

NOTE

NEW DIMENSIONS OF RESPONSIBLE PARENTHOOD

New knowledge calls for new expressions of responsibility, whenever it concerns vital problems. This is especially true in the case of transmitting human life. During the past three or four million years the child was accepted as it happened to come, as a blessing, a mixed blessing, or, in rare exceptions, a curse. The total shape of culture and the lack of knowledge and reflection in this area did not allow any other choice. In our age of profound and rapid cultural change, of progress in science and especially in medicine, a new world view and a new level of consciousness and reflection have made the begetting of children a personal choice of the spouses. For some, this might become nothing more than a cost-benefit calculation. For the mature believer, it is one of the most fundamental ways of expressing a response to God's gifts and calling, to the needs of the family and of society at large.

The transition from such a deeply-rooted pattern to a rather new one could not be expected to be always easy and elegant. Nor should there be surprise and anger if the Church, in a historical period characterized by a general defensive attitude against Modernism, reacted to the new situation by reinforcing traditional attitudes and moral rules. In a favored moment of liberty and readiness to dialogue with the modern world, the Second Vatican Council successfully explored the horizontal and vertical dimensions of responsible parenthood.¹ The Encyclical *Humanae vitae*, on the other hand, aimed only at defining one particular aspect, namely, the proper means of preventing conception in cases in which transmission of life does not seem to be desirable. Following closely the teaching of Pius XII, it canonized the rhythm method as the only moral way of regulating birth, while, in contrast to the Encyclical *Casti connubii* of Pius XI, it did not recommend total abstinence as a normal solution, even in cases where use of the rhythm method might not be possible. The main reason seems to be that Paul VI could not ignore what the Council had said about the hazards caused in a marriage when the intimate expression of conjugal love is broken off.² Thus, intentionally or unintentionally, *Humanae vitae* left some questions open for those cases in which the regulation of conception by the observation of the natural rhythm of fertility and infertility is impossible or dangerous.

¹ Cf. *Gaudium et spes*, nos. 50-52.

² The Council's concern was evidently not to jeopardize "the faithful exercise of conjugal love and the full intimacy of their lives"; for "where the intimacy of married life is broken off, it is not rare for its faithfulness to be imperiled and its quality of fruitfulness ruined" (*ibid.*, no. 51).

While Vatican II appealed to all people who have particular competence to "redeem the present time and to distinguish eternal realities from their changing expressions," and to pool their energies together in order "to explain more thoroughly the various conditions favoring a proper regulation of births,"³ *Humanae vitae* appeals to men of science to provide "a sufficiently secure basis for a regulation of birth, founded on the observance of natural rhythms" (no. 23). The result of the latest research on this matter has obliged us to undertake a new reflection on the ethical implications of a number of problems related to the rhythm method.

1) There is an undeniable relationship between the frequency of spontaneous abortion and the overripeness of spermatozoa and especially of the ova. Does this not mean that the rhythm method acts frequently rather as a means of "birth control" and not simply as contraception, whenever it allows fertilization with aging gametes?

2) It seems that the rhythm method as used up to now causes a considerable waste of zygotes, as the I.U.D. is alleged to do and the "morning after" pill does. What kind of obligation exists to avoid, or not to cause, such a waste?

3) What is the status of the zygote before implantation?

4) A relatively high frequency of chromosomal abnormality of fetuses after fertilization by overage gametes poses new problems of conscience, especially but not exclusively to the users of the rhythm method. How to face this prospect?

RHYTHM METHOD AND CLEARLY-PERCEPTIBLE SPONTANEOUS ABORTION

Recent research has demonstrated that fertilization in the case of overripe gametes results in a frequency of abortion that is far above the average. This fact first became evident in the study of fertility of various species of animals.⁴ Some earlier studies concerning human fertility did

³ *Ibid.*, no. 52.

⁴ Cf. M. Yamamoto and T. H. Ingalls, "Delayed Fertilization and Chromosome Anomalies in the Hamster," *Science* 176 (1972) 518-21 (with bibliography referring to many similar studies of other species of animals); J. M. Tesh and T. D. Glover, "Influence of Aging Rabbit Spermatozoa on Fertilization and Prenatal Development," *Journal of Reproduction and Fertility* 12 (1966) 414-15; K. Mikamo, "Intrafollicular Overripeness and Teratologic Development," *Cytogenetics* 7 (1968) 212-33. Cf. A. E. Hellegers, "A Scientist's Analysis," in C. E. Curran, ed., *Contraception: Authority and Dissent* (New York, 1969) pp. 216-36 (and footnotes referring to various studies). Hellegers fully informed the biological section of the Papal Commission on Population Problems, and in the above-mentioned article he draws attention to the hypothesis that a similar phenomenon might occur in human fertilization. It is also known that a copy of the most outstanding study in this field was provided to Pope Paul VI shortly before *Humanae vitae* was issued, namely, R. V. Guerrero, *Time of Insemination in the Menstrual Cycle and Its Effect on the*

not lead to any convincing evidence, since either the method or the limited numbers in the study sample did not allow the drawing of general conclusions.⁵ In the last few years, however, carefully designed and analyzed studies, including large samples from several countries, have confirmed, completed, and in some cases corrected the results of earlier research. The most enlightening report is probably that of Rodrigo Guerrero and Oscar Rojas.⁶ The data and conclusions are based on 1,125 cases from rhythm clinics and 855 cases of pregnancies from fertility clinics. In all these cases the accurate time of ovulation, as measured by a typical rise in temperature,⁷ and the time interval between intercourse and date of ovulation were known. Thus the proportion between normal births and spontaneous abortions in relation to the time interval between intercourse and the time of ovulation could be clearly determined. In all cases in which the spermatozoa were deposited (in the fertility clinics by artificial insemination) in the vagina more than four days before ovulation, the frequency of spontaneous abortion increased in proportion to the time interval before ovulation. It increased enormously if this time interval was more than eight days. Even more decisive, in this respect, is the overripeness of the ovum. In cases in which fertilization occurred through intercourse (or artificial insemination) taking place three or more days after ovulation, the proven frequency of abortion was 24% compared with an average occurrence of 7.8%. The best figures occur in the case of intercourse taking place not more than three days before and not more than one day after ovulation, when it is 5.5%. I have intentionally chosen the expression "proven frequency" because a number of abortions occur during or very soon after implantation and therefore cannot be counted.⁸

One might be tempted to assert that all these new data and insights

Sex Ratio (thesis, Harvard School of Public Health, 1968); it is not known whether the Pope has read it.

⁵ E.g., J. Marshall, "Congenital Defects and the Age of Spermatozoa," *International Journal of Fertility* 13 (1968) 110-20.

⁶ R. V. Guerrero and O. I. Rojas, "Spontaneous Abortion and Aging Human Ova and Spermatozoa," *New England Journal of Medicine* 293, no. 12 (Sept. 18, 1975) 573-75.

⁷ Both in rhythm clinics and in fertility clinics, the rise of the temperature was the point of reference in order to determine the moment of ovulation. This gave much clearer results than earlier studies, which were based on calendar calculation alone. Yet the reference to the temperature rise alone might leave open some interesting questions that should be checked in further studies. Is there a possibility of ovulation happening in a way that an atypical change in temperature might occur? Could there possibly be defective ovulation which might lead to a different time in the rise of temperature? It would be wise to check out all possible hypotheses, so that some more differentiated insights might emerge.

⁸ Cf. especially K. Mikamo, "Anatomic and Chromosomal Abnormalities in Spontaneous Abortion," *American Journal of Obstetrics and Gynecology* 107 (1970) 243-54.

should not bother us, since it is not a matter of direct and wilfully induced abortion. However, such a way of thinking is impossible for a moral theology that considers responsibility for our actions as a key concept whenever the consequences of our actions can be foreseen. Furthermore, such a play on the distinction between "direct" and "indirect" abortion would greatly jeopardize our credibility in our position on abortion and in favor of all human life.⁹ As soon as we know that the choice of certain days for intercourse before or after ovulation entails a greater risk for the life and the health of the embryo, we simply cannot avoid the question of moral responsibility for these foreseeable consequences.¹⁰

It seems to me that the new accumulated knowledge which concerns us here does not, by itself, spell out a verdict against the rhythm method as such, but it does tell us that the method, as usually presented, frequently did not imply simply "contraception" (prevention of conception) but rather "birth control" in the most pejorative sense, namely, prevention of birth by means of spontaneous abortion. In order to qualify as an effective and simple contraceptive (and not as an abortifacient), the conclusion might be: the periodic continence must probably extend through the whole period from menstruation unto four days after ovulation, since during all these days fertilization is still possible, and only because of the loss of zygotes and embryos will birth not occur. But I do not venture to predict what the over-all conclusion of new discussions for the issue of responsible parenthood really might be. I think, however, that the new insights call for a most careful study of the rhythm of fertile days in order to beget children at the most favorable moment.

RHYTHM METHOD AS POSSIBLE CAUSE OF GREAT WASTE OF ZYGOTES

Many studies regarding the fertility of animals, and a number of recent studies on human fertility such as that of Guerrero and Rojas, compel us to assume that the rhythm method, as traditionally practiced, not only causes a relatively high frequency of spontaneous abortions, but even more frequently leads to the loss of fertilized eggs and to unseen abortions that happen very soon after implantation. Blastocysts that

⁹ *Gaudium et spes*, no. 51, states clearly that there is a positive responsibility for the embryo from the moment of conception.

¹⁰ In an editorial published on the occasion of the above-mentioned important study of Guerrero and Rojas, three medical doctors drew this conclusion unambiguously: they asked for more careful testing and concluded: "If it is proved to be true, one can visualize preventing such defects by educating people to juxtapose fertilization as close to the time of ovulation as possible. . . . Passion may need to be tempered by insight into the prime time to conceive" (F. Hecht, M. L. Pernoll, and B. K. McCaw, "Perinatology Begins before Conception," *New England Journal of Medicine* 293, no. 12 (Sept. 18, 1975) 605.

result from overripe gametes frequently do not have the vitality necessary for a successful implantation in the endometrium.¹¹ It seems to me difficult to disregard the thesis which asserts a strict correlation between the overripeness of the gametes and a high frequency of fertilized eggs which fail to implant. It should not be forgotten that successful implantation depends in part on the vitality of the zygote. It is an active principle. In animal research it has been abundantly demonstrated that overripeness of the gametes causes a greater loss of zygotes before and immediately after implantation in comparison to the frequency of abortion at a later date. For human fertility, there is at least a very high probability of the same phenomenon.

Until now most Catholic moralists have given a sharply negative evaluation of the I.U.D. and of the "morning after" pill, not so much because they are effective "contraceptives" but rather because in most cases they are "abortifacient," or, to express it more mildly, they allegedly cause a large waste of zygotes before or during implantation. To me it seems shocking to find that the rhythm method, so strongly and again so recently endorsed by Church authorities, should be classified among the means of "birth control" by way of spontaneous abortion or at least by spontaneous loss of a large number of zygotes which, because of the concrete application of this method, lack the necessary vitality for survival.

Catholic moral theology has generally asserted a qualitative difference between safe methods of contraception in the strict sense (as eliminating the possibility of conception) and, on the other hand, means of birth control which allow fertilization to occur but hinder or prevent implantation.

The unexpected data which reveal the effect of the rhythm method as it has been practiced and recommended should not induce us to rationalize in order to find an excuse for the great waste of zygotes caused by this method. Uncomfortable facts must not seduce us to find, by all means, a way of justifying what until now we considered unacceptable or morally wrong. If a certain way of using the rhythm method is, by its foreseeable effects, "abortifacient," even if it were only the case of "waste" of zygotes before implantation, we must have the courage to change our moral evaluation of this way of application of the rhythm method, without any evasive reasoning about this "waste." Having said

¹¹ Among the various publications which make this conclusion most probable, if not totally compelling, see above all Guerrero, thesis cited n. 4 above; R. V. Guerrero and C. A. Lanctot, "Aging, Fertilizing and Spontaneous Abortion: Effect of the Day of Ovulation and the Time of Insemination," *American Journal of Obstetrics and Gynecology* 106 (1970) 263-67. The problem is very clearly proposed by Mikamo, *art. cit.* (n. 8 above), and in the editorial "Spontaneous Abortion," *Lancet*, no. 7935, Vol. 2 (Sept. 27, 1975) 591-92.

this, I see reasons to ask the question whether there is not a qualitative difference between this "waste of unimplanted zygotes" and abortion, as I asserted a qualitative difference between contraception (in the strict sense) and the foreseeable waste of zygotes (caused by a certain method).

IS THE ZYGOTE AN INDIVIDUAL WITH RIGHTS?

New scientific data compel us to examine once again the question concerning the moral and legal status of zygotes prior to implantation. If the question is "Are they human life?" my response is an unqualified "Yes, it is life, not life from mere animals, but human life; and it is life much more actualized and organized than that of spermatozoa and ova." The question I pose, however, is different: "Are we faced with a human individual who, as such, has all the fundamental rights that belong to every human person?"

A negative response cannot be given simply on the ground that, according to scientific data and estimates, somewhere between 35 and 50% (perhaps even more) of all the fertilized eggs do not reach a successful implantation even without artificial intervention.¹² Nor can we argue that if nature allows itself this kind of waste if left to its own course, men too have a right to allow themselves or to cause directly or indirectly a similar or even greater waste. My own reaction is rather the opposite: as soon as we know the main causes for this waste and are able to restrain it, we have to act on this new knowledge in a lifesaving way. This horizon of responsibility in the service of life cannot be fully evaluated without taking into account the fact that we might become accountable for the death by starvation or by violence of millions upon millions of people unless we allow and provide effective means to prevent conception. The general opinion throughout the world, however, is that we do not have the same kind of responsibility for not yet implanted zygotes as we have to show toward the more developed fetus or toward the persons already born. Are there any scientific data that might give some support to the opinion that the not yet implanted zygote is not yet an individual with all the fundamental rights of the other members of our human species?

The mere empirical scientific approach cannot solve this problem: philosophical and other considerations must be resorted to, but it is equally true and it has to be emphasized that philosophical and/or theological reflection cannot ignore scientific data.¹³ It seems to be that new knowledge coming from strict scientific empirical research can shed light on our question.

¹² Cf. *Lancet* editorial (n. 11 above) p. 592.

¹³ Cf. Hecht *et al.*, *art. cit.*, p. 604.

It seems now to be proven that all zygotes have the potentiality of twinning. During the morula stage each individual cell belonging to the zygote has the multipotentiality to become later a cell forming a part of the brain or of skin or of bone, etc. Before implantation has occurred, no differentiation has yet been realized. Laboratory experiments in lower morulas with forty-six chromosomes show this: "If the early cell mass is teased into two halves and each of these halves is allowed to grow, each half will form a separate subsequent adult form. This is the twinning process, which either happens naturally or can be induced experimentally."¹⁴

No less relevant for our question is the following result of scientific research: Each fertilized egg, as soon as the process of fertilization (lasting about three to four hours) is completed, has its own DNA, its own genetic endowment derived equally from mother and father, and unique except in the case of twinning. But until its completed implantation, all the vital activities are directed by the RNA (ribonucleic acid, the messengers of the DNA) that has been developed by the ovum alone prior to fertilization, that is, before the unique entity is formed. The RNA of it is not yet active. While the new entity exists and functions, it is not yet under its unique genetic direction, that is, under its own messenger that directs growth and development.¹⁵ There are other scientific data indicating the same direction. "Twinning in the human may occur until the fourteenth day, when conjoined twins can still be produced. Less well known is the fact that it is also in these first few days that twins or triplets may be recombined into one single individual."¹⁶

The scientific data are important. However, they do not prove by themselves the thesis that the zygote before implantation does not have the status of a member of our human species. This thesis is rather a conclusion that implies philosophical principles. But at least for Catholics with their specific philosophical tradition, it is not a dangerous jump but a compelling conclusion. Since Boethius, a member of our human species (the human person) has been defined as "rationalis naturae individua substantia" ("an individual substance of a rational nature"). As soon as it becomes evident (through scientific research) that the

¹⁴J. J. Diamond, "Abortion, Animation, and Biological Hominization," *THEOLOGICAL STUDIES* 36 (1975) 312.

¹⁵Diamond, *ibid.*, pp. 310 f. (with abundant scientific documentation). "The RNA in the fertilized egg was synthesized in the oocyte before fertilization and hence is a product of the maternal genotype rather than of the genotype of the embryo. . . . It is only later, at about the time of gastrulation, that the genotype of the embryo is transcribed to form embryonic messenger RNA" (Villev Cl., *Biology* [Philadelphia, 1972] p. 596).

¹⁶A. E. Hellegers, "Fetal Development," *THEOLOGICAL STUDIES* 31 (1970) 4. Cf. R. M. Restak, *Premeditated Man: Bioethics and the Control of Future Human Life* (New York, 1975) p. 57.

morula is not really an *individua substantia* as it was meant by Boethius, it cannot claim the dignity and rights of the human person, though it may claim some other reasons for protection and respect. Our argument, here, is not that the morula is not a *rationalis natura* that belongs to the human species by being gifted with reason or the capacity to use reason, since there is not yet any differentiation concerning the human brain.¹⁷ This kind of reasoning may be worth consideration in its own right, but it does not directly concern our quest. And it seems to me that it is far from being absolutely convincing. On the other hand, the argument that the morula cannot yet be a person or an individual with all the rights of the members of the human species seems to me to be convincing as long as we follow our traditional concept of personhood.

In the second last draft of Vatican II's "Pastoral Constitution on the Church in the Modern World," it was said that unborn life "in the womb of the mother" must in all ways be protected. Some Council fathers realized that this formulation might leave the embryo, or rather the zygote, before implantation in the endometrium without the necessary protection. Therefore they request in their *modi* that the ambiguous expression "in the womb of the mother" be replaced by the word "conception." The outcome is the following text: "From the moment of its conception life must be guarded with the greatest care."¹⁸ However, in the explanation of the responses handed over to the Council fathers, the commission wrote that it is not so easy and unproblematic to determine the accurate moment of conception. Between the fertilization which can occur up to at least ten days after intercourse (and which takes several hours) and implantation and final individualization of the embryo there is a gray area. To disturb or to interrupt the life process during this phase is, in my eyes, not an indifferent matter. But it seems to me that it does not have the same gravity or malice as the abortion of an individualized embryo, that is, of the embryo after successful implantation or specifi-

¹⁷ Based on the proven givenness of the typically human cerebral cortex quite a while before the first trimester of gestation, a philosopher who was earlier ready to justify abortion reaches the conclusion: "At some point between two and twelve weeks after conception, the fetus becomes a human being with all the rights to life belonging to such an entity": Baruch Brody, *Abortion and the Sanctity of Human Life: A Philosophical View* (Cambridge, Mass., 1975) p. 116. Actually, the author thinks that already eight weeks after fertilization there might be enough evidence that with the successful formation of a typically human cerebral cortex and the givenness of brain waves, we are not only faced with an individual but with a human individual that has all the rights of a member of our human species. I think we should acknowledge these rights already to the individual that emerges from the implantation. It belongs to our species and has an irrepeatable individuality. This is the case about fourteen days after fertilization. For further arguments for and against the hypothesis of Brody, see my *Medical Ethics* (rev. ed.; Notre Dame; 1975) pp. 81-85.

¹⁸ *Gaudium et spes*, no. 51.

cally at a time when twinning is no longer possible. Diamond proposes a rethinking of the definition of "conception" and "contraception."¹⁹ He thinks that conception is not the same as fertilization. I would rather suggest considering the possibility of defining the whole process between fertilization and implantation as conception in a broader sense. Following the tradition, I would call every method that prevents fertilization "contraception" in the narrow sense. However, I would refrain from labeling those means which prevent the implantation of the blastocyst "abortifacient" in the strict and severe sense. Each method should be studied again with this distinction in mind.

The "morning after" pill seems to operate sometimes as a simple contraceptive, but frequently, if fertilization has occurred, it will prevent implantation. About the various forms of I.U.D., research and discussions are still going on.²⁰ The practice of the rhythm method is, in many cases, only contraception. However, the continence has to be extended to a much longer period before and after ovulation if the spouses want to be sure that it effectively prevents fertilization. In the traditional way in which the "safe period" was calculated the method frequently does not prevent fertilization, but works as birth regulation by preventing implantation because of the weakness of the morula or by spontaneous abortion. Present knowledge suggests strongly this hypothesis: with the increasing time distance from the moment of ovulation there is a proportionate probability that fertilization will be prevented, but there is also an increasing risk of loss either of the blastocyst or of the embryo in the not infrequent cases in which fertilization is not prevented.

Whatever the terminology, I would insist on the importance of acknowledging a qualitative difference between those means that effectively prevent fertilization (contraception in the strict sense) and those means that interrupt life development between fertilization and implantation. In my view, there is an even more evident qualitative difference between all the means that cause the waste of morulas on the one hand, and those that cause abortion of the embryo after implantation and irrevocable individualization on the other. The mere fact that without human interference a great number of morulas are to die before

¹⁹ Cf. Diamond, *art. cit.*, p. 320.

²⁰ There are scientists who think they can prove that the I.U.D.'s are not abortifacient, not even in the sense of just blocking implantation. It seems that I.U.D.'s, whenever they are *effective*, inhibit "ovum migration along the oviduct, though not the absolute exclusion of an occasional ovarium pregnancy; *failed* intrauterine contraception permits essentially normal fertilization but with an incidence thereafter of ectopic, mainly tubal implantation by reason of disturbed migration along the Fallopian tube" (G. Jonas, "Ectopic Pregnancy despite Intrauterine Contraception: A Clue to the Mode of Action of the I.U.D.s," *British Journal of Medicine*, no. 598, Vol. 3 [1975] 467).

implantation should not be considered reason enough to excuse the human agent who wilfully causes such waste.²¹

RHYTHM AND OTHER METHODS AS POSSIBLE CAUSE OF DEFECTIVE OFFSPRING

As we have seen, well-documented publications assert that fertilization with overripe gametes is frequently the cause of chromosomal anomalies and other damages.²² This information, together with other scientific data, causes concern over the very real possibility that improper timing in the menstrual cycle at which intercourse takes place may lead to the birth of defective children. This assertion was already made a few years ago. The strongest case was made by P. H. Jongbloet. Working with Catholic parents of institutionalized mentally deficient children, he found that the highest frequency of disturbed progeny occurred as a result of accidental, undesired conception by couples using the rhythm whereby the intercourse was limited to the postovulatory period. Among the 59 pregnancies of 35 couples of this type, 8 resulted in *spontaneous abortion and 33 in abnormal progeny (56%)*. A careful review of these cases did not indicate age-related factors or any family histories of hereditary disease. The important fact is the control group: *when these same couples conceived intentionally, without use of rhythm, the ratio of abnormal progeny was reversed: 74% out of 100 pregnancies resulted in healthy offspring, 12% in spontaneous abortions, and 12% in abnormal progeny*. Since even these percentages of abnormal progeny are above the average, unknown genetic or other factors cannot be dismissed. But the hazards of rhythm unwisely used are more than evident.²³ Other studies are not equally conclusive. But it seems to me that children born

²¹ No one can yet say clearly how great the "natural" waste of zygotes before and during implantation is. C. J. Roberts and C. R. Lowe estimate that no more than 22% of all the fertilized eggs are destined for a normal birth (*Lancet*, 1975, Vol. 1, 498), and the editorial quoted above expresses the opinion that this estimate comes close to the truth (*ibid.*, Vol. 2, 592). These scientists think that the greatest losses happen between fertilization and implantation, but also very soon after implantation, so that the early abortions most frequently will not be perceived or proven.

²² Cf. J. T. Lanman, "Delays during Reproduction and Their Effects on the Embryo and the Fetus, I: Aging of Sperm," *New England Journal of Medicine* 278 (1968) 993-99; "II: Aging of Eggs," *ibid.*, pp. 1047-54; R. Guerrero, "Type and Time of Insemination within the Menstrual Cycle and the Human Sex Ratio at Birth," *Studies in Family Planning* 6, no. 10 (Oct. 1975) 367-71; Guerrero advances the hypothesis that the higher frequency of defective children may be related to the sex chromosome, to the sex ratio according to the diverse times of fertilization; anomalies are frequently found in the sex chromosomes. See also Guerrero and Lanctot, *art. cit.* (n. 11 above) pp. 263-67.

²³ Cf. P. H. Jongbloet, *Mental and Physical Handicaps in Connection with Overripeness Ovopathy* (Leiden, 1971); see also *Population Report: Periodic Abstinence* (George Washington Univ. Medical Center, Washington, D.C.) Series 1, no. 1 (June 1974) 1, 12-13.

with chromosomal defects as a result of rhythm are only a small iceberg behind which we can now see the enormous waste of zygotes and early spontaneous abortions, noticed and unnoticed.

After all the studies concerning the relationship between overripeness of the gametes and chromosomal defects of the progeny in animals,²⁴ Kazuya Mikamo has pursued the problem in human fertility by analyzing the karyotype of 318 spontaneous abortions. One of the results of his research is that the cause of these abortions, especially those that occurred very early, is to be found in chromosomal defects.²⁵ Several scientists are seeking an explanation suggesting a relationship between the overripeness of the gametes, the sex ratio, and the frequency of chromosomal anomalies related to the sex chromosome.²⁶

I agree with those scientists who call for more research in this direction, since the matter is of burning interest for a fully responsible parenthood. But it seems to me that those who feel that there is still a jump between the data gathered about the fertility of animals and the conclusion reached about humans may not have sufficiently worked through the whole literature and all the arguments.²⁷

No scientist thinks that we are faced with arbitrary hypotheses or false alarms. On the contrary, because of the relevance of the results already obtained, some scientists feel that there is need of further research and reflection. And I agree with them. Above all, the Catholic Church and its hierarchy, having strongly endorsed the rhythm method as the only one in harmony with the natural law, have to give special attention to the new knowledge and should promote further research.

The whole of human life, particularly the transmission of human life, includes a certain measure of risk that cannot be eliminated. But this is quite different from endorsing calculated (avoidable) risk that entails additional hazards. As soon as we know that certain ways of behavior and rules produce a disproportionate amount of failure and suffering, the values and disvalues must be weighed carefully on a valid scale of values.

Humanae vitae admonishes people: "In relation to the biological processes, responsible parenthood means knowledge of and respect for their function; human intellect discovers in the power of giving life

²⁴ Cf. K. Mikamo, "Intrafollicular Overripeness and Teratologic Development," *Cytogenetics* 7 (1968) 212-33; also T. H. Ingalls, "Maternal Health and Mongolism," *Lancet* 2 (1972) 213-15.

²⁵ Cf. Mikamo, *art. cit.* (n. 8 above).

²⁶ Cf. R. Guerrero, "Association of the Type and Time of Insemination within the Menstrual Cycle with the Human Sex Ratio at Birth," *New England Journal of Medicine* 291, no. 20 (Nov. 14, 1974) 1056-59 (with references).

²⁷ Cf. Hecht *et al.* (n. 10 above) p. 606.

biological laws which are a part of the human person.”²⁸ Pope Paul VI appealed to the scientists to pool their efforts in order to provide “a sufficiently secure basis for a regulation of birth” (no. 24). He surely did not mean just any “regulation of birth” with the calculated hazards of waste of zygotes, risk of additional abortions and defective children. These are evils that have to be excluded as far as possible. I also would like to suggest that he did not mean that scientists have simply to provide the scientific data that would prove the wisdom of any human tradition or pre-established doctrine, as the Supreme Office of the Inquisition requested from Galileo. I hope a new Galileo case will not be set in motion in this matter. *Humanae vitae* quotes Vatican II in this context: “a true contradiction cannot exist between the divine laws pertaining to the transmission of life and those pertaining to the fostering of authentic conjugal love.”²⁹ It is the ethos of the scientist to let reality speak for itself and to change theories whenever they are disproved by facts. Genuine faith, by necessity, includes this ethos and takes advantage of new knowledge in order to grow in discernment, “redeeming the present opportunities and distinguishing eternal realities from their changing expressions.”³⁰

CONCLUSION

It seems to me that scientific research has given overwhelming evidence that the rhythm method in its traditional form is indeed very much and very frequently “open to procreation,” much more than anyone earlier would have thought. But by this new evidence it surely does not qualify as a safe and morally indifferent method of birth control; for its openness to procreation is not openness to safe and healthy human life. It causes a disproportionate waste of zygotes and even a disproportionate frequency of spontaneous abortions.

It would be foolish for a theologian or a small group of theologians to think that he or they can draw all the ethical conclusions from the new

²⁸ *Humanae vitae*, no. 10, referring in the footnote to Thomas Aquinas, *Sum. theol.* 1-2, q. 94, a. 2, where Aquinas teaches that “natural law is what nature teaches all the animals, as the begetting of offspring.” Here he missed working out the humanness of the natural law, especially the humanness of human sexuality and fertility. Last but not least, the “other animals” do not calculate about natural rhythms but simply follow them by instinct; but their rhythms are not the same as those in human fertility.

²⁹ *Humanae vitae*, no. 24, quoting from *Gaudium et spes*, no. 51. This text was introduced into the Council text at the last hour, after an explicit request from the Pope. It has to be read, however, in the context of the whole document, which so explicitly presents the Church as a pilgrim people that does not always have answers to all new problems (cf. e.g., no. 16).

³⁰ *Gaudium et spes*, no. 52.

facts. There must be a broad sharing of experience, of knowledge, and of reflection. We all need the gift of discernment and of wisdom, which will not be given to those who would like to monopolize the gifts of the Spirit. But the data seem to me to be a call to conscience, to new conscientious reflection and dialogue on all levels.

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