MORAL IMPLICATIONS OF ATTITUDES TOWARD REPRODUCTION RESEARCH

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Arts in Education Educational Psychology Counseling and Guidance

by

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June, 1980
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DEDICATION

To JD, my man for all seasons. Without your support, patience, and love, it couldn't have been done.

To Pam, my little girl all grown. Your interest, understanding, and caring help make a real case for motherhood.

To Joan, my fellow researcher who shared all the agonies and ecstasies. You suggested I try for less than perfection so I could enjoy life more. You were right - with love and thanks.
ACKNOWLEDGMENTS

With grateful appreciation to Joan Donner, my research partner, whose contribution was invaluable and whose energy was limitless.

My heartfelt thanks to the following individuals who gave so willingly of their time and knowledge so that this thesis could become a reality:

Stan Charnofsky, Committee Chairperson, who was supporting and encouraging at all times.

Joe McNair, Advisor, whose enthusiasm about the research never changed.

Linda Fidell, Advisor and resident statistical genius, who was not only interested, but cared enough to accept nothing but the best effort.

Katie Ruhberg, my very special friend and typist extraordinaire, who asked to help and did so very much more.
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ABSTRACT

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This study was undertaken to ascertain attitudes toward alternative methods of human conception. A telephone questionnaire was completed by one hundred (100) residents of the San Fernando Valley, California. There were sixty-three (63) women and thirty-seven (37) men from thirteen (13) to eighty-two (82) years old, whose telephone numbers were chosen randomly. Prefixes were drawn for each area from the Los Angeles Northwestern Telephone Directory, and a random numbers table was used for the last four digits of each telephone number. Population distribution determined the number of calls made to each area.

Demographic data included sex, age, and marital status. Respondents were asked the number and genetic relationship of their children, including their desire for future children. Religious preference and frequency of atten-
dance at religious services was solicited. Occupations and income levels were gathered. All one hundred respondents reported their sexual preference to be heterosexual.

Additional questions pertained to respondents' attitudes about novel reproductive techniques. Included among them were those specifically concerning artificial insemination donor and in vitro fertilization, as well as general questions about the area of reproductive technology and its consequences. Issues emanating from the scientific exploration of reproductive techniques included informed consent, regulation or lack of it, legal status of those involved and choice of recipients.

Men were significantly more accepting than women of the use of AID by female homosexuals, $\chi^2 (2) = 9.9 \ p<0.05$, but women accepted the use of AID by others more than men, $\chi^2 (2) = 6.1 \ p<0.05$. Singles and those without children were significantly more accepting of experimentation on human ova, singles - $\chi^2 (2) = 6.912 \ p<0.05$; without children - $\chi^2 (2) = 6.829 \ p<0.05$. Religious groups differed significantly from each other regarding advising children of the nature of their conception, $\chi^2 (6) = 17.227 \ p<0.05$. Singles were more accepting of single women using AID and IVF, $\chi^2 (2) = 12.636 \ p<0.05$.

Significant correlations were found between the following pairs of questions: (1) the use of AID and IVF donor, $(r = .6844)$; (2) the use of AID and IVF for single women and female homosexuals, $(r = .4728)$; (3) experimentation
and destruction of fertilized ova in the laboratory, 
\( r = .229 \) and (4) acceptibility of abortion on demand 
and abortion of abnormal fetuses, \( r = .489 \).
CHAPTER I
INTRODUCTION

Life on earth has existed for over three billion years, and during that period of time over ninety eight million different species have arrived and then vanished. Homo Sapiens, the newest member of this evolutionary chain has existed for only some three million years. During their brief stay on this planet, men and women have accumulated knowledge that has allowed them to regulate and control their external world. The discovery of fire, invention of the wheel, and the formulation of written language are but a few of the dramatic inventions that have helped the human species tailor the environment to fit specific needs.

The discovery of DNA almost thirty years ago gave researchers the opportunity to unlock the secrets of life, making possible new scientific discoveries and technologies that might alter the evolutionary wisdom of billions of years. A biological revolution is taking place within scientific laboratories around the world, and the basic premise of that revolution is the manufacturing of human life. While concentrated efforts are being made to lessen population growth, time and energy are also being expended to reduce human infertility. Many thousands of children owe their lives to advanced methods of fertility promotion. As
these novel reproductive technologies become more refined, embarrassed parents will have a wide variety of answers available to them when asked, "Where do babies come from?" Excluding the standard and most familiar reproductive procedure, these potential technologies include the following:

1) artificial insemination of a woman using her mate's sperm; 2) artificial insemination of a woman using the sperm of a donor; 3) in vivo fertilization, which allows fertilization by artificial insemination of a donor's egg with subsequent transplantation to a recipient for completion of gestation; 4) fertilization of an egg in a cultured medium (in vitro), which produces an embryo that is placed in the uterus for completion of gestation; 5) extra-corporeal gestation (test tube baby); 6) parthogenesis (virgin birth), the development of an unfertilized egg; 7) nuclear transplantation or cloning, in which a cell is made to reproduce an exact genetic duplicate of the donor of the nucleus and 8) embryo fusion in which two individual embryos are joined to form a human with four biological parents instead of the traditional two.

While all of these new methods of human conception expose areas of concern, this investigation has paid particular attention to artificial insemination and in vitro fertilization.
Statement of the Problem

The question of whether or not to aid infertile couples to achieve parenthood by artificial methods is a very complex. The desires and rights of each involved and potentially involved person clash headlong into one another. When a fertile couple decides to have children, only three people are involved: mother, father and child. When donor egg and sperm are used, there are five participants: mother, father, child, doctor and donor.

The use of some of the newer methods of conception, with or without donor, introduces legal, moral and ethical issues which need to be assessed. The problem is to evaluate the public's attitudes towards these new methods of human conception in order that a firm social standing can be made.

Purpose and Rationale of the Study

The purpose of this study was to examine, by survey questionnaire, attitudes toward the ethical-moral and legal issues attendant on these burgeoning reproductive technologies. As was the case with both prohibition and abortion, when the public finds a political decision unbearable, it will simply be ignored. The biological revolution that is facing our society will either be accepted or rejected on the basis of public response, and attitudinal surveys are necessary to facilitate an informed political-social decision. To this end, a series of percentages was computed.
representing the degree of approval or disapproval of the various techniques and issues involved with them.

**Definition of Terminology**

Reproductive technologies referred to in this study are defined as follows:

1) Artificial insemination is the mechanical introduction of a donor's sperm into the female uterus in order to facilitate union with an ova.

2) In vitro fertilization is the fertilization of an ova by sperm in a cultured medium which produces a blastocyst that is later placed in the uterus for completion of gestation. There are several possibilities for combining egg and sperm with in vitro fertilization. Presently, this technique is being done only with a woman's egg and her husband's sperm. However, possibilities for the future include the use of either donor egg or donor sperm or both.
CHAPTER II
REVIEW OF THE LITERATURE

To aid couples who are infertile requires different techniques to satisfy the various biological problems that arise. Gilbert (1976) has presented us with a clear, concise description of artificial insemination: the introduction of sperm into the uterus by a means other than intercourse. Artificial insemination is considered homologous (artificial insemination husband - AIH) when the husband's sperm is used and heterologous (artificial insemination donor - AID) when donor sperm is used. The predominant indication for the use of AID is male sterility, although other reasons could include RH incompatibility, severe hereditary defects in the male, or sexual dysfunction. Sperm is obtained from the husband or donor by means of masturbation and is collected in a clean container not more than two hours before the scheduled insemination. The semen is then introduced into the woman's upper vagina and cervix. Various methods are used to accomplish maximum exposure, such as the insertion of a pack or keeping the recipient supine for a period of time (Goldstein, 1975).

The female analogue to artificial insemination is artificial fertilization, usually in vitro or outside the body, in a petri dish. Some common ways in which a woman's
fertility can be hindered are hormonal imbalance, anovulation (absence of mature ova), infrequent ovulation, lack of hospitable environment for the sperm or sexual dysfunction. In vitro fertilization (IVF) can be done with wife or donor ova. The major indication for the use of IVF is damage to the fallopian tubes. These tubes allow the egg to leave the ovaries, provide a site for fertilization to occur, and furnish a pathway for the fertilized ova to enter the uterus. There the ova implants and remains to term, barring disruption of the pregnancy. In vitro fertilization would be indicated for those women who, because of disease or surgery, have nonfunctioning fallopian tubes. Artificial fertilization circumvents the fallopian tubes.

According to Steptoe and Edwards (1978), in vitro fertilization is a very straightforward technique. Ova are recovered from a woman through a small incision into the abdomen. Sperm are obtained from the husband and put into a salt solution that prepares them to fertilize the egg. The sperm and eggs are put into a petri dish which contains inert oil. A few hours later fertilization occurs, and twelve hours later the conceptus is transferred to a different solution which supports development. Somewhere between two and four days later, the conceptus, now a sixteen cell blastocyst, is inserted into the woman's uterus where it is hoped that implantation will occur and will be sustained.
Embryo transfer (ET) is a similar procedure in which the fertilized ova is implanted in a woman other than the donor. Embryo transfer situations create the same legal issues as artificial insemination donor, where there is a question of parenthood. The fundamental question surrounding this technique seems to be whether the mother of the child is the woman who donates the egg or the woman who gestates it.

Ramsey (1972) argued that in vitro fertilization is not a medical procedure because it does not correct a medical problem, but circumvents it. According to Diamond (1979) the condition that requires correction is infertility, which in many instances, is not a physical condition capable of being corrected. The women whose fallopian tubes can be surgically repaired will be "cured" of their infertility and, therefore, no ethical or legal questions are posed. In the cases using IVF, however, the fundamental infertility remains. The only permanent change to take place is the couple's childlessness. The question remains whether doctors have the right to interfere with the natural process of conception when they are not treating a disease. Although disease may have been the cause of the infertility problem, presumably that disease has already been successfully treated. A case in point would be damage to the fallopian tubes as a result of venereal disease. To ethicists such as Ramsey (1978), alleviating the possible suffering which
accompanies infertility is not sufficient to permit experimentation in this area. Ramsey (1972) states that IVF is not a medical procedure because it concentrates on a product, not on a medical condition which can be cured. It should, therefore, be considered biological technology, not medicine. In discussing the medical ethics surrounding IVF, Ramsey offers the opinion that such a procedure constitutes unethical experimentation on possible future human beings. This article calls attention to the fact that the negative verdict given IVF invokes only the standards of judgment of the principles of medical ethics and does not appeal either to religious or any other criteria. Ramsey's argument excludes the major points offered by other writers regarding the need for additional animal work, and the immorality of terminating the lives of the blastocysts that are sacrificed in the name of research. The crucial point made is that there should be concern for any child produced by these experiments. The proper goal of medicine is not to enable women to become fertile by any means which may bring hazards to the child to be conceived. The possible danger to the embryo during transfer, as well as dangers from the manipulation of the embryo is scrutinized. It is suggested that the unborn child has not volunteered to help either the mother or the scientist, and the physician is, in fact, giving proxy consent for this unborn child to relieve the mother's infertility.
Conversely, according to Toulmin (1978), any procedure which accomplishes a therapeutic result is ethical provided that informed consent is obtained from the parties involved. This leads directly into the quandry as to who must supply the informed consent. Since it is the parents who will benefit from the procedure, it is difficult for them to be objective about the risks involved. The main burden of untoward results will fall on any offspring produced. Since it is impossible to get consent from the offspring, we are back to relying on the parents.

Diamond (1979) views IVF as experimental research and considers the child, not its parents, the subject of the experiment. If the experiment is successful, the parents are the principal beneficiaries; if it fails, the unborn child assumes the risks. Omitted from this equation is the fact that the child receives the benefit of life, hopefully normal, should the experiment be successful. The parents, on the other hand, would be heavily burdened by having a deformed or deficient child. Therefore, to say that only the child bears the risks involved might be incorrect.

The issue of protecting vulnerable subjects from harm is central to allowing in vitro fertilization to continue, according to Lappe (1978). Those who defend their right to continuing experimenting base their arguments on the fact that the blastocyst is not a human being but is no more than a potential human being, as in the case of aborted fetuses.
Many ethicists and scientists consider conception to be the moment at which a human life begins. If we generally allow abortion, then how can we use the death and abortion of fetuses created by in vitro fertilization as an argument against further fetal research? Since almost all abnormal blastocysts will fail to attach to the uterine wall or will otherwise spontaneously abort, there is not much chance of a significant increase in live-birth abnormalities. Is there any difference between an abortion as a result of an unwanted pregnancy and an abortion after an attempt to become pregnant?

Those in favor of pursuing in vitro procedures contend that if it were not for the procedure, there would be no person to be wronged. The question arises as to which is worse, the violation of the right to consent by the child or the procedure, without which there would be no child at all. According to Robertson (1978), "A non-normal child has no cause of action against persons causing the abnormality if the alternative to their action is no life at all. On this view, human existence, however imperfect, is in most cases to the individual involved, preferable to non-existence." Robertson compared the risks involved with in vitro fertilization to those of carriers of genetic diseases who have a child knowing the risks involved and who choose to have the child without benefit of amniocentesis and possible abortion.
Besides the inherent misfortune, there is no penalty in these cases for having a deformed child. It would follow that if the state banned in vitro fertilization, it would have to require sterilization, amniocentesis and abortion, where indicated, to protect the offspring of risky "natural" pregnancies. Risk-taking on behalf of someone else would be justified when (a) the risks are unavoidable or (b) when the risks are minimal as compared to the potential benefits (Elfstrom, 1979). Elfstrom argues that "The child has an uncertain and problematic... chance at existence as a human being."

The biological aspects of embryo transfer were discussed by Edwards and Steptoe (1972) at the CIBA Foundation Symposium. They were insistent that no evidence obtained from transfers has pointed to induced anomalies attributable to the culture and transfer of embryos. Preimplantation embryos in the process of cleaving show no tendency toward abnormal development as a result of manipulation, and can even tolerate wide changes in their chromosomal constitution and still cleave normally. In discussing risks that are taken for the unborn, Lappe (1972) supports the position that there is no evidence to date showing that IVF causes any discernible teratogenic, or monster-producing, stimulation. It is pointed out that no one can predict when IVF in human beings will be a risk free procedure; on the other hand, no one has insisted that natural reproduction be
completely risk free for the fetus before it is undertaken. There is no moral problem, according to Ramsey (1979), concerning the risks of conception but rather those risks imposed by the uncertain procedure of IVF.

A distinction exists between research/experimentation and medical practice. Scientific research is regulated by the federal government, and should in vitro procedures be deemed experimental, their continuation would be thoroughly monitored and controlled. The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research examines the feasibility of certain human experiments. Although all human experiments are reviewed by the National Institute of Health, a new body, called the Ethics Advisory Board, was set up in the Department of Health, Education and Welfare specifically to recommend on the funding of such projects.

Kolata (1978) noted that the United States has little experience with IVF and its attendant risks because research involving humans and this method of conception was halted in 1975 due to a moratorium on federal funds. In 1978, however, the Ethics Advisory Board began a review of an IVF experimentation proposal, and legal and ethical minds have once again attempted to delineate the rights and responsibilities of the participants in the IVF process.

Healey (1975) suggests that the use of AID and/or IVF proposes a variety of scenarios relative to asexual repro-
duction, genetic manipulation and genetic engineering which will alter how the family evolves within our society. Additional issues arise, such as legitimacy, divorce, child support and adultery. Neither the social nor the legal implications have been adequately addressed by our society or by the courts.

The issue of legitimacy when donor sperm or eggs are used must be evaluated and established by law. However, the decision is not simple. Lawmakers are influenced by the desires of the prospective parents, by religious groups that have an interest in the outcome, by physicians who are even now performing acts which may be ultimately deemed illegal, by donors who may be held responsible for their participation at some future time, and by the children whose legitimacy and state of mind may someday be in jeopardy.

The first legal issue is the legitimacy of the offspring. Who is the father of the child - the donor, or the husband of the woman who bears the child and consents to the Artificial Insemination Donor (AID) procedure? At the present time, the husband of the mother would seem the logical, albeit arbitrary choice. By putting the husband's name on the birth certificate, doctors are creating a situation in which the mother's husband is the only choice. Since the couple and the physician alone need know of the AID, no other parties would be involved. Even the donor
would not know to whom he had donated. The fact that the doctor has falsified the birth certificate simplifies the matter for the child and the parents but complicates the doctor's position since there is a danger of perjury charges (Pennington and Naik, 1977). In some quarters where the physician wishes to circumvent the threat of perjury, AID patients may be counselled to seek obstetric care from another physician who will, in actuality, be ignorant of the fact that the woman's husband is not the genetic father. In this way perjury has not been committed by either doctor (Goldenberg and White, 1977).

Rosenberg (1971) raised several questions regarding the unresolved status of children conceived by AID. For example, do they have the same legal rights as the biological children of both parents? What are their rights of inheritance, support and custody? This investigation showed there have been inconsistent and infrequent judicial decisions on these issues. In New York the court upheld visitation rights of the father of a child conceived by AID. A court in Oklahoma, at a later date, denied the father visitation rights on the basis that he was not the biological father. Rosenberg states that as long as consent to AID has been given by the male parent, or may be implied from subsequent conduct of the male parent towards the child, the courts are not justified in denying legitimacy and its rights to children born of this technique.
Another legally related issue is the possibility of consanguinity as a result of incestuous marriages between two products of the same donor. This issue may be a spurious one due to the relatively small number of such offspring compared to the general population. Even if the issue is real, limiting the number of inseminations permitted by any one donor can alleviate the problem and diminish the number of offspring carrying a given harmful recessive gene.

In investigating some of the issues that attend these new reproductive technologies, Kinney (1977) points out that liability of the husband for child support is an important area for consideration. The question usually arises when a marriage is dissolved or when the husband did not consent to the wife's use of AID. Most courts have found the consenting father liable for such support.

In a failure to support case, the Supreme Court of the State of California ruled that the defendant was required to support the child born during his marriage to the child's mother. This decision started a trend toward liberalization of AID case law and provided that "A husband is the lawful father of a child born to his wife during their marriage, which child was conceived by artificial insemination with the semen of a third party donor." The court continues, "Since a child conceived through heterologous (donor) insemination does not have a 'natural father'
the court looks for a lawful father." (People v. Sorensen, 1968).

The most recent case in AID litigation is Re: Adoption Anonymous 1973, which involved husband's petition to adopt wife's child of a former marriage. When ex-husband refused consent, present husband contended that consent was not necessary because the child had been conceived by AID and, as a result, ex-husband was not the child's father. In relying heavily on the Sorensen decision, the court found ex-husband to be the lawful father of the child, having been born of consensual AID.

Another legal issue, in some states, is whether or not undergoing AID constitutes adultery. In Gursky v. Gursky, 1973 in New York, the wife was deemed to have committed adultery by having AID, even with the consent of her husband.

The outcome of this case reflects the influence of the Catholic Church which views as morally abhorrent any interference with the exclusive right of one spouse to the reproductive capacity of the other spouse (Finegold, 1976). If it is found that the act of artificial insemination causes the woman to be considered adulterous, then it becomes very difficult to view the child as legitimate. However, regardless of the view of the court in Orford v. Orford, 1921 (Kinney, 1977) and several others, the real issue has been whether or not there has been direct physical contact be-
tween the parties and an element of sexual gratification for those involved.

People v. Sorensen was a turning point in the attitude toward AID and adultery. The California Supreme Court ruled that, "To consider AID to be adultery... is absurd since the doctor may be a woman, or the husband himself may administer the insemination... the donor... may be a thousand miles away or may even be dead..." (Kamlet, 1975).

Should the need to limit population growth influence decisions about AID? It can be argued that childless couples aid in any attempt to limit population growth (Edwards and Sharpe, 1971), but the price to them is high. An article from the CIBA Symposium by Freid (1972) discusses the ethical issues in emerging and existing techniques for the improvement of human fertility and their relationship to the world population problem. Freid states that rendering fertile those women who would otherwise be infertile is not to be considered a social nuisance.

The possibility of providing natural children to women without a male partner also needs to be dealt with. Since a donor need not be the spouse, why then must the mother be married at all? If women who are unmarried wish to have children, should we exclude them from artificial insemination? This would include heterosexual single women as well as lesbians. Currie-Cohen, Luttrell and Shapiro (1979) sent questionnaires to seven hundred and
eleven physicians regarding the practice of AID in the United States. Of the four hundred seventy one who responded, ten percent had used the procedure to inseminate single women. Today, when so many natural families are single parent families, have we the right to withhold parenthood?

In a lesbian home no heterosexual role modeling occurs. The question of the child's sexual preference is brought up, but no answers can be gleaned because none of the children are mature enough to discuss these matters. Information for studies will also be limited by a desire for privacy on the part of the people involved and the lack of public records.

Another social issue is whether or not an individual has a basic right to know his origins. According to Dr. Piatelli-Palmarini in the CIBA Foundation Symposium (1972), the clash is between a mother's right to fulfill her bi-social role, i.e. motherhood, and the right of the child to know his/her genotype. Originally, this issue revolved around inheritance and genetic continuity or socioeconomic concerns. Today, however, there are medical-scientific reasons to know genetic information. Piatelli-Palmarini believes that humanness, or the positive acquisitions of civilization, includes genetic and sociocultural aspects of a person's family history. Concern has been voiced for many years that the opportunity of genetic control would
create the likelihood of its use to tyrannize the masses. According to Fletcher (1971), "...tyranny is set up first and then genetic controls are employed. The problem of misuse is political, not biological."

Finally, it seems clear that the legal and social aspects of AID are inextricably bound together. The addition of religious restrictions and prohibitions complicates the problem even further. Each of several religions mentioned by Finegold (1976) had somewhat varying points of view. Catholics, for the most part, were extreme in their rejection of any interference with heterosexual intercourse between married partners. Included in this rejection were masturbation, needed for accumulating semen, even if it were the spouse's; coitus interruptus (withdrawal); coitus condomatosus (using a condom); or use of donor sperm. The Anglican Church organized a commission to evaluate this subject and subsequently rejected the propriety of using artificial insemination. Protestants and Jews, for the most part, had no official stand.
CHAPTER III

METHODS AND PROCEDURES

Description of the Sample

The respondents were one hundred (100) residents of the San Fernando Valley area of California. Sixty-three (63) respondents were women and thirty-seven (37) were men.

The Los Angeles Northwestern Area telephone directory provided prefixes, and a random numbers table furnished the remaining four digits of each telephone number called. When the person reached was unwilling or unable to answer the questionnaire, the call was politely terminated and not counted. If there was a busy signal or no answer, the next random number was dialed. Two subjects did not complete the questionnaire, and were eliminated from the study. A total of 786 calls were initiated, and 123 people, or approximately 16% of those called, declined to answer the questionnaire; the remaining 563 were busy or out of service.

The age range of the respondents was thirteen (13) to eighty-two (82). Fifty-six (56) respondents were married and five (5) lived with a male to whom they were not married. Of the remaining thirty-nine (39) respondents, two (2) were separated, two (2) widowed, six (6) divorced and twenty-nine (29) were single.

Respondents were asked if they had children and fifty-eight (58) respondents had one hundred (100) children
collectively, with one expected. In addition to the biological children, four (4) children were adopted. Of the forty-one (41) childless respondents, fifteen (15) said they would not have children in the future, and twenty-six (26) said they intended to have children in the future. Fifty (50) of those with children did not intend to have additional children, while only six (6) intended to have additional children. Three (3) subjects said they might have children in the future but could not be certain presently.

Religious preference broke down as follows: seventeen (17) Catholics, forty-one (41) Protestants, twenty (20) Jews and twenty-two subjects described themselves as having no religious preference or affiliation.

Research Procedure

In order to determine attitudes related to novel reproductive technologies, respondents answered forty-seven (47) questions pertaining to this issue.

Distribution of telephone prefixes was based on population density according to the Los Angeles County Department of Regional Planning Quarterly Bulletin (May, 1979 and November, 1977). The number of calls made to each geographical area was determined by the approximate percentage of the total population living there. The remaining four digits of each number were obtained using a Random Numbers
The flip of a coin established the direction for choosing numbers on the Random Numbers Table, and the first four of five digits supplied were used. Pages of the table were rotated, and the starting point was selected arbitrarily.

The schedule for calling was as follows: beginning with Monday, calls were made from 9:00 A.M. to 11:00 A.M. Each succeeding day, calls were made in subsequent two hour segments. When subjects reached were unable to respond, return calls were made at their convenience, but these calls were tabulated in each of the original time periods.

The questionnaire was designed to investigate attitudes about alternative means of human conception. It included questions about demographic characteristics and questions exploring attitudes toward the moral-ethical and legal aspects of the use of novel reproductive methods.

In order to control for the effects of "yea and nay saying" in the results, questions were counterbalanced by alternating positive and negative questions related to each issue.

Subjects were presented with a prepared script in order to minimize deviations from call to call. The script was as follows:
"Hello, my name is Gail Simpson, and I'm doing a survey at California State University, Northridge. Would you be willing to spend approximately fifteen minutes answering some questions about your attitude toward new methods of human conception?" (Wait for reply.) "If right now is an inconvenient time, I will be happy to call back at your convenience. Your telephone number was dialed at random so your identity is unknown even to me. I do need to know some things about you, however, so I will be asking questions about some vital statistics. If you have no questions, we'll begin.

Conception Questionnaire

1. Female_____Male_____

2. Do you live alone or with a mate?
   Live alone:    Single_____Widowed_____
   Divorced_____Separated
   Live with mate: Married____Unmarried_____

3. If married, for how long?

4. If previously married, for how long?____
   (If answered, ask #5)

5. How long since you have lived together?____

6. Have you ever had children? Yes____No____
   Number of biological children____
   Number of adopted children____
7. Do you intend to have children in the future?  
Yes ___ No ___

8. Do you have a religious preference? Yes ___ No ___  
If so, what is it? ________________________________

9. How often do you attend religious services?  
Often ___ Seldom ___ Rarely ___ Never ___

10. What is your occupation? ________________________________  
Mate's occupation ________________________________

Novel methods of conception are being used. However, no one knows the social and legal consequences. Your responses to the questions will help us to know how acceptable these procedures are to the general public.

I will now ask you some questions about artificial insemination donor. This is a situation in which donor sperm is mechanically deposited to a woman's vagina for fertilization.

11. How familiar are you with artificial insemination donor?  
Very ___ Moderately ___ Slightly ___ Unfamiliar ___

12. Have you ever participated in the use of artificial insemination donor? Yes ___ No ___

13. If so, in what way?  
Recipient ___ Donor ___ Technician ___ Other ___

I will now make some statements regarding this procedure and ask you to respond. You can agree strongly or moderately, be neutral, or disagree strongly or moderately.
Do you have any questions before we begin?"

14. If it were the only way to get pregnant, I would be willing to use artificial insemination with sperm donated by a man other than my mate. (Female question)
If it were the only way to get pregnant, I would be willing to have my mate use artificial insemination with donated sperm. (Male question)

15. If it were the only way to get pregnant, it is acceptable to me if others use artificial insemination with donated sperm.

16. Children born as a result of using donor sperm should be considered illegitimate.

17. When donor sperm is used, the mother's husband should be considered the legal father.

18. When donor sperm is used, the child should not be entitled to inherit from the donor.

19. When donor sperm is used, the donor should not be entitled to inherit from the child.

20. Artificial insemination donor should be made available to female homosexuals.

The next questions concern in vitro fertilization which is the fertilization of a female egg by sperm in a laboratory dish. After fertilization, the embryo is inserted into the uterus where it is carried to term. A woman's own egg or a donor egg can be used in this procedure.
21. How familiar are you with in vitro fertilization?
   Very _____ Moderately ___ Slightly ____ Unfamiliar ____

22. If it were the only way to get pregnant, I would be willing to use in vitro fertilization with my egg and my mate's sperm. (Female question)
   If it were the only way to get pregnant, I would be willing to use in vitro fertilization with my sperm and my mate's egg. (Male question)

23. If it were the only way to get pregnant, it is acceptable to me if others want to use in vitro fertilization with their own egg and sperm.

24. If it were the only way to get pregnant, I would be willing to use in vitro fertilization with a donor's egg and my mate's sperm. (Female question)
   If it were the only way to get pregnant, I would be willing to use in vitro fertilization with my sperm and a donor's egg. (Male question)

25. If it were the only way to get pregnant, it is acceptable to me if others want to use in vitro fertilization, using a donor's egg.

26. Children born as a result of using a donated egg should be considered legitimate.

27. The legal mother of a child conceived using a donor egg is the woman who supplies the egg and not the woman who carries it.
28. It is unacceptable to experiment on fertilized human eggs in a laboratory.

29. It is acceptable for researchers to destroy some fertilized eggs in the laboratory.

30. Consent should be required from recipient and mate before undergoing these procedures.

31. People should be given the opportunity to have children by any method available without government regulation.

32. The government should provide funds for reproduction research.

33. Single women should have the opportunity to get pregnant using donor sperm or laboratory conception.

34. Abortion on demand is not acceptable.

35. It is acceptable to abort abnormal fetuses.

36. Receiving donor egg or sperm constitutes adultery.

37. The child should have the right to discover the identity of the donor.

38. Donors should be paid for their contribution.

39. Children born as a result of using donor sperm or laboratory fertilization should be told how they were conceived.

40. Obligation for support of a child conceived with donor egg or sperm should be the responsibility of the donor.

41. Who should be allowed to perform these new methods of conception?
Doctors___Laboratory Technicians___Nurses___
Some combination of these___Anyone___No One___

42. Making rules and regulations having to do with these methods should be the responsibility of: Government Agencies___Doctors___Individuals___Some combination of these___Others___

43. In your opinion, human life begins at:  Conception___Quickening___Viability___Birth___

44. What is your age?___

45. Tell me the letter of the income group that best describes your income before taxes. Figure should include salaries, wages, dividends, profits, pensions and all other income.
A. Less than $6,000  D. 28,000 thru 38,999
B. 6,000 thru 16,999  E. 39,000 thru 49,000
C. 17,000 thru 27,999  F. 50,000 +

46. How many people lived on this income last year?

47. What is your sexual preference?
Heterosexual___Homosexual___Bisexual___

Design of the Study

A survey design was chosen as the instrument of a preliminary investigation of the current status of attitudes toward conception technology. The survey technique allowed for a gathering of information on a little explored topic. It was anticipated that this survey would provide policymakers a basis upon which future legal and ethical
guidelines could be formulated. In order to accomplish this goal, questions were specifically directed to the legal and moral implications of using these new conception techniques.

**Statistical Methods**

Respondents answered most questions by choosing one of the following responses: "Strongly Agree," "Moderately Agree," "Neutral," "Moderately Disagree" and "Strongly Disagree."

Chi Square calculated as:

\[ X^2 = \frac{(fo)^2}{fe} - N \]

or using:

\[ X^2 = \frac{N (AD-BC)^2}{(A+B) (C+D) (A+C) (B+D)} \]

The following formula was used to determine if significant associations existed between certain demographic categories and attitudes toward the use of novel reproductive techniques from pre-selected questions.

\[ r = \frac{N \sum XY - (\sum X) (\sum Y)}{\sqrt{N X^2 - (\sum X)^2} \sqrt{N \sum Y^2 - (\sum Y)^2}} \]

Responses were assigned numerical values from five to one starting with Strongly Agree (5) and ending with Strongly Disagree (1). Responses to those sets of questions which were designed to approach the issue from a negative and a positive point of view were appropriately
rearranged prior to analysis.

Significance of $r$ was evaluated using a Critical Ratio Test.

**Limitations of the Study**

The major limitation of this study was the bias of the sample. Subject selection procedures were random, however it is impossible to determine the reasons for which certain subjects declined to respond. An element of bias was introduced because there may have been similarities among those who declined to answer which set them apart from those who did answer. As an example, those who declined to answer may have been uniformly opposed to new conception methods which could have influenced the results.
CHAPTER IV
RESULTS

For the most part, respondents were accepting of the use of novel conception techniques for themselves and others. The exception was the personal use of in vitro fertilization with donor egg which was not overwhelmingly accepted. The vast majority of respondents agreed that children conceived with donor egg or sperm should be considered legitimate, but in neither instance was the donor considered to have legal standing. In the case of artificial insemination donor, the legal father was deemed to be the mother's husband, while in the case of in vitro fertilization with donor egg, the legal mother was thought to be the woman who gestates the fetus. Respondents agreed that donor and child should not be allowed to inherit from one another. Almost without exception, consent to the procedures was thought to be required of prospective parents. Respondents were accepting of experimentation on ova, and, if necessary, their destruction in the laboratory. The majority of respondents were in favor of governmentally funded reproduction research but preferred no governmental regulation of methods. A preponderance of the respondents supported donors' anonymity, including non-responsibility for support. No definite preference was indicated.
regarding payment or nonpayment of donors. Informing a child about the nature of his/her conception was approved by a small margin. Almost everyone disagreed that the use of donor egg or sperm should constitute adultery. Abortion on demand was quite acceptable but still less acceptable than abortion of abnormal fetuses. Respondents were equally divided on the desirability of making AID/IVF available to single women and female homosexuals.

Percentages of responses were compiled for each question and are presented in Table 1.
### TABLE 1
PERCENTAGES OF ATTITUDINAL RESPONSES

<table>
<thead>
<tr>
<th>Description</th>
<th>SA</th>
<th>MA</th>
<th>N</th>
<th>MD</th>
<th>SD</th>
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<td>14. Use AID</td>
<td>24%</td>
<td>28%</td>
<td>9%</td>
<td>14%</td>
<td>25%</td>
</tr>
<tr>
<td>15. Others use AID</td>
<td>65%</td>
<td>24%</td>
<td>8%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>16. Child illegitimate</td>
<td>3%</td>
<td>2%</td>
<td>6%</td>
<td>6%</td>
<td>83%</td>
</tr>
<tr>
<td>17. Mother's husband = legal father</td>
<td>82%</td>
<td>12%</td>
<td>4%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>18. Child should not inherit from donor</td>
<td>61%</td>
<td>10%</td>
<td>8%</td>
<td>5%</td>
<td>16%</td>
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<td>19. Donor should not inherit from child</td>
<td>70%</td>
<td>13%</td>
<td>5%</td>
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<td>9%</td>
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<td>20. AID for female homosexuals</td>
<td>11%</td>
<td>30%</td>
<td>21%</td>
<td>8%</td>
<td>30%</td>
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<tr>
<td>21. Use IVF</td>
<td>71%</td>
<td>19%</td>
<td>4%</td>
<td>3%</td>
<td>3%</td>
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<tr>
<td>22. Others use IVF</td>
<td>76%</td>
<td>19%</td>
<td>4%</td>
<td>0%</td>
<td>1%</td>
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<td>23. Use IVF donor egg</td>
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<td>22%</td>
<td>12%</td>
<td>9%</td>
<td>30%</td>
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<tr>
<td>24. Others use IVF donor egg</td>
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<td>20%</td>
<td>13%</td>
<td>3%</td>
<td>7%</td>
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<tr>
<td>25. Donated egg = legitimate child</td>
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<td>8%</td>
<td>1%</td>
<td>0%</td>
<td>9%</td>
</tr>
<tr>
<td>26. Legal mother supplies egg and does not gestate</td>
<td>4%</td>
<td>2%</td>
<td>11%</td>
<td>11%</td>
<td>72%</td>
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<td>28. Should not experiment on eggs</td>
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<td>21</td>
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<td>30. Consent</td>
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<td>31. Any method without regulations</td>
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<td>32. Government funds</td>
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<td>14</td>
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<td>35. Abort abnormalities</td>
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<td>14</td>
<td>6</td>
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<tr>
<td>36. Donor = adultery</td>
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<td>4</td>
<td>4</td>
<td>6</td>
</tr>
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<td>37. Identity of donor</td>
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<td>14</td>
<td>16</td>
<td>11</td>
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<td>38. Donors paid</td>
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<td>14</td>
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<td>39. Children informed about conception method</td>
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<td>40. Support by donor</td>
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<td>1</td>
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Chi Squares were done on questions which pertained to the use of AID for one's self (Question 14) and for others (Question 15), including single women (Question 33) and female homosexuals (Question 20). Additional Chi Squares were done on acceptance of IVF for one's self (Question 22) and for others (Question 23), as well as the use of IVF with donor egg for one's self (Question 24) and for others (Question 25). Experimentation (Question 28) and consequent destruction of fertilized ova in the laboratory (Question 29), and the child's right to know the donor's identity (Question 39) were also analyzed.

The Strongly and Moderately Agree categories were collapsed as were the Strongly Disagree and Moderately Disagree categories. Therefore, all relevant questions were done for Agree - Neutral - Disagree by sex, marital and parental status and religious preference.

Tables 2, 3, 4, and 5 represent percentages and Chi Squares for males-females, marrieds-singles, children-no children and religious preferences, respectively.
<table>
<thead>
<tr>
<th></th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Chi Squares</th>
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<td>14. M</td>
<td>49%</td>
<td>10%</td>
<td>41%</td>
<td>3.9</td>
</tr>
<tr>
<td>F</td>
<td>54%</td>
<td>8%</td>
<td>38%</td>
<td></td>
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<tr>
<td>15. M</td>
<td>78</td>
<td>14</td>
<td>8</td>
<td>6.1*</td>
</tr>
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<td>F</td>
<td>95</td>
<td>5</td>
<td>0</td>
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<td>20. M</td>
<td>43</td>
<td>19</td>
<td>38</td>
<td>9.9*</td>
</tr>
<tr>
<td>F</td>
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<td>22</td>
<td>38</td>
<td></td>
</tr>
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<td>8</td>
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<td>5</td>
<td></td>
</tr>
<tr>
<td>23. M</td>
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<td>5</td>
<td>2</td>
<td>1.19</td>
</tr>
<tr>
<td>F</td>
<td>97</td>
<td>3</td>
<td>0</td>
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<td>49</td>
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<td>F</td>
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<td>16</td>
<td>33</td>
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<td>25. M</td>
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<td>16</td>
<td>14</td>
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<td>F</td>
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<td>8</td>
<td></td>
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<td>28. M</td>
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<td>54</td>
<td>.699</td>
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<td>F</td>
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<td>17</td>
<td>51</td>
<td></td>
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<td>29. M</td>
<td>65</td>
<td>13</td>
<td>22</td>
<td>.833</td>
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<tr>
<td>F</td>
<td>56</td>
<td>17</td>
<td>27</td>
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<td>33. M</td>
<td>41</td>
<td>11</td>
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<td>F</td>
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<td>30</td>
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<td>39. M</td>
<td>43</td>
<td>24</td>
<td>32</td>
<td>4.695</td>
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<td>F</td>
<td>60</td>
<td>10</td>
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</table>

* p<0.05

Percentages and Chi Squares for Males-Females according to specific questions.
### TABLE 3

<table>
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<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Chi Squares</th>
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<tr>
<td>14. M</td>
<td>49%</td>
<td>8%</td>
<td>43%</td>
<td>1.205</td>
</tr>
<tr>
<td>S</td>
<td>58%</td>
<td>10%</td>
<td>32%</td>
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</tr>
<tr>
<td>15. M</td>
<td>92</td>
<td>5</td>
<td>3</td>
<td>1.704</td>
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<tr>
<td>S</td>
<td>85</td>
<td>12</td>
<td>3</td>
<td></td>
</tr>
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<td>20. M</td>
<td>47</td>
<td>17</td>
<td>36</td>
<td>.837</td>
</tr>
<tr>
<td>S</td>
<td>36</td>
<td>22</td>
<td>42</td>
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<td>22. M</td>
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<td>5</td>
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<td>8</td>
<td></td>
</tr>
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<td>23. M</td>
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<td>2</td>
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<td>5</td>
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<td>24. M</td>
<td>46</td>
<td>15</td>
<td>39</td>
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<tr>
<td>S</td>
<td>56</td>
<td>7</td>
<td>37</td>
<td></td>
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<td>25. M</td>
<td>80</td>
<td>12</td>
<td>8</td>
<td>.6099</td>
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<td>S</td>
<td>73</td>
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<tr>
<td>28. M</td>
<td>37</td>
<td>20</td>
<td>43</td>
<td>6.912*</td>
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* p<0.05

Percentages and Chi Squares for Marrieds-Singles according to specific questions.
TABLE 4

<table>
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<th>Neutral</th>
<th>Disagree</th>
<th>Chi Squares</th>
</tr>
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<tr>
<td>14. C</td>
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<td>7%</td>
<td>43%</td>
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<td>15. C</td>
<td>90</td>
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* $p < 0.05$

Percentages and Chi Squares for Children-No Children according to specific questions.
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### TABLE 5

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* $p < 0.05$

Percentages and Chi Squares for Religious Preferences according to specific questions.
A Pearson Product Moment Correlation Coefficient was computed for six pairs of questions. The pairs related to the use of AID and IVF donor (Questions 14 & 24), legitimacy of the product of AID and IVF donor (Questions 16 & 26), legal parents of the products of AID & IVF donor (Questions 17 & 27), use of AID and/or IVF for single women and female homosexuals (Questions 20 & 33), experimentation and destruction of ova in the laboratory (Questions 28 & 29), and the issue of abortion (Questions 34 & 35).

Results of Pearson Product Moment Correlation Coefficient are presented in Table 6.

TABLE 6

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* p < 0.05
DISCUSSION

A great deal of applied research has been done to remedy infertility. Records show that approximately 15% of all couples are infertile. In terms of biological dysfunction, males account for 40% of the infertility, and females for the remaining 60% (Goldstein, 1975). When a couple finds themselves infertile, there are several choices open to them. They can accept the fact that they will be permanently childless, adopt a child, or consider one of the new conception techniques.

Since children are seen by many as a binding element in a marital relationship, the idea of remaining childless is unacceptable for many people. Indeed, the marriage may be adversely affected by forced acceptance of a childless state. Adoption is seen within our society as a socially acceptable way for a couple to remedy a barren marriage. Unfortunately, many fertile women married to infertile men view adoption as depriving them of the experience of pregnancy and childbirth, and this lack of fulfillment can cause problems within the marital relationship. Conversely, a fertile man married to a barren woman might feel he had been deprived of his right
to fatherhood and the continuation of his bloodline. The increased use of oral contraceptives, liberalized abortion laws, and the acceptance of unmarried parental status have dramatically reduced the number of children available for adoption. For these reasons, the use of artificial insemination has increased just as dramatically. Available data tells us that in the last twenty years, over a quarter of a million children have been conceived using this method (Behrman, 1979).

1978 signalled the birth in England of baby Louise Brown, the world's first child to be conceived using in vitro fertilization. Louise was conceived using the egg and sperm of her parents, Mr. and Mrs. John Brown. Although the media have chosen to refer to Louise Brown as a test-tube baby, this is an incorrect interpretation of the method of conception used. Test-tube babies will be conceived outside the body, or extra-corporeally, as Louise was, and will then continue their gestation in an artificial womb in the laboratory. Babies who are fertilized within the present understanding of in vitro fertilization will be returned to a uterus for gestation.

Possibilities for the future do include the use of donor and/or egg for in vitro procedures, as well as gestation in a donor uterus.

The use of donor egg or sperm introduces an anonymous third party into the marital relationship. The addition
of this extramarital factor could create some serious problems. In the case of AID, it has been suggested that the absence of a biological relationship between husband and child can exacerbate marital discord because the wife cannot see her husband's image in the child (Smith, 1968). Either partner could view the other's inability to procreate as a personal failing, which could be reinforced by the presence of the child. Not only can egos be threatened, but there may be religious prohibitions against donor insemination which can cause a great deal of anxiety.

In investigating the clinical and psychological aspects of AID, David and Avidan (1976) found that many husbands had feelings of guilt because they could not give proof of their manhood by making their wives pregnant. Wives also felt guilty because they could not share their husband's failure in the reproductive process.

**Ethical Evaluation of Reproduction Research**

Last year, the Ethics Advisory Board of the United States Health, Education, and Welfare Department delivered a report which resulted in lifting the ban on government funding of reproduction research. The consensus of opinion was that in vitro fertilization is ethical as long as it is conducted under strict guidelines. The rules imposed are that sperm and eggs should come only from lawfully married couples, and that research should be limited to embryos only in the first two weeks of development after being
fertilized. There is no doubt that clinics designed to help infertile couples via the IVF method will open around the country in the very near future. The privately funded Eastern Virginia Medical School will open such a clinic in Norfolk, Virginia later this year.

**In Vitro Fertilization - Arguments For and Against**

In spite of the fact that Louise Brown is a healthy baby, IVF remains an experimental procedure. Scientific research on IVF has not yet reached a point that can guarantee most eggs fertilized in this manner will survive to term, or that a higher degree of risk doesn't exist for children conceived with IVF. Prior to last year, the American Medical Association had condemned IVF and subsequent embryo transfer because it was believed that medicine should be devoted to the treatment of disease, not just the desire to have children. With the lifting of the ban on reproduction research, IVF will undoubtedly begin to emerge from the experimental stage.

There are others who justify the use of IVF because it allows some childless couples, of whom there are approximately two and one half million in the United States, to have the children they want. The argument here is that it is the obligation of medical practice to relieve suffering, and that childlessness is a crucial form of suffering for some people. Edwards and Shärpe (1971) agree that one of the most basic human instincts is the desire to have
children, and that to deny this desire can lead to psychological and social problems. Other arguments in favor of IVF maintain that such a procedure cannot constitute unethical experimentation on humans because the conceptus is merely a collection of tissues and cells, not a human being. Additionally, it is thought that the parents can consent on behalf of the conceptus to the possible risks involved. Dr. Joseph Fletcher (1971), who has been called the "father of situation ethics", has strongly defended the practice of IVF. His primary concern is actual human needs not just abstract human rights. He argues that a woman's need to be a mother justifies her choice to undergo IVF.

A different position is taken by Diamond (1979); he states that the crucial step in evaluating such experiments is to identify the subject of the experiment. His argument is that the subject is the pre-embryonic individual resulting from IVF, and that his/her rights are violated. By giving proxy consent to the experiment, the parents are submitting the potential child to unavoidable risks. This position is supported by Kass (1971) who suggests that there is more at issue than providing children for infertile couples. Kass theorizes that laboratory fertilization is a step toward complete laboratory control of human reproduction.
Moral and Ethical Questions

Because the use of these alternative methods of human conception involve the creation and, in some instances, the destruction of life, serious moral, ethical, and legal problems have been raised.

The present study was undertaken to determine how the public felt about the use of AID and IVF, as well as attitudes toward the moral, ethical, and legal issues surrounding such use.

Although there is an urgent need for legislation with regard to these reproductive techniques, this discussion will concentrate on the following specific moral and ethical implications associated with the use of these new methods:

1. The use of AID and IVF by self and others
2. Religious attitudes toward AID and IVF
3. Donor egg and sperm and the issue of adultery
4. Payment for donated eggs or sperm
5. AID and IVF for single women and female homosexuals
6. The beginning of human life
7. Laboratory fertilization and destruction of fertilized eggs
8. The child's right to discover the donor's identity
9. Telling the child the nature of conception
10. Informed consent to the procedures
The Use of AID and IVF by Self and Others

The respondents in this study varied in their acceptance of AID and IVF. The use of both procedures by others was given the highest degree of acceptance with 89% of the respondents supporting the use of AID and 95% supporting the use of IVF. In considering the use of these procedures for themselves, IVF with a wife's own egg received a higher degree of acceptance than either artificial insemination donor or in vitro fertilization with a donor egg. Women were found to be significantly more accepting of others using AID than were men. The percentages of acceptance of these procedures were 52% for AID and 49% for IVF with donor egg, compared to 90% for the use of IVF with wife's own egg. It is interesting to note that 39% of the respondents disapproved of the use of both AID and IVF with donor egg, while only 6% were opposed to the use of IVF with wife's egg.

The percentages of acceptance imply that both women and men would have a strong desire to be related biologically or genetically to the children they raise and call their own. The fact that women were more accepting of the use of AID by others reflects a desire to take part in the procreative process regardless of the physiological dysfunction of their mate.

The respondents' overwhelming acceptance of others
using the novel reproductive techniques would indicate that there may not be a strong objection to the techniques on ethical or moral grounds. The conclusion is that it isn't the procedure, per se, that is unacceptable, but rather the issue of genetic linkage to the parents.

Religious Attitudes Toward AID and IVF

Several religions have taken moral stands with regard to AID. The Roman Catholic Church spoke out against the procedure in magisterial pronouncements from Pope Pius XII. He made his position clear at the Fourth International Convention of Catholic Doctors in 1949, The Congress of Italian Catholic Union of Midwives in 1951 and again at the Second World Congress of Fertility and Sterility in 1956 (Diamond, 1979). He condemned artificial insemination whether done with husband's sperm or with donor sperm, and offered the following considerations:

"1. Insemination outside the natural act of intercourse would convert the sanctuary of the family into nothing more than a biological laboratory.

2. Artificial insemination would separate the unitive and procreative meanings of sexual intercourse, sundering by human action what is divinely intended to be inseparable.

3. Artificial insemination would entail immoral means for procuring sperm (masturbation).

4. Artificial insemination using donor sperm would violate the marriage covenant requiring that procreation of new life can only be the fruit of marriage."

As was to be expected, the hierarchy of the Catholic
Church declared IVF "immoral and absolutely illicit" in 1956 (Edwards, 1974). However, this ruling was not accepted by the Catholic Doctors Ethical Committee which stated the following:

"In vitro fertilization with a view to transfer at an early stage to the womb of the 'mother' is, in principle, acceptable."

Protestants and Jews varied only slightly in their acceptance of these techniques. In an article from the New York Times, it was reported that Protestants and Jews see no theological problems with non-sexual reproduction so long as the parents of the child conceived are married (Cohen, 1978). This attitude probably takes root in early church doctrine when it was thought that a child could not be conceived from the sperm of a man other than the mother's husband unless sexual contact had taken place. This type of relationship was seen as an adulterous one, and the possibility of conception without an adulterous liaison was not even discussed because, at the time, it was not possible.

Of the respondents who answered this survey, Catholics were the least accepting of the use of AID by self and others as well as the use of IVF with own or donor egg. Only 35% of the Catholics agreed with the use of AID for self, while 76% of the Catholics accepted the use of IVF with own egg. Only 35% were in favor of IVF with donor egg, with 59% of the Catholics rejecting this technique.
Donor Egg or Sperm and the Issue of Adultery

It is difficult to discuss the issue of adultery without also discussing the legitimacy of the child born as a result of donor egg or sperm. From a legal standpoint, the legitimacy of such a child would depend on whether the mother's impregnation constituted adultery. Since, in the case of IVF with donor egg, a woman receives an egg from another woman, adultery might seem an incongruous thought. However, from an historic standpoint, adultery was defined as the introduction of spurious heirs into a family which adulterated the husband's issue and diverted the inheritance. In the case of AID, the question remains whether consent to such a procedure constitutes adultery.

Approximately 90% of the total population responding to the questionnaire disagreed that such consent did constitute adultery. This supports the notion that any statement proclaiming AID adulterous would be unwarranted since adultery connotes actual sexual contact between the two persons. The motivation for adultery is thought to be sexual gratification; pregnancy, the desired result of AID, is carefully avoided. How can AID be considered unethical or immoral when neither physical contact nor sexual gratification are involved?

Payment for Donated Eggs or Sperm

The practice of paying donors for their sperm is being done in a number of clinics around the country. Curie-
Cohen, Luttrell and Shapiro (1979) report that of 471 physicians queried, 46% paid $25.00 per ejaculate; 88% paid between $25.00 and $35.00; 5% paid less than $20.00 and 7% paid more than $35.00, up to $100.00. There is some concern that offering a financial incentive to the donors makes them less reliable in terms of giving family history data. G. R. Dunstan, writing in the CIBA Foundation Symposium (1972), suggests that there should be a legal prohibition against the payment of donors, and that the appropriate professional body should declare such payment an unethical act. Dunstan also suggests that payment of financial reward encourages concealment of relevant medical history.

Payment to women for donated eggs suggests a number of different possibilities. It does not seem too much of a fantasy to propose that payment for eggs might be the beginning of a black market embryo operation. Women who find themselves surprisingly and unhappily pregnant might have the opportunity to sell the embryo instead of opting for abortion. With sperm banks already in operation, can egg or embryo banks be far behind? If payment is to be made for donor sperm or donor egg, why not payment for the use of a donor uterus? In this way, women who have viable eggs might have the option of having a child but not devoting nine months of their lives to its gestation. Carrying a child and giving birth might be arranged by
financial contract. This option might be particularly attractive to professional women such as movie stars or professional athletes whose careers could be seriously interrupted with pregnancy. Those who think such suggestions absurd might take note of the fact that Aldous Huxley's *Brave New World* is no longer a far fetched science fiction story but an approaching reality.

Respondents to the questionnaire were almost evenly divided on the issue of payment to donors with 32% in favor of payment, 29% neutral and 39% against such payment.

**AID and IVF for Single Women and Female Homosexuals**

Another area of controversy is performing AID, and IVF in the future, on single women. Presumably this would include lesbians. At the present time, approximately 10% of those physicians performing AID are using this method on single women (Curie-Cohen et al, 1979). At a Case Conference (1978) qualified physicians, psychiatrists, and counselors discussed the practice of lesbians using AID in order to have a child. Opinions were varied and several are offered as follows:

1. The majority of investigations have failed to find any genetic or endocrine basis for homosexuality.

2. A stable relationship is more important than the sex of the parents.

3. Although it was argued that the child would be
raised in an abnormal environment, it is only
abnormal because of the way society views sex roles.

4. Homosexual couples are no more likely to interfere
with the developing sexuality of their children
than are heterosexual couples.

Respondents in this study differed in their attitudes
toward the use of AID and IVF for single women and female
homosexuals. Although 47% were in favor of the procedure
for single women, only 41% agreed that these techniques
should be made available to female homosexuals. Married
and single respondents differed significantly in their
attitudes toward these procedures for single women. While
51% of the singles accepted single women using AID and IVF,
only 46% of the marrieds were in accord.

This might suggest that singles would be more in favor
of any and all techniques being made available to their
specific population. In addition, the notion of single
parenthood is more accepted in society today than ever
before. Married people, on the other hand, might feel
that children should be raised within a family unit, as
marriage and parenthood are still seen as having great
value in today's society.

Men were found to be significantly more accepting than
women of making these procedures available to female homo-
sexuals. The notion exists that same sex homosexuality
is more threatening than homosexuality in the opposite
sex. If this is true, then females would indeed be less accepting of female homosexuals using these procedures to have children. Since all respondents described themselves as heterosexuals, females who have children, or who intend to have them in the future, might have a greater degree of prejudice against those women who have an alternative lifestyle becoming mothers and raising children in what they perceive as an unsuitable psychological environment.

The Beginning of Human Life

One of the more important considerations examined by the Ethics Advisory Board was the time limit on embryo studies. With the ruling that studies could last no more than fourteen days after fertilization, the Board was determining the justifiable point at which "human material" should be treated as an individual with human rights (Toulmin, 1978). The fourteen day cut-off was agreed upon for several reasons. First, this time period ends with various detectable hormonal changes in the female. It also ends with the most likely time for a spontaneous abortion. It was also felt that by citing the implantation period there would be a reemphasis on the concept that embryo experimentation is designed for creating life and not only for scientific research. In a broader sense, this is tantamount to saying that life actually begins after the 14th day, which is the period after the embryo has implan-
ted itself in the uterus. The Advisory Board rejected the events of conception, heartbeat and birth as the critical time when life begins. This seems a particularly important point in view of the abortion controversy that continues in society. As to the time when life begins, 47% of the respondents felt life begins with conception; 21% at quickening (feeling life); 12% at viability (ability of the fetus to survive outside the womb) and 20% at birth. The crucial issue for the respondents who felt that life begins with conception did not seem to be where or how conception takes place, but only that when the sperm cell and the ovum unite, human life actually begins.

Laboratory Experimentation and Destruction of Fertilized Eggs

One of the major ethical questions that comes to mind when considering IVF is whether it actually constitutes unethical experimentation on human beings. Reilly (1975), in an article considering the legal perspectives of IVF, suggests that this is actually two questions. First, the unknown burden of risk on the embryo, and second, the necessary destruction of fertilized eggs in the course of laboratory work. The destruction can be by choice, by mistake, or through negligence, but as this research continues, a great many human embryos will be destroyed.

Ramsey (1978) points out that the blastocyst is a cluster of cleaving cells that has the ability to renew itself if momentarily injured. After cell differentiation,
the embryo is more vulnerable to irreversible damage. Lappe (1978) makes note of the fact that a basic feature of human embryonic development is a 10 to 20% spontaneous abortion rate. This appears to be a selective process wherein abnormal embryos abort in greater numbers. It is proposed that as many as 80% of all chromosomally abnormal embryos may be lost in the first and second trimester of pregnancy. Lappe believes there is good evidence that abnormal embryos developed in vitro would reduce themselves through this winnowing process. Additionally, amniocentesis can be done to determine genetic and chromosomal abnormalities with subsequent abortion as an option.

The question seems to be whether the fertilized egg is merely a collection of cells or live human material. Kass (1978) agrees that IVF raises monumental ethical questions and points out that there are several possible fates for the blastocyst conceived in the laboratory. The first, and most desirable, is implantation and future birth. The other much less desirable fates include destruction or a natural demise and use in experiments. Kass maintains that a blastocyst is a potential human being that deserves our awe and respect. He further states:

"In the blastocyst, even in the zygote, we face a mysterious and awesome power; a power governed by an immanent plan that may produce an indisputably and fully human being. It deserves our respect not because it has rights and claims on sentience
(which it doesn't have at this stage) but because of what it is now and prospectively."

Because of the importance of this ethical issue, attitudes toward experimentation on fertilized eggs as well as their destruction in the laboratory were polled. Experimentation on fertilized eggs was agreeable to 52% of the respondents and destruction of eggs in the name of scientific research was acceptable to 50% of the respondents. Of particular interest is the fact that married and single subjects as well as those with and without children differed significantly in their attitudes toward these two issues. Of the single people questioned, 68% accepted experimentation with 42% of the married subjects accepting. 64% of those without children accepted destruction of fertilized eggs and 45% of those with children accepted such a procedure. It is possible that those respondents who are unmarried and/or childless have not yet seriously considered reproduction and do not conceptualize a fertilized egg as a potential human being.

Those respondents with children and marrieds who may be considering the start of the family may view a fertilized egg as a full human being who deserves full rights from the moment of fertilization. Presumably these full rights would include protection from experimentation and destruction in the laboratory.
The Child's Right to Discover the Identity of the Donor

While a great deal of controversy surrounding AID and IVF concerns the rights of the parents to have such procedures, little attention has been paid to the rights of the child produced by such methods. Experience with AID has shown that there is an inhibitory social and moral climate surrounding the procedure which causes the physician, husband, wife, and donor to join in a conspiracy of deception to prohibit the child from ascertaining his/her genetic identity. It is no doubt assumed that it is in the best interests of the child to prevent knowledge of biological origin. Presumably this conspiracy would also apply in the future to children produced through IVF with donor egg. From a practical standpoint, genetic information should be made available to the child, even if personal contact with the donor is never desired or made.

The rights of the donor also need to be considered. If the requested anonymity is breached, what affect might this have on an already established marital or family relationship?

Respondents to this study supported the donor's anonymity with 56% disagreeing that the child should have the right to discover the identity of the donor. The percentage of those agreeing with such right was 28%.
Telling the Child the Nature of Conception

Another major area of ethical and moral concern is whether to tell the child the nature of his/her conception. With the present practice of AID and the future practice of IVF with donor egg or even surrogate motherhood, a serious loss of identity could occur to a child who discovers that one parent was an unknown donor from whom some genetic material was obtained. The additional knowledge that conception took place either by mechanical introduction of sperm or in a laboratory dish could complicate the psychological picture. As an example, Louise Brown's birth was heralded in medical circles all over the world, and the psychological consequences of such a well advertised beginning in life remain to be investigated and appraised.

Let us further imagine that a child find he/she was gestated by a female to whom there is no biological relationship. Dr. Piatelli-Palmarini at the CIBA Symposium (1972) made note of the fact that a person's entire concept and existential "felling-in-the-world" is equally dependent on the nature of his/her coming into being as it is on having a healthy mind and body.

Slightly more than half of the respondents, or 54%, agreed that the child should be told the nature of conception, with 32% disapproving. As has been found with the
issue of adoption, it would seem that open and honest communication between parents and child is valued.

A rather surprising result of the study was that religious groups differed significantly with regard to telling children how they were conceived. Nearly 75% of those who claimed to have no religious preference were in favor of telling the child the nature of his/her conception; 65% of the Jews approved with approximately 40% each of both Protestants and Catholics in favor of providing such information. Even though Catholics and Protestants were very similar in their acceptance, they differed considerably in their disapproval of telling the child. 44% of the Protestants rejected the idea, with only 18% of the Catholics rejecting.

**Informed Consent to the Procedures**

The most overwhelmingly accepted recommendation of this research is that of informed consent by both parties before any procedure can take place. The largest majority, 97%, of the respondents agreed with informed consent with only 2% in agreement.

This would confirm a strong desire on the part of both women and men to be honest with each other about consideration of using these new procedures. Open and honest communication between partners is viewed as an integral part of a stable relationship, and such reciprocal consent would be necessary with regard to a decision as important as the creation of new life.
Summary

The artificial creation of life has far-reaching implications for the human race. The alternative methods of human conception investigated and discussed here appear to be the first step toward the development of genetic engineering. The possibility exists that there will be a conscious and deliberate decision to alter the biological structure of the human species, and its natural form of reproduction, or move ahead to biological and biomedical engineering. There is no easy answer to such a question, and a great deal of discussion will be needed to interpret and resolve the moral and ethical issues presented as these techniques come into widespread use.

Implications for Future Research

Ultimately it will be society that determines how much research will be conducted, and how the effects of the research will be implemented. Regulation of these new techniques will need to take the interests of all parties involved into consideration, be it mother, father, donor, or embryo. This paper has attempted to present a broad overview of attitudes toward new reproductive techniques from a small segment of the population. Future research on a larger scale will help delineate the rights and responsibilities of all participants.
REFERENCES


Diamond, E. F. In vitro fertilization: a moratorium is in order. *Hospital Progress*, 1979, 60 (5), 66-68, 80.


APPENDIX
## DISTRIBUTION OF TELEPHONE PREFIXES

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<tr>
<th>Area</th>
<th>% of Pop.</th>
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<tr>
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<td>Sherman Oaks</td>
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99.7 100