

May 1990

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### Recommended Citation

Tonti-Filippini, Nicholas (1990) "'Donum Vitae' and Gamete Intra-Fallopian Tube Transfer," *The Linacre Quarterly*: Vol. 57: No. 2, Article 10.

Available at: <http://epublications.marquette.edu/lnq/vol57/iss2/10>

# **“Donum Vitae” and Gamete Intra-Fallopian Tube Transfer**

**Nicholas Tonti-Filippini**

*Doctor Tonti-Filippini, an Australian physician, has had a number of articles appear previously in Linacre.*

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## **1. An Extensive Range of Procedures**

A major source of difficulty in the moral evaluation of the procedure has been uncertainty about the extent of the range of procedures which have at different times been loosely described as GIFT. Different centers mean different things by it. The procedure which was first described by Ricardo Asch and his colleagues<sup>1</sup> now has many variations and many other possibilities which may yet be developed. The acronym means Gamete Intra-Fallopian Tube Transfer, but any attempt to define the procedure should take into account the following considerations:

- a) There are different methods of obtaining sperm, of obtaining ova, of culturing them and of transferring them. Of particular relevance are the facts that the sperm may be obtained by masturbation or from the cervix, the vagina or a perforated condom<sup>2</sup> following sexual intercourse, or surgically from the male epididymis, and that the transfer of an ovum alone could occur before or after sexual intercourse.
- b) The procedure may involve an ovum or ova only<sup>3</sup>, or it may involve both sperm and ova.<sup>4</sup>
- c) The term “gamete” is used by some to include the early zygote. The latter meaning gained some credibility<sup>5</sup> from the publication of the English translation of “Donum Vitae”, in which the definition of the beginning of a zygote appeared to admit of the possibility that the new cell formed by the fertilization of an ovum did not become a zygote until the stage had been reached just prior to the first cell division when the chromosomes took their places on the mitotic spindle for the first time. The definition in the document would seem to have been based on the fact that the male and female pro-nuclei within the new cell

remain identifiable after fertilization has occurred but prior to the first cell division.<sup>6</sup>

- d) The gametes would have been donated by a man and/or a woman other than the spouses involved — a heterologous use of the procedure.<sup>7</sup>
- e) The procedure may or may not involve the use of ovarian hyperstimulation techniques and the harvesting of a relatively large number of ova.<sup>8</sup>
- f) The procedure may or may not involve the freezing of ova.<sup>9</sup> The latter may be undertaken for excess ova, or it may be done if there are complications from the procedure of hyperstimulating the ovaries and harvesting the ova.<sup>10</sup> Waiting until a subsequent cycle before transferring the ova may have the advantage of the uterus having had time to recover from any damage and thus increasing the chances of embryo survival.
- g) The procedures may or may not have involved experimentation on the ova or the sperm.
- h) Fertilization (depending on how it is defined) may or may not have been commenced and even to have occurred prior to transfer.<sup>11</sup> If the contents of the head of the sperm have been absorbed into the ovum and the two pro-nuclei have subsequently formed but remain distinct, then the procedure is more likely to be called “PROST” (Pro-nuclear surgical transfer). If the pronuclei have already formed a single nucleus then the procedure is more likely to be called “ZIFT” (Zygote Intra-Fallopian Tube Transfer). However, the applicability if not the actual use of these terms depends on the definition of the relevant terms “gamete”, “zygote”, “embryo”, “fertilization”, “pro-nucleus”, etc.
- i) Fertilization may have been assisted by the micro-injection of immotile sperm into the perivitelline space (the space between the inner and outer membrane of the ovum) prior to transfer.<sup>12</sup>
- j) Fertilization may or may not have been assisted by a procedure called “egg-cracking” in which a hole is made (in crude terms) in the zona pellucida in order to permit immotile sperm to attach themselves to the inner membrane.
- k) The gamete(s) may be transferred to the uterus rather than to the Fallopian tube and this may be done trans-vaginally rather than surgically.
- l) The procedure might be attempted by the transfer of two ova after having fused them to form one cell, or of stimulating a single ovum such that it replicates itself and commences development — parthenogenesis. It is not yet clear whether or not parthenogenesis is

possible in humans but it is an area of known experimentation and G.I.F.T. might be attempted in order to create an embryo without any male contribution.

- m) It is possible that the sperm or the ova are from an animal species.
- n) The procedure could be used as a part of a surrogacy arrangement.

From the point of view of moral evaluation, there is wisdom in finding a more precise term for each of these procedures than the term GIFT. In particular there would seem to be a particularly significant distinction to be made between the transfer of a single ovum past a blockage in the Fallopian tube followed by the conjugal act, and the transfer of sperm and ova to the Fallopian tube after having obtained the sperm from a perforated condom following the conjugal act, or from the vagina or cervix. In this paper, I argue that the former is a legitimate assistance to the conjugal act, but the latter is a generative act which is to be evaluated in the same way as the simple case of homologous IVF. Similarly, a technique involving the transfer of sperm past a blockage in the epididymis such that a subsequent conjugal act might result in conception, would seem to be a legitimate assistance.

Briefly, the view expressed in this paper is that it is consistent with the principles contained within "Donum Vitae" for one to recommend that

1. Single ovum transfer past a blockage in the female reproductive system followed by the conjugal act, or the transfer of sperm past a blockage in the male reproductive system followed by a conjugal act of love, is in itself a legitimate means of assisting a couple to conceive a child within the dignity of the conjugal act;
2. Experimental or other procedures carried out on ova alone, such as cryo-preservation or "egg-cracking", or on sperm alone, would be acceptable in themselves, provided that
  - (a) the procedures do not involve disproportionate risks to any subsequent child or to the mother,
  - (b) the procedures themselves do not have the direct consequence of resulting in fertilization,
  - (c) the method of obtaining the gametes did not involve any indignity or sexual acts other than the conjugal act which is open to the transmission of life, and;
  - (d) the gametes are not treated in any way which would cause or imply indignity or a lack of respect for the man or the woman from whom they were obtained.
3. Any human act, other than the conjugal act, which has the direct result of forming a new human life should be held to be illicit, and this would include that which is most commonly meant by the term GIFT in

which sperm and ova are transferred to the body of a woman where fertilization may take place.

4. The respect due to a human being should commence from the moment when the formation of a human zygote is begun. The zygote is the new cell normally formed by the release of the contents of the head of a single sperm through the inner membrane of an ovum. The morally relevant feature is the coming into existence of an individual cell which has the complete and dynamic organization as to be the kind of being which has commenced development toward human adulthood and thus has the capacities which we distinguish as being human, such as the capacity to doubt, reason, love, affirm, wonder, understand, make decisions, etc., as well as the powers to grow and eat and reproduce and see and hear and imagine.
5. Any heterologous use of medical techniques to assist a couple to have a child be held to be illicit.
6. An overriding concern in any attempts to assist a couple to have a child should be the safety of methods used for any embryos formed. Thus the use of ovarian hyperstimulation techniques are unacceptable if they decrease the chances for survival for each embryo formed. Success rates should be judged in terms of the rate of survival of each embryo formed as well as in terms of the number of procedures undertaken on couples. The number of ova transferred should not be such as to increase the risks to any of the embryos subsequently formed.<sup>13</sup>
7. Attempts to achieve parthenogenesis or cross-species fertilization are illicit.
8. In the uncertainty about its status, a developing entity formed accidentally or otherwise by parthenogenetic activation of an ovum is to be given the benefit of the doubt and treated with the respect and the protection which should be given to every human life from the moment of its formation.

## **2. The Major Source of Conflict**

Among those who have accepted the principles expressed in "Donum Vitae", I expect that of the above claims, the third is most likely to occasion conflicting opinions.

The GIFT procedure which leads to such conflict is the following:

The husband's sperm are obtained following the conjugal act, either by the use of a condom (perforated or otherwise) or by removing some of the ejaculate from the vagina or cervix after the act is performed.

Several ova may be obtained surgically via laparoscopy and probably following a period of ovarian hyperstimulation. The use of ovarian stimulants results in the development of a number of follicles at the same time and the

possibility of harvesting a number of ova. The increased number is thought to increase the chances of a procedure resulting in at least one ovum being fertilized and subsequently implanting.

In terms of chances of fertilization and successful pregnancy, the presence of more than one follicle changes the woman's potential fecundity *in vivo* from the low uniovulatory state to the polyovulatory mode as in other, apparently more fertile, mammals.<sup>14</sup>

The ova are matured in culture and the sperm are capacitated (using a type of washing procedure). The sperm and the ova are placed in the same tube separated by culture medium or an "air bubble" on some accounts.<sup>15</sup> Up to two ova are delivered to each Fallopian tube immediately followed by the sperm.

The claimed success rates of the procedure vary widely from team to team. In general, the rates are said to be higher than IVF. The Australian Government statistics reported by the Federal Health Minister for Community Services and Health, Doctor Blewett, are that the average success rate for IVF procedures is 8.8 continuing pregnancies per 100 treatment cycles, and a birth rate of 5.5 births per 100 treatment cycles. Over the last 10 years, the average cost to the Government per live birth was \$Aust. 40,500.<sup>16</sup>

GIFT is usually applied to that group of couples whose infertility is idiopathic. There is a substantial natural pregnancy rate in that group — many are sub-fertile rather than infertile. Thus claimed success rates for GIFT may sometimes include a significant proportion of natural pregnancies and this may account for the large discrepancies in reported success rates.

GIFT has enjoyed a much more sympathetic reception from moralists than IVF. Many have seen it as a morally acceptable alternative, particularly in view of the fact that it does not involve direct manipulation of embryos.

In the variety of interpretations of "Donum Vitae" on the topic, views similar to the following are generally held:

If you can recognize that a true conjugal act is performed and that the technical means really assists that act to achieve its goal and is not a substitute for or replaces the marital act, then the answer is yes!<sup>17</sup>

Some Catholic hospitals are already using the procedure on the understanding that it is an assistance rather than a substitution for the conjugal act, if one can involve the conjugal act as the source of sperm. Some do not consider the latter an issue for the hospital, apparently leaving the method of sperm collection to the spouses. The assumption that GIFT is in accord with "Donum Vitae" gains limited support from the reluctance for a statement to be made on the topic at the press conference which launched "Donum Vitae" and in a widely circulated letter from Monsignor Sgreccia to a Dr. Ricardo Asche.

The argument developed in this paper has several stages. First, the principles expounded in "Donum Vitae" would have it that the child must be the fruit of the conjugal act. Second, the child conceived via the GIFT procedure (described above) results from at least two generative acts — of the technician who brings the sperm and ovum together, etc. and the conjugal act. Third, the conjugal act does not have a direct causal

relationship to the origin of the child; rather the latter is directly causally related to the generative acts of the technician. Finally, the generative act of the technician thus displaces the conjugal act as the source of a new life, and, because it lacks the sacredness and mutual giving of the conjugal act, thus establishes an unsatisfactory relationship of dominion between the technician and the child in his or her origin. In his origin, the GIFT child is more an object of a making than respected and recognized as equal in personal dignity to the technician who gave him or her life.

### 3. Fruit of the Conjugal Act

In an article dealing with artificial insemination, Msgr. Carlo Caffarra recently expressed principles which would lead one to draw conclusions about GIFT which would favor it. He asserts

What is ethically essential, then, is that between two spouses there be a true and proper conjugal act. This has already been demonstrated in the first part of this presentation. By 'a true and proper conjugal act' should be understood 'the activation of that capacity for sexual activity without which capacity, according to the theological and canonical doctrine of the Church, one would be up against the *impediment of impotency*'.

From the ethical point of view, once this act has been posited, nothing else is required of the two spouses. Any subsequent recourse they may have to some artificial intervention amounts, therefore, to giving assistance to the procreative act which, insofar as it is a human act, has already in itself been completed.<sup>18</sup>

Contrary to the view that Monsignor Caffarra puts, the mere positing of the "true and proper conjugal act" is not sufficient. The principle contained in "Donum Vitae" is that the origin of the child must be as the fruit of the conjugal act. That is to say, the conjugal act must have a direct causal relationship to the origin of the new life.

Only respect for the link between the meanings of the conjugal act and respect for the unity of the human being make possible procreation in conformity with the dignity of the person. In his unique and irrepeatable origin, the child must be respected and recognized as equal in personal dignity to those who gave him life. The human person must be accepted in his parents' act of union and love; the generation of a child must therefore be the fruit of that mutual giving which is realized in the conjugal act wherein the spouses cooperate as servants and not as masters in the work of the Creator who is love. ("Donum Vitae" II B Question 4, para 7)

That the conjugal act is posited is not sufficient, if the child does not originate from the conjugal act. Consider the situation in which sperm has been obtained from the vagina subsequent to a "true and proper conjugal act", but is frozen, awaiting its use in a GIFT procedure. Ova are obtained and these too are frozen and stored in order to await the recovery of the uterus from the effects of the superovulants or some other illness. Eventually, say five months later, the ova and sperm are thawed and transferred separately to the Fallopian tubes where a new life originates.<sup>19</sup>

According to Monsignor Caffarra's principles, the ethically essential aspects would have been satisfied.

However, it is clear that the conjugal act is not the only act which has a causal relationship to the origin of the child. By placing both sperm and ova in the Fallopian tube in order to bring about fertilization, the technician performs a generative act which is a direct cause of the origin of a child if the procedure is successful.

In fact, it would seem that the origin of the child is only indirectly connected to the conjugal act. The generative act from which the child directly originated would have been the act of the technician. The conjugal act itself would have been causally and temporarily remote from the generative act of the technician. In the causal process described, there would have been a whole series of human acts and choices between the conjugal act and the origin of the child.

The child would later look back to an origin which is a direct consequence of the interventions by the technician. The conjugal act would be related to the generative act of the technician only as the means by which he or she obtained some of the material with which to perform his or her generative act.

The relationship which the technician would have to the child would thus be the relationship of a person who has brought about the creation or making of the other. The evaluation of this case would seem to be relevantly similar to the evaluation of the simple case of homologous in vitro fertilization. It would be a denial of the child's right to an origin in the sacredness and dignity of the conjugal act.

#### **4. Two Generative Acts?**

A relevant difference between the generative act in the case just described and the simple case of GIFT as I have described it is the time delay afforded by cryopreservation of the sperm and ova. The long separation in time makes the conjugal act appear causally remove from the generative act of the technician.

In the simple case of GIFT, the act of the technician and the conjugal act both contribute to the origin of the child. Thus, in fact, there are, in the simple case of GIFT, two human acts, that by the couple and that by the technician and each is causally related to the origin of the child so that one might be led to conclude that the child is the fruit both of a conjugal act and of the generative act of the technician.

A relevant question to ask is whether or not in the origin of the child, the generative act of the technician would have displaced rather than assisted the conjugal act. In addressing artificial insemination, the "Instruction" expresses the following principle.

Homologous artificial insemination within marriage cannot be admitted except for those cases in which the technical means is not a substitute for the conjugal act but serves to facilitate and to help so that the act attains its natural purpose. ("Donum Vitae" II, B, Question 6, para 1)

In the simple case of GIFT, the conjugal act is causally involved as the



means of procuring sperm for the subsequent act of the technician. Thus it is not entirely displaced. It is true, also, that the technician assists in such a way that fertilization can occur. However, it is questionable whether or not one can rightly say that the technician's generative act is an assistance to the *conjugal act*. The generative act of the technician clearly happens after the conjugal act has been completed. The harvesting of sperm (whether from a condom or the woman's body) after the conjugal act and the various other processes are clearly distinct from the conjugal act. They are rather like an unlawful intervention (in a game of golf) by a caddy in order to cause a ball to roll toward the hole, but after the ball had already stopped rolling. The intervention is not an assistance to the drive of the player, but a project which is distinct from that of the player who struck the ball. The player's striking of the ball is a legitimate act in the rules of the game, but the intervention by the caddy is something quite different even though it has the same goal.<sup>20</sup>

The causal relationship between the generative act of the technician and the origin of the child is clearly a direct relationship. However, the causal relationship between the conjugal act and the origin of the child would seem to be indirect. The conjugal act causes sperm to be made available. The act of the technician is to take the sperm, thus made available, and to place them and the ova in the Fallopian tube in order that fertilization may occur as a direct consequence of that act.

Thus the generative act of the technician would seem to *displace* the conjugal act as the direct cause of the origin of the child.

As a matter of contrast, *assistance* to the conjugal act could involve such acts as moving ova past a blockage in the Fallopian tube prior to the conjugal act in order that the latter might have a direct causal relationship to the origin of the child. Such a movement of ova within the woman's body or even a similar act in the man's body of moving sperm past a blockage in the epididymis, for instance, followed by the conjugal act as the direct cause of fertilization, would seem to be an assistance to the conjugal act. Similarly, penile splints, hormonal treatment and surgical repair of reproductive organs, etc., would all seem to be means of assisting the conjugal act.

## 5. An Evaluation of the Generative Act of the Technician

In the simple case of GIFT, the technician performs a generative act or series of acts directly resulting in the origin of a child. In his or her role in harvesting the ova, processing the sperm and ova and then transferring them to the Fallopian tubes, what relationship will he or she then have formed to any child which originates as a direct result of his activities? In that act of origination, is the new life essentially treated as the technician's equal in dignity and respect, or does the procedure tend toward the child being the object of a making?"

In reality, the origin of a human person is the result of an act of giving. The one conceived must be the fruit of his parents' love. He cannot be desired or conceived as the product of an intervention of medical or biological techniques; that would be equivalent to reducing him to an object of scientific technology. No one may subject the coming of a child into the world to conditions of technical efficiency which are to be evaluated according to standards of control of dominion. ("Donum Vitae," II, B, Questions 4, para 8)

The technician who brings sperm and ovum together in the petri dish is performing a relevantly similar activity to the technician who brings sperm and ova together in the Fallopian tube. Both acts are a production of a human life in a way which is not consistent with respect for the dignity of the human person in his or her origin. That one occurs in the body and the other outside of the body is not relevant. The action by the technician has the same meaning, the same indignity, the same inequality in its essential lack of respect and recognition of the sacredness of the coming into existence of a new life. Thus the moral assessment of the simple case of GIFT would seem to fall into the same moral category as that of the simple case of IVF:

In homologous IVF and ET, therefore, even if it is considered in the context of 'de facto' existing sexual relations, the generation of the human person is objectively deprived of its proper perfection: namely, that of being the result and fruit of a conjugal act in which the spouses can become "co-operators with God for giving life to a new person". ("Donum Vitae" II, B, Question 5, Para. 5)

In order to preserve the inseparable connection between the unitive and procreative meanings, aspects or dimensions of the conjugal act, the direct causal connection between the conjugal act and the origin of a human life must be uninterrupted by any other human act. It is only thus that the right to a dignified origin in the sacredness of the conjugal act can be preserved. The conjugal act has the character that as a human act it alone has the quality of being able to be a fitting circumstance for sharing in the divine work of creation. Because it itself is an act of sacred love, fully expressive of the complementarity of the union of the spouses, its meaning is such as to be capable of being extended to include a new life as an embodiment of the love expressed and a third party to the love, equal in dignity and respect.

Procreation in the context of a true and proper act of conjugal love is not the making of a child, but is a result of a relationship on which God bestows the gift of a life. New life is sacred and the conjugal act is the appropriately sacred event for the origin of a new life. Parents can look back to the origin of the child, not in the interventions of a technician, but in the celebration of their sacred love for each other.

## **6. Assisting the Conjugal Act**

In general, those forms of assistance within the context of a marriage which do not displace the conjugal act and do not interrupt the direct

causal process between the conjugal act and the origin of a new life would seem to be acceptable.

As a rule of thumb, so to speak, medical assistance rendered to a married couple in order to overcome their infertility is likely to be acceptable if once the assistance has been rendered, the clinician can then remove himself or herself from the scene and allow the couples to attempt to conceive within the expression of love in the conjugal act, and without further intrusion.

In this light, procedures such as tubal ovum transfer (TOT) would seem to be consistent with the principles. (N.B. One has to be careful to describe exactly what one means by "TOT"; some use the acronym to describe a procedure in which not only are ova transferred, but also sperm. I use it here to mean no more than the harvesting and transfer of an ovum to the lower end of the Fallopian tube so that the couple may subsequently choose to express their love through the conjugal act and with the possibility of that act resulting in the origin of a new life.)

The statement in "Donum Vitae" concerning homologous artificial insemination is puzzling. It is difficult to understand what the authors had in mind. However it is possible that they foresaw the following instances of artificial insemination.

(a) The manual movement of a premature ejaculation into the vagina in the context of the conjugal act. The original intent could have been to complete the conjugal act but when this process became frustrated it might be feasible that as much of its meaning could be salvaged as possible by either partner moving the semen in this way but still within the temporal and spatial context of their mutual participation in the celebration of the conjugal act.

(b) A man who had become sterile from some form of therapy, such as for a carcinoma, might have had the foresight to freeze his own sperm (having been licitly obtained), prior to the therapy. The sperm might then be used by the spouses in the context of the conjugal act, knowing that the ejaculate was sterile, but adding to it the previously stored sample.

To the extent that these procedures can be carried out by the couples without indignity and as part of the expression of their conjugal love, it seems correct to say that any subsequent child originated in the conjugal act, in the celebration of the parents' mutual, complete and complementary gift of each to the other.

The essential features of the conjugal act would seem to include the reality of being a celebration of the spouses' love for each other, unifying and open to the possibility of the gift of life. As such it is neither essentially only physical, nor only spiritual, emotional or cognitive, but essentially all these aspects are present in the giving of one to the other.

Legitimate assistance to the conjugal act must preserve all these features. It must not displace any part nor lead to the act being regarded as inhuman either through an exclusively physicalist understanding or the "angelic" understanding seemingly expressed by those who permit the exclusion or separation of physical aspects as long as it occurs within

the so-called "sphere of love". We are embodied and it is only as bodies that we can express the emotional, cognitive and spiritual dimensions of conjugal love.

### References

1. Asch, R. H., Ellsworth, L. R., Balmaceda, J. P., Wong, P. C., "Pregnancy after translaparoscopic gamete intrafallopian tube transfer (GIFT)", *Lancet*, 2, p. 1034, 1984.
2. The procedure undertaken by the Mercy Maternity Hospital, Melbourne, as I understood it to have been explained to me by Dr. Peter Maher, involves ovarian hyperstimulation and monitoring of ovulation, the harvesting of several ova using the procedure known as laparoscopy, the maturing of the ova in a culture medium, the harvesting of sperm by the couple using a perforated condom following sexual intercourse, the capacitation of the sperm in the laboratory and then the transfer of sperm and ova to the Fallopian tubes by a method in which the sperm and the ova are separated by a quantity of culture medium.
3. This procedure is described in "Low Tubal Ovum Transfer: An Alternative to In Vitro Fertilization," *Fertility and Sterility*, October, 1980, pp. 375-378.
4. Described as GIFT in "Preliminary experiences with Gamete intrafallopian tube transfer" by Ricardo Asch, et al, *Fertility and Sterility*, Vol 45, No. 3, March 1986, pp. 366-423.
5. In the debate on a Bill which would legalize pre-syngamous embryo experimentation, Dr. G. M. Vaughan, a member of the Government in the Victorian Parliament and a Catholic, stated, "The theological advice I have sought has not provided me with a clear direction. I find the theological advice quite confusing. I refer to the recent Vatican document relating to the subject matter of the Bill. It comes from the Congregation for the Doctrine of the Faith. It is dated 1987 and headed *Instruction on Respect for Human Life in its Origins and on the Dignity of Procreation* and replies to certain questions of the day.  
"In the first chapter of the document entitled "Respect for Human Embryos", there is advice given which is relevant to the debate, but whether the advice would lead one to support the Bill or oppose it I am not sure. I remain confused. It is not an easy debate to enter into. The matter is not an easy matter on which to legislate."  
*Parliamentary Debates, Legislative Assembly*, 13 November, 1987, p. 2551, Victorian Government Printer, Melbourne.
6. The statement "The zygote is the cell produced when the nuclei of the two gametes have fused." (I, Question 1, footnote to para. 3) in the English translation of "Donum Vitae" is inaccurate, misleading and confusing when one considers what actually happens. There has been a clarification from Cardinal Ratzinger in a letter to the Australian Catholic Bishops dated November 9, 1987. The latter indicates that the English translation did not accurately reflect the original Italian, or the authentic Latin version.
7. "Donum Vitae", Section II, A.
8. There are reports that some teams are managing to obtain up to 20 or more ova in a cycle.
9. Ova freezing has been undertaken successfully by a team directed by Dr. Christopher Chen, then at Adelaide but subsequently having moved to the University of Singapore.
10. There are many possible complications and several common adverse effects from the use of ovarian stimulants. For details of these see T. V. Daly and Nicholas Tonti-Filippini, *Experimenting with the Origins of Human Lives*, St. Vincent's Bioethics Centre, Melbourne (1986), p. 32ff.
11. As the procedure was described by Dr. Ian Johnston of the Reproductive Unit, The Royal Women's Hospital, Melbourne, the sperm and ova are put into the same catheter at the same time, but separated by an air bubble. From the description given, it seemed

that the air bubble served no good purpose other than to satisfy some moral critics, and so is probably not considered necessary by those who are otherwise practicing IVF. *Bioethics Update*, 1987 Annual Conference on Bioethics, conducted by St. Vincent's Bioethics Centre, Melbourne.

12. It was a project involving this procedure which initiated an amendment to the Victorian legislation so that experiments on pre-synagmous human embryos could be undertaken. The procedure has now been undertaken in humans and it has been reported that a pregnancy has been attempted ("Times on Sunday", 13/4/88).

13. These points are discussed in detail in T. V. Daly and N. Tonti-Filippini, *Experimenting with the Origins of Human Lives*, St. Vincent's Bioethics Centre: Melbourne (1986), pp. 31-44.

14. John C. McBain and Alan Trounson, "Patient Management-Treatment Cycle" in *Clinical In Vitro Fertilization*, edited by Carl Wood and Alan Trounson, Springer Verlag, Berlin (1984), pp. 53-4.

15. Johnston, Ian, "Gamete Intra-fallopian Tube Transfer", 1987 Annual International Conference on Bioethics, St. Vincent's Bioethics Centre.

16. "Cash Battle for the Baby-Makers", *The Australian*, 13/5/88.

17. "Marriage and Assisted Procreation" *Ethics and Medics*, Pope John Centre, Massachusetts, October, 1987, p. 4.

18. Caffarra, Msgr. Carlo, "The Moral Problem of Artificial Insemination" *Linacre Quarterly*, Vol. 55, No. 1, February, 1988, p. 42.

19. I owe this example to Rev. Fr. Ray Campbell, O.F.M. Cap., which he gave during a conversation at Sydney Airport, 13/5/88.

20. I owe this analogy to Prof. Josef Seifert at a dinner with several others in Melbourne in May, 1987.