the Early Stages of Pregnancy

In recent years developments in the field of birth-prevention technology have centered upon drugs and upon devices inserted into the uterus—e.g., plastic loops. The various drugs so far marketed, though differing among themselves in many respects, have all been dubbed "the pill." Newer drugs that will be effective when taken some time after intercourse are under development; these are popularly "the morning-after pill," though some of them will allow considerably longer than one day for second thoughts.

Two different questions arise with regard to these techniques of birth prevention. First, do they prevent fertilization or do they interfere with the development and implantation of the zygote after fertilization? Second, if they have the latter effect, are they to be designated *contraceptives* or rather *abortifacients*? If both of these questions are answered in the affirmative, it will follow that many persons who think they are practicing contraception are in fact practicing birth-prevention by repeated early, induced abortions.

The devices inserted into the uterus at first were called "IUDs"—*intrauterine devices.* Lately, however, many authors refer to them as "IUCDs"—*intrauterine contraceptive devices.* The reason for this change in nomenclature is not altogether clear. It may be stimulated in part by a desire to avoid possible confusion, since "IUD" sometimes is used to signify the *intrauterine death* of a fetus, in contrast to death following live birth. Or perhaps adoption of the newer terminology is an attempt to settle by mere words the substantive question whether these devices do or do not cause abortion.

How do they work? The question received extensive treatment at a 1964 conference devoted to intrauterine contraception.[224] One pair of investigators reported on intrauterine foreign bodies in rodents; the results seemed to indicate that fertilization may occur, but implantation is prevented.[225] Other investigators reported on other experiments.

Most interesting were Luigi Mastroianni's experiments with monkeys. The results suggested that the IUD causes the ovum to move through the tube too quickly for normal development to proceed; whether fertilization occurs was not established.[226] In the discussion following the formal papers, evidence was presented and accepted that a fertilized human ovum had been recovered from a patient wearing an IUD; however, it was suggested that this could possibly have been a case in which the woman would have become pregnant—as occasionally happens with the IUD.[227]

Other material presented at the conference was consistent with the possibility that the IUD interferes after fertilization but before implantation. In an appendix, J.H. Marston and M.C. Chang, of the Worchester Foundation for Experimental Biology, summarized the situation as follows:

> Concerning the effect on fertilization, our observations on the rat, rabbit, and mouse (unpublished), and the reports from others, do not support the view that fertilization is inhibited. Even in the human, a newly penetrated pronuclear egg with fertilizing sperm tail has been presented at this conference by Bonney and Cooper. The monkey egg with corona radiata and cumulus, mentioned by Mastroianni, is probably a newly ovulated egg, either recently penetrated or with insufficient time to have been fertilized.

Adding that various studies do indicate interference with the transport of the ovum, they conclude: "The main effect of the intra-uterine device, however, is on implantation."[228]

Reporting recent experience, Christopher Tietze noted in December 1966, that in a group of 1,028 women who became pregnant while using IUDs, 588 did so with the device in place. Of these pregnancies, 26 (more than 4 percent) were ectopic—that is, the pregnancy was not in the uterus. Now this number was very great, relative to the whole group of pregnancies, but less than one-tenth the number of ectopic pregnancies Tietze calculates could normally be expected in so many women during the length of time considered. Tietze concludes that the effect of the IUD must be to "interfere with events in the tubes."[229]

Undoubtedly this is the case, but the extremely high rate of ectopic pregnancies seems to indicate that IUDs also interfere with implantation. The fact that, of established pregnancies whose outcome was known, abortion occurred more often if the device was in place than if it was not, also suggests that the IUD affects the uterus itself. Tietze points out that the true incidence of induced abortion cannot be determined.[230] However, scattered reports, some complete with illustrations of the IUD embedded in the early aborted

conceptus, provide evidence that these devices will cause abortion when they directly interfere with normal development.[231]

In many recent publications, the mode of action of the IUD is not even discussed or it is assumed that the research reported at the 1964 conference proved it to be contraceptive—i.e., to prevent fertilization. A 1966 survey of contraceptives in the *Acta Obstetricia et Gynecologica Scandinavica,* an internationally respected journal, concluded:

> These observations suggest that fertilization is prevented or that the ovum is fertilised but passes through the Fallopian tube so rapidly that it reaches the endometrium too early, that is before either the ovum or the endometrium is sufficiently prepared for nidation.[232]

Another 1966 study, by a World Health Organization scientific group, reached a similar conclusion:

> No single cause or mechanism of action of an IUD has so far come to light. The multiplicity of observed effects, in fact, suggests that these devices may act at several levels and in several ways, not only in different species, but possibly also in the same species.

Moreover, at the 1967 conference of the International Planned Parenthood Federation, two papers were presented that tended to support the view that the IUD owes at least part of its efficacy to interference with implantation. Dr. A. B. Kar of India, in a comprehensive survey of scientific inquiry into the mode of action of the IUD, summarized: "The most widely held view about the *modus operandi* of IUDs is that they somehow prevent implantation of the blastocyst." Dr. P. Eckstein, a British researcher, reported on his work paralleling Mastroianni's. But Eckstein summarized his results: "These findings are inconsistent with the ones obtained by Dr. Mastroianni in superovulated monkeys."[233]

To sum up. The IUD does not always prevent pregnancy; therefore it does not always prevent fertilization. Dr. Tietze's summary seems to show that *part* of the effectiveness of this technique of birth prevention is due to interference "with events in the tubes." But there appear to be other aspects of its effectiveness.

The fact that the most effective type of IUD, the spirals, also are most often expelled from the uterus and most often have to be removed for medical reasons (usually bleeding or pain)[234] suggests that fertilized ova would be expelled from a uterus containing an IUD more often than would normally happen. A recent study in Sweden demonstrated "prelabor-like" uterine activity, coinciding with the normal time of ovum transport into the uterus and implantation there. One case was reported in which a woman became pregnant with the IUD in place and maintained the pregnancy, apparently because the device was removed before implantation was due to occur.[235]

Thus, on the available evidence, at least part of the effectiveness of the IUD should be attributed to interference after fertilization, with the develop-

ment of the zygote or with implantation. The proportion may be as low as 10 percent, if Dr. Tietze's statistics concerning tubal pregnancies reflect the actual rate of fertilization. Or, perhaps, fertilization occurs with normal frequency, but increased activity of both the tubes and the uterus reduces the probability of implantation in either location, but more so in the uterus than in the tubes—which may be partially blocked by scar tissue, infection, or some other condition.

The oral contraceptives present a more complicated picture. There is very general agreement that those marketed as of mid-1967 usually inhibit ovulation. A publication of International Planned Parenthood Federation summed up the evidence in 1965:

> It appears most likely that they inhibit ovulation . . .. The effect of oral contraceptives on cervical mucus, and on the endometrium must also be taken into account in considering their mode of action . . .. A further possibility to be mentioned is that oral contraceptives could act on the secretion or motility of the Fallopian tube so that the fertilized ovum reaches the uterine cavity prematurely and fails to implant.[236]

The 1966 survey of contraceptives in *Acta Obstetricia et Gynecologica Scandinavica* arrives at similar conclusions. Although probably the oral contraceptives inhibit ovulation, with the estrogenic component of the pill playing the chief part in its effectiveness, other modes of action are not ruled out, since there is evidence that ovulation occurs in some cases although birth-prevention approaches 100 percent. Partly the mode of action may depend on levels of dosage in different pills. In some, the author explains, the effect may be to block sperm migration. He adds this significant paragraph:

> Another explanation of the mode of action of oral contraceptives is that they cause changes in the endometrium which make normal implantation of the ovum impossible. It may also be possible that the motility of the Fallopian tubes increases under their influence, the fertilised ovum thereby reaching the endometrium too early, i.e., before either the ovum or the endometrium is sufficiently prepared for nidation.[237]

Another 1966 review of the topic, by A. Fanard, J. Ferin, and R. Demol, noted that the combination type pill "could perhaps exclude the possibility of nidation should a zygote reach the uterine cavity." A more normal situation in the uterus is observed with the "sequential method."[238]

Experiments with variations of dosage of estrogen in sequential contraceptives seem to confirm that these are more dependent on ovulation inhibition for their effect than the combination-type pills,[239] though even with these, other modes of action seem to play some part. Four outstanding investigators have summed up recent studies: "Thus even in the absence of progestational agents, antifertility mechanisms other than ovulation inhibition appear to be at work."[240] This conclusion refers to pills used by the "sequential method."

Dr. M.C. Chang, the biologist who worked with Pincus in developing the original "pill," reported on recent research at the 1967 conference of the International Planned Parenthood Federation. Chang reported animal experiments which indicate that ovulation is not always inhibited, but that hormone contraception is nevertheless effective, in great part because *the fertilized ovum* degenerates. The point of this research was both to try to explain the "still obscure" mode of operation of "the pill," and to seek its improvement. Chang concludes:

> In the light of the facts mentioned above, continuous medication with progestational compounds as practised in recent years, besides the possibility of inhibiting ovulation, would disturb many physiological processes of normal reproduction (Table IV). Thus the effectiveness of these contraceptive pills is not surprising.

The table indicates that several tested compounds caused egg degeneration and possible expulsion of fertilized eggs from the uterus.[241]

As to the oral contraceptives, then, evidence seems to show that the combination types do not always prevent conception by inhibiting ovulation. The less completely effective sequential types probably also involve more than one mode of efficacy. In general, conception probably is usually prevented by "the pill," but interference with the development and implantation of the fertilized ovum cannot be excluded as a factor contributing to the effectiveness of every type of "pill," and very likely such interference is a factor, especially in the standard, combination-type pill.

In the future, many new types of pills will appear. Gregory Pincus, on whose work the first "pill" immediately depended, has organized research materials from his own studies and those of other investigators into a book-length summary, pointing to the links in the process of procreation that might be interfered with by drugs. He devotes a whole chapter to the stage between fertilization and implantation, and another chapter to the development of the blastocyst and implantation. Toward the end of the latter chapter he includes a paragraph on abortion which begins: "Many of the procedures which prevent ova from implanting will also cause resorption or abortion of implanted embryos."[242]

The possibilities are under active investigation. Supported by grants from the Population Council, a channel of funds for population limitation, and a grant from the U.S. Government's National Institute of Child Health and Human Development, researchers at Yale University Medical School have tested a number of compounds which interfere with implantation and development.[243] The "best" of these is a compound designated technically "ORF-3858"—popularly, "the morning-after pill." Tested in monkeys, ORF-3858 was found effective: "It is most effective prior to implantation, but in larger doses is effective later in pregnancy."[244] This compound works in the desired "all-or-nothing" mode—it is either effective or not, there are no monsters. It does not alter the "normal menstrual cycle" and it has what seems

to be a major desideratum of every modern birth-preventative: "If anything, it slightly enhanced the willingness of the female to accept the male in mating."

Research on another drug, F-6103, has reached the stage of testing on human subjects. Although detailed scientific reports do not seem to have appeared (mid-1967), news of this work has already been reported popularly in an American women's magazine.[245] Dr. Lars Engstrom of Karolinska Institute in Stockholm has been directing experiments—on pregnant women officially approved for abortion—with an anti-progestational agent. This has succeeded in inducing abortion in women pregnant as long as two months. The Swedish parliament passed a law (spring 1967) which will allow further experiments. The apparent objective of this development is a birth-prevention technique that will require only one pill a month. In this way, a woman would never know whether she had been pregnant or not.

Dr. Sheldon Segal of the Population Council has reacted with enthusiasm: "Once we have answered the questions about safety and effectiveness, there is no doubt in my mind that such a drug would be a great contribution to mankind."[246] There seems to be some disagreement whether to call this drug the "A-pill"—for abortion—or the "M-pill"—for menstruation. The latter will more likely be its eventual popular designation.

Setting aside these coming developments, we must return to the question whether techniques of birth prevention that interfere with events after fertilization should properly be called abortifacient, or should be allowed the name "contraceptive," as the "c" which some insert in "IUD" suggests.

British physiologist A.S. Parkes, for example, says of the IUD that, despite its disadvantages "for the immediate future it may well be the answer to population control in less sophisticated countries." He wishes to defend the device from the "smear" of being labeled abortifacient: "It is true that it possibly interferes with implantation rather than fertilization, but this is not abortion." Conception, he claims, means implantation, not fertilization, and one cannot cause abortion without conception. Besides, since in any particular cycle one cannot tell whether fertilization has occurred, Parkes says that the embryo is only hypothetical, and a hypothetical embryo cannot be aborted. (This part of the argument is fallacious. One might as well say that because no one ever knows whether an accident will occur at a given intersection, all accidents there are hypothetical, and hypothetical accidents never happen.) Parkes concludes: "Biologically, therefore, the IUCD is not an abortifacient; it is a legitimate contraceptive device."[247]

The unsuspecting reader coming across this argument might think that biologists, though prone to fallacy, have some special knowledge that conclusively shows that conception should not be equated with fertilization. However, at the 1964 Conference on the IUD, the following remarks concluded the discussion concerning mode of action.

Dr. Samuel Wishik suggested: "I do not think it necessary for us to change the traditional definition of conception as being the point of fertiliza-

tion." He wanted to work on the definition of "abortion" instead. Dr. Howard C. Taylor, Chairman of the Conference, said: "It has been suggested that we ought to set our definition that pregnancies start at implantation. I think it ought to occur to us that we are talking about a theological definition, not a biological definition, and this group can't possibly help in making this definition." Dr. Christopher Tietze warned, however, that people who might feel that the mode of action of the IUD is an issue of major importance should not be disturbed. And he concluded this discussion by answering Dr. Taylor: "I fully agree with you, sir, that the time at which a human life or any life begins is a philosophical question." However, "If a medical consensus develops and is maintained that pregnancy, and therefore life, begins at implantation, eventually our brethren from the other faculties will listen."[248]

Dr. Tietze was urging prudence on his colleagues, but at the price of consistency. After all, a whole scientific conference sponsored by CIBA, which we cited in chapter one, was devoted to "Preimplantation Stages of Pregnancy." It hardly makes sense to speak of "preimplantation stages" if pregnancy does not begin until implantation. Dr. Tietze was not even consistent with himself. In a conference on pregnancy wastage, he presented a paper: "Introduction to the Statistics of Abortion," in which he relied on Hertig's data to conclude that there is "an abortion ratio of at least 25 percent among all pregnancies."[249] The editor of this volume also states in introducing it: "The reproductive process begins with the fertilization of the egg . . .. Actually, students in this field are interested in any and all loss of products of conception at any stage after the union of the two pronuclei in the fertilized ovum . . .. With some diffidence, and after wide consultation, the term *Pregnancy Wastage* has been used to indicate the total post-conceptional reproductive deficit."[250]

At the conference on the IUD, Dr. Alan Guttmacher made the summation. He called attention to a statement in a pamphlet commissioned by the British Council of Churches. A distinction is drawn between "biological life and human life," and implantation is accepted as "the point at which the former becomes the latter. We agreed that abortion as a means of family limitation is to be condemned. But a woman cannot abort until the fertilized egg cell has nidated and thus becomes attached to her body."[251]

Dr. Guttmacher added that while he shared "Dr. Mastroianni's hope—perhaps his belief—that the IUCD prevents fertilization," the position of the British Council of Churches statement indicated "eminent theologians on our side" even if this were not the case.[252] Dr. Guttmacher did not quote the second page of the booklet which indicates that it "must not be held to carry the approval of the Council or its member Churches," nor the third where, among theologians and others (including the Chief Consulting Officer, Milk Marketing Board of England and Wales) one finds: "Dr. Eleanor Mears, Gynaecologist; Medical Secretary, Family Planning Association, and the Council for the Investigation of Fertility Control."

The distinction attempted in the British Council of Churches pamphlet between biological and human life seems scarcely coherent, since all life is biological but at the same time any life pertains to one or another species. One might as well say that automobiles are *mechanical* in the first stages of their construction and only become Fords or MG's at a certain stage—e.g., when the chassis is fully assembled.

A later pamphlet, published by the Anglican Church Assembly Board for Social Responsibility, therefore quietly ignored the earlier effort, and instead emphasized the *potential* character of nascent life:

> Granted that the living antecedents of life are present potentially in the *ovum* and the *spermatozoon* in their separate existences, a new potential is created at the moment of their conjunction in conception, in the fertilization of the ovum by the sperm. This potential is heightened by implantation or nidation, which may occur within a week of conception.[253]

This committee wished to deal with the entire matter of abortion; in effect its argument raises the question whether the living human individual existing at conception must be regarded as a human person, equal to others in rights and immunities. We shall deal with this issue in chapter six, and we shall consider other aspects of the argument of this pamphlet below.

The important point here is that the earlier pamphlet contained a peculiarly indefensible view omitted in the later one. Glanville Williams, attacking the later pamphlet for not advocating the extent of abortion-law relaxation he would like, noted the change: "The report of an earlier Church committee attached a somewhat different meaning to the notion of conception." After summarizing the change, he added: "The suggestion is of practical importance in relation to intra-uterine contraceptive devices (IUCDs). According to some opinions, these work not by preventing the formation of the zygote but by preventing attachment to the womb. If these devices are found to be safe and effective, it is of importance that they should be regarded as contraceptive and not as abortifacient in their operation."[254]

"It is of importance that they should be regarded . . ."—the issue is clearly one of public opinion rather than one of fact. And it was seen to be so long before this 1966 reflection of Glanville Williams or the 1964 warning of Christopher Tietze. In July 1959, a conference on conception was held, the proceedings of which were not prepared for publication until 1962, when the Population Council and the Planned Parenthood Federation of America joined in sponsoring publication. Bent G. Böving concluded a long chapter on implantation, and possibilities for interfering with it, by urging that "becoming pregnant" and "conception" should not be identified with *fertilization.* Conception is not instantaneous, he argued, and conception "is certainly no less applicable to the uterine reception of the ovum than to the ovular reception of the spermatozoon. Whether eventual control of implantation may be reserved[*sic*] the social advantage of being considered to prevent conception

rather than to destroy an established pregnancy could depend on something so simple as a prudent habit of speech."[255]

Böving himself, however, was not so prudent, because earlier in the same study he referred repeatedly to the result of fertilization as a "conceptus," and speaks of "the conceptus before, during, and after implantation."[256] And at the very beginning of the study, summarizing the work of Hertig which we discussed in chapter one, Böving states: "Thus, the greatest pregnancy wastage, in fact by far the highest death rate of the entire human life span, is during the week before and including the beginning of implantation, and the next greatest is in the week immediately following."[257] Those who sought to distinguish between biological life and human life would have been embarrassed by the imprudence of that statement!

Of course, some still argue that it is a philosophical or theological question when human life begins and when interference in the reproductive process may rightly be called abortion. We do not doubt that it is a philosophical question whether every human individual is a human person; we shall treat that question in chapter six. But we submit that the life of each human individual begins at fertilization, and that interference with it from the completion of fertilization onward certainly is abortion. From the time the biological facts about fertilization were discovered until the technology of birth prevention developed to the point that interference after fertilization became a possibility, no one ever doubted this.

Lest we be accused of one-sidedness, we call two witnesses for confirmation: Margaret Sanger and her British counterpart, Marie Stopes.

Mrs. Sanger describes the process "called fertilization, conception, or impregnation." Then she continues immediately:

> If no children are desired, the meeting of the male sperm and the ovum must be prevented. When scientific means are employed to prevent this meeting, one is said to practice birth control. The means used is known as a contraceptive.
>
> If, however, a contraceptive is not used and the sperm meets the ovule and development begins, any attempt at removing it or stopping its further growth is called abortion.[258]

Marie Stopes, in a speech, was defending birth control against charges made by "that dishonest type of pseudo-religious person who thinks more of his position as a religious person than he or she does of the truth." Dr. Stopes clarified:

> A large number of the opponents of birth control deliberately confuse birth control with abortion. I suppose it is all right for me to explain to you that abortion can only take place when an embryo is in existence. An embryo can only be produced after the sperm cell and the egg cell have actually united, after their nuclei have fused and after the first cell divisions have taken place. The moment that that has taken place you have there a minute, invisible, but actual embryo, and anything which destroys that is abortion, and we never in our clinic do anything which can in any way lead to that destruction. But *until* the sperm cell

> has united with the egg cell, no embryo exists or can exist, and anything which keeps the sperm away from the egg cell cannot lead to or be abortion because no embryo can then exist.[259]

These statements were made many years ago—in 1920 and 1921. But the same thing continued to be said until it became necessary to redefine *conception, pregnancy,* and *abortion* in order that the new technology of birth-prevention could be presented as contraceptive. For example, Dr. Alan Guttmacher, even in the 1964 revised edition of his popular birth-prevention guide, failed to make the adjustments prudent speech now requires. Thus, after explaining the process of fertilization he goes on: "Fertilization, then, has taken place; a baby has been conceived. After conception occurs, the egg attaches itself to the wall of the womb where it grows for nine months until the baby is ready to be born."[260]

Nor is this reference to the fact that at fertilization *a baby is conceived* a mere slip of the pen. The chapter on abortion begins: "Birth control and sterilization accomplish the control of family size by preventing union of sperm and egg, in this way not allowing conception to take place. Once a pregnancy has already begun, family limitation is still possible by employing a wholly different procedure—induced abortion."[261]

In speaking thus, Mrs. Sanger, Dr. Stopes, and Dr. Guttmacher were merely following established terminology. In the introduction to *A Survey of Research on Reproduction Related to Birth and Population Control* (as of January 1, 1963), which was compiled by the United States National Institutes of Health and published by the Public Health Service as an official document, we find the following clear statement and warning:

> All the measures which impair the viability of the zygote at any time between the instant of fertilization and the completion of labor constitute, in the strict sense, procedures for inducing abortion. Administration of compounds whose mechanism of action is of this character to man as either an investigative procedure or as a practical birth control technique poses legal questions that have not as yet been resolved.[262]

The problems—moral as well as legal—are more acute today than in 1963, and nothing is being done toward resolving them; a more prudent use of words has merely concealed the issue from public view.

In conclusion, then, it appears clear that new techniques of birth-prevention sometimes cause abortion. How often any particular device or pill has this effect no one knows. If a man and woman, of known fecundity, regularly have intercourse without trying to avoid conception, the woman probably will be pregnant in three months or less. If IUDs and pills cause the abortion of only 5 percent of these pregnancies, the number of abortions induced each year in the United States alone must run in the hundreds of thousands.[263]

Thus the new technology of birth prevention could at last make Dr. Rongy's guess come true. More important, the attitude toward life at its most

delicate stage induced in usually honest men by their need to obscure the truth with a "prudent habit of speech" seems to have prepared the way for ever-widening incursions upon nameless ones, no longer safe within their mothers' wombs but buried there as technology, like a child playing with alphabet blocks, becomes ever more adept at changing wombs to tombs.