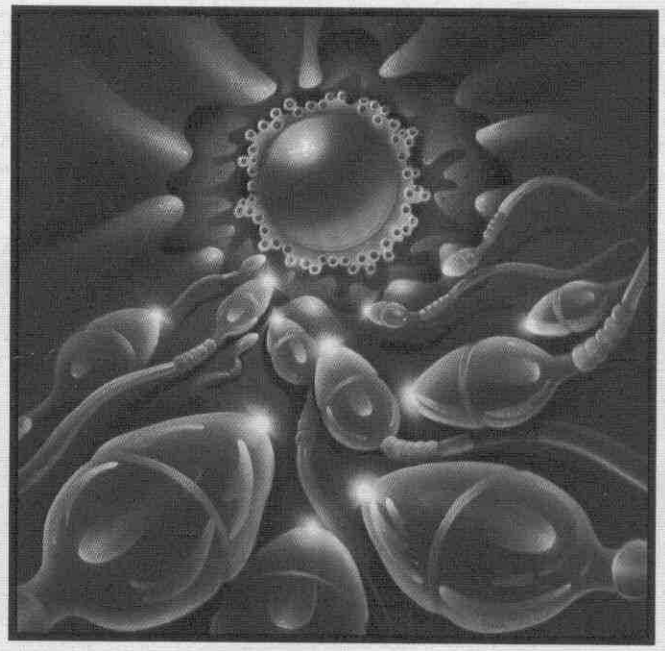
Can men have babies?
Research indicates they can, and volunteers
are already lining up for

MALE PREGNANCY



BY DICK TERESI AND KATHLEEN McAULIFFE

There it was. After all the fruitless affairs, the callous rebuffs in singles bars, and the disbelieving looks of his friends, Jake found himself staring at his dream woman. She appeared in the form of a blind advertisement in the personal columns of *The New York Review of Books:*

SINGLE WHITE FEMALE, 38, successful businesswoman, seeks warm, nurturing, maternal SWM, 25–32. Let's have a baby: I'll pay the bills, you carry the child. Looks not important but ample abdominal cavity a plus. Send recent photograph and histocompatibility profile to Box 20035.

PAINTINGS BY ELLEN GOING JACOBS

At last, Jake thought to himself as he composed a heartfelt letter to the anonymous advertiser at Box 20035. *I just hope she doesn't insist on natural childbirth.*

Okay, so maybe it won't happen quite like that. But it will happen. Someday a man will have a baby.

Already, a male baboon has proved that males can get pregnant. Male mice have also carried babies. And the medical literature is filled with two dozen case histories of women who became pregnant *after* receiving hysterectomies—proving that you don't need a womb to carry a baby.

Our fictitious hero need not worry about natural childbirth, though. It will be anything but natural. What we're talking about is implanting an embryo into a man's abdominal cavity, where the fetus would take nourishment, grow to term, and be delivered by an operation similar to a cesarean section.

But we're getting ahead of our story. Public awareness of male pregnancy developed six years ago, thanks to a remarkable birth in New Zealand. In May 1979 Margaret Martin, a twenty-nine-year-old Auckland woman who just eight months earlier had undergone a hysterectomy, gave birth to a healthy five-pound baby girl. An errant fertilized egg had lodged in her abdomen, on her bowel, where it received enough nutrients to grow to term without the aid of a uterus. Dr. Peter Jackson, Martin's gynecologist, reportedly told journalists that the birth proved it was possible for a man to be made pregnant by placing a fertilized egg on his bowel.

Tabloids the world over announced that the era of pregnant men had arrived. The story struck a nerve in many men. Scientists doing work on the cutting edge of human reproduction were barraged with letters from men who wanted to be mothers. Some were transsexuals. But others were conventional men who simply wanted to experience the joys of pregnancy.

With this background, *Omni* decided to check out the scientific possibilities for male pregnancy. What we found may surprise you.

The New Zealand case was not the first evidence for male pregnancy. Back in the mid-Sixties, Dr. Cecil Jacobsen, of George Washington University Medical School, performed an unusual experiment that commanded little attention at the time. He and Dr. Roy Hertz transplanted the fertilized egg of a female baboon to the abdominal cavity of a male baboon. The embryo attached itself to the omentum, a fatty tissue loaded with blood vessels that hangs down in front of the intestines like a protective apron. "It got adequate blood supply and nourishment," Jacobsen reports. "So with very moderate chemical support, the male baboon was able to carry the pregnancy toward term—that is, well past four months."

The experiment was testimony to the hardy independence of the embryo. One key to the embryo's integrity is its ability to produce a placenta, the vascular organ that normally attaches to the uterus and draws nutrients from the mother. Or in this case, the father—as studies by Jacobsen and others show that the fetal placenta is a versatile, opportunistic, and perhaps even an indiscriminate organ. As UCLA neuroendocrinologist Roger Gorski puts it, the placenta is an "eroding tissue." It seeks out and opens blood vessels. Because of this, it appears that the fetus may be able to attach itself to any site rich in blood and nutrients. Jacobsen's team experimented with implanting fertilized eggs on the kidney and the spleen as well but had best results on the omentum.

The experiment did not result in the birth of a fully developed baboon baby. When Jacobsen says the male baboon carried the pregnancy "toward term," he means that the fetus had reached a point at which it had "survived embryonic development." The

FIERSTEIN

BERGER

WINKLER

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DE YOUNG

GREY

HOFFMAN

One of the few men to truly understand the challenge of childbirth was, remarkably enough, Groucho Marx. "Men always complain that they can never know what it's like to give birth," he said. "I tell them it's easy. Just take hold of your lips—now fold them back over your head." Frequent *Omni* contributor Barbara Rowes asked seven male celebrities for their feelings on the medical possibility of men having babies. Here's what they said:

"I'll deal with the morning sickness. I'll accept the lower backache. I'll breastfeed if necessary. But labor pains have got to go. I've got enough trouble with cramps."

Harvey Fierstein, playwright, author of *Torch Song Trilogy*

"The closest thing that I've experienced to childbirth has been kidney stones. They say the pain from kidney stones approximates the pain of having a child, but I've never heard of anyone saying let's have a kidney stone in nine months. I'm grateful to women for doing this job, and I'm a bit envious of that certain closeness that men have not been able to experience with their children. But then, I've got a bad back to begin with."

Dennis De Young, former lead singer for the rock group Styx

"I'm speechless."

Henry "The Fonz" Winkler

"It's interesting that you asked me this because several years ago, in the play *Marco Polo Sings a Solo,* I actually played the son of a man who gave birth to me. Needless to say, at the time it seemed like a total fantasy. But here we are in 1985 talking about it in the realm of possibility. In any event, I think that anything that would help further that bridge of understanding between the sexes would be good. Nurturing is clearly not an exclusively feminine characteristic."

Joel Grey, now starring in Off Broadway's *The Normal Heart*

"God forbid! Men have different strengths. Motherhood is not one of them."

Alexander Godunov, ballet dancer and one of the stars of Steven Spielberg's *Money Pit*

"Men giving birth to babies in the twenty-first century? I'm immune to it."

Stuart Berger, best-selling author of *Dr. Berger's Immune Power Diet*

"It's about time!"

Dustin Hoffman

normal gestation period for a baboon is seven months. At four months, Jacobsen and Hertz "delivered" the fetus. "Had we wanted to," Jacobsen says, "we could easily have taken the pregnancy to term, because embryonic development was normal, and the fetus was alive when we surgically removed it from the male's abdomen. But we didn't bring it to full maturity because that was not the purpose of our study."

So what was Jacobsen trying to do? He and female-cancer expert Hertz, who is now deceased, were by no means interested in allowing males to have babies. They were concerned with pregnant women who develop ovarian cancer. The ovaries produce various female hormones. At what stage, they wanted to know, is it safe to remove the ovaries without causing a miscarriage? "The question wasn't whether a male could bear a pregnancy," Jacobsen explains, "but at what stage does the embryo make all the hormones needed to maintain a pregnancy? You can answer the question in two ways. You can go ahead and take the ovaries out of different females and see how many babies you lose. Or you can transfer a fertilized egg to the male animal and see if the fetus can survive in different stages."

The experiment has striking, though controversial, implications both for men who want to have babies and for the field of obstetrics and fetal development in general. Contrary to what many researchers at the time thought —and still think—female hormones may not be required for normal embryonic development. The baboon operation implies that the fertilized egg may be autonomous, producing all the hormones it needs for its own development. "That was the marvel of our discovery," says Jacobsen.

Not everyone is similarly impressed. Two decades later, the study remains largely obscure even to specialists in gynecology and obstetrics because Jacobsen never published the results. "It was one small part of a much broader project," he says. Not unjustifiably, this has raised doubts in the minds of some of his peers. Says one critic, who asked not to be identified, "I'm dubious of the veracity of that claim because it never appeared in a bona fide scientific journal." Still, Jacobsen has some heavy credentials. Now director of the Reproductive Genetics Center, in Vienna, Virginia, he is credited with developing and first using amniocentesis, a prenatal test that involves extracting amniotic fluid from the womb to detect chromosome abnormality in an unborn child. That was in 1967. Today physicians use amniocentesis almost routinely on older women and others at risk for giving birth to babies with genetic defects.

Jacobsen is the only scientist on record who has experimented with male pregnancy in primates. But he says that similar work has been done with fowl, rodents, salamanders, and other amphibians.

In a series of experiments in the early Sixties, for example, Dr. David Kirby, of England's Oxford University, transplanted mouse embryos into the testes, spleens, and kidneys of adult male mice. Kirby got the best results in the testes, where one embryo developed in "perfect condition" for 12 days—about half the normal gestation period for a mouse. Kirby, now deceased, theorized that the testicle capsule was simply not elastic enough to allow the embryo to mature fully. The experiment did show, however, that testosterone and other male hormones found in high concentrations in the testes do not thwart normal embryonic development—a positive sign for those males who want to have babies.

But perhaps the best hope for these men comes not from animal studies but from strange pregnancies in women. According to the medical literature, there have been some 24 cases worldwide in which women became pregnant despite having had hysterectomies. While 23 of these ectopic pregnancies (*ectopic* in this case means outside the uterus) didn't result in live births, they offer considerable evidence for the possibility of wombless childbirth. Incontrovertible proof, of course, comes from the twenty-fourth case: New Zealand's Margaret Martin and her five-pound daughter.

"Women without uteri have given birth. In these rare cases, the fertilized egg works its way into the abdominal cavity, which expands to accommodate the fetus."

Then there are those women who despite having intact uteri have given birth without using these organs. Ectopic pregnancies are fairly common, but in most cases this condition refers to embryos that have implanted themselves in the Fallopian tubes. Such pregnancies are doomed as well as life threatening to the mother. The expanding embryo can rupture the tube, and the patient can hemorrhage.

In rare cases, however—about 1,000 have been reported to date—the fertilized egg works its way into the abdominal cavity, which can expand to accommodate the growing fetus. This is an ectopic pregnancy of a different color. Approximately 9 percent of those women with abdominal pregnancies have actually given birth to healthy babies.

It is a difficult condition to diagnose. In July 1981 doctors prepared to deliver a New Jersey woman's baby by cesarean section because ultrasound studies indicated there was a large tumor on top of her womb. The womb, as it turned out, was empty. The "tumor" was actually a seven-pound, ten-ounce baby growing inside the abdominal cavity. In August 1979, Dr. George Poretta attempted to perform an appendectomy on a Michigan woman suffering from stomach cramps. "I opened her up expecting to find an appendix," Dr. Poretta told the Associated Press, "and there was this tiny foot." Prematurely delivered, the "appendix" weighed three pounds, five ounces and was named Joseph Thomas Cwik.

An abdominal pregnancy is precisely the kind of pregnancy the first man/mother will have to endure. It is dangerous. Estimates vary, but the maternal mortality rate is about 6 to 7 percent. Part of the danger stems from the fact that such pregnancies are often not diagnosed until the woman is on the operating table. John Money, a pioneer of transsexual operations and professor of medical psychology and pediatrics at Johns Hopkins Medical School, points out that the "extraordinary thing about the New Zealand case [Margaret Martin] was that the medical person in charge made the correct diagnosis. I mean, it really was an A-plus to be able to recognize what was going on with this lady and to realize that it was a healthy pregnancy." Even so, Martin's pregnancy wasn't diagnosed until 23 weeks after her hysterectomy. She had briefly considered that she was pregnant—her breasts were tender, and she had felt the baby move—but refrained from mentioning the symptoms, according to her doctor, for fear of being ridiculed. In the case of men who purposely undergo abdominal pregnancy, however, the danger of misdiagnosis will obviously be eliminated.

Still, risks remain. In vitro fertilization pioneer Dr. Landrum Shettles has personally delivered two healthy babies that developed in their mothers' abdomens. Such babies, Shettles warns, cannot be delivered normally. He cites the case of a colleague who attempted to remove a baby that was attached to its mother's intestine. "He tried to separate the afterbirth and the placenta from the bowel," recalls Shettles, "and the blood gushed to the ceiling. The mother died instantly." UCLA's Gorski reminds us that the womb is not without purpose: "When delivery occurs, the uterus, which is just a muscular organ, contracts and shuts off the blood vessels eroded by the placenta." Blood vessels supplying the placenta in an abdominal pregnancy, however, do not constrict, and massive hemorrhage can occur if the placenta is separated from the mother. As one obstetrics textbook puts it, bleeding may be "torrential."

Which is not to say you absolutely need the womb. "The point is," Shettles says, "if you have an abdominal pregnancy, you tie the cord off right near the placenta and leave the placenta in place. Don't touch it, and the body will absorb it."

Those are some of the dangers. But let's say a man wanted to have a baby so badly he was willing to take the chance. How would it be done? What experience awaits the first man to carry a baby? After talking to Shettles, Jacobsen, and other experts both in the United States and Australia, it appears the

procedure would go something like this:

Doctors would first perform standard in vitro fertilization to produce an embryo. Eggs would be surgically extracted from the wife's ovary and fertilized with the husband's sperm in a petri dish. (In vitro fertilization is often referred to as "test-tube baby" technology.) In 30 to 50 hours, when the egg has matured to the two- to eight-cell stage and is about the size of the tip of a needle, it would be placed in a flexible catheter for implantation. At this point, however, the in vitro process would take an abrupt left turn. Instead of snaking the catheter through the wife's vagina into her uterus, the doctor would perform a laparoscopy on the husband. A small incision would be made in the abdominal cavity, and the gynecologist would place the embryo into the lower abdominal cavity against the omentum, the fatty, blood-rich tissue in front of the intestines. With luck, the fertilized egg would implant in the omentum, the placenta would develop from the embryo and begin drawing nutrients, and the pregnancy would be under way. At this point, or possibly even earlier, an endocrinologist *might* be called in to administer hormones to the male mother so that his hormonal status would mimic that of a pregnant woman. Finally, nine months and several thousand dollars' worth of custom-made maternity clothes later, the baby would be delivered from the man's abdomen in an operation called a laparotomy, which would be similar to a cesarean section.

There are two alternatives to this scenario. First, conception could take place in the woman's body, most likely through artificial insemination. The fertilized egg would then be flushed out of the womb and implanted in the man. This is the method used in the process called embryo transfer, when a fertilized egg is moved from one woman's womb to another's. Shettles, for one, prefers the in vitro method, however, because it allows more control.

Second, it is debatable whether hormonal treatment is needed. In January 1984, before an assemblage of sex researchers at a Kinsey Institute symposium, John Money raised the possibility of male pregnancy. He was encouraged in the discussion period afterward to hear Gorski say that the hormonal technology was sufficiently in place to carry off such a pregnancy. Today Gorski still maintains that on a hormonal level, male pregnancy is possible. But Jacobsen's baboon study indicates that priming the male with female hormones may not be necessary. "Maybe that's right," Shettles says. "It might well be that when the male gets a new inhabitant, his body adjusts."

Or perhaps the embryo/fetus is a self-sufficient alien within us. Richard Harding, a fetal physiologist at Monash University, in Australia, supports that hypothesis. "You know, on an endocrine basis, on a hormonal level, the fetus appears to be totally autonomous," Harding says. "It generates its own steroids after a certain period of time. The placenta produces a lot of the steroids that are necessary for fetal survival."

In vitro fertilization or embryo transfer, hormones or no hormones, male pregnancy is not a popular idea today in the medical establishment. "It's an outlandish proposal," says Gary Hodgen, who is the scientific director of the Eastern Virginia Medical School's Jones Institute for Reproductive Medicine, in Norfolk, the leading in vitro fertilization clinic in the United States. Hodgen's main objection to male pregnancy (he used the word *outlandish* at least five times when interviewed) is that it's tantamount to ectopic pregnancy, a life-threatening condition. "As a male, I obviously don't have a uterus, right? A male who would request the transfer of an embryo to his abdomen would be asking the medical personnel involved to advocate him taking on a life-threatening condition that wouldn't even be to the benefit of another extant person," Hodgen emphasizes. "That's antimedicine."

Dr. Jack Hallatt, an expert in abdominal pregnancy at Kaiser Permanente Medical Center, in Los Angeles, says, "There's no way doctors could avoid the dangers of hemorrhage [during the pregnancy]. And it would be catastrophic. There's no way it would willingly be attempted." Hodgen agrees that you can't eliminate the danger of male abdominal pregnancy. "Think a minute why," he says. "It's apparent. The placental sac and the baby, at term, are going to weigh on the order of twenty-five pounds. And all of the months this is growing, this bag may be twisting and turning."

Cecil Jacobsen feels that the risk posed by an abdominal pregnancy has been greatly exaggerated. The condition, he says, tends to be lumped together with the much more common ectopic pregnancy in which the fertilized egg becomes lodged in the Fallopian tubes.

"Any type of ectopic pregnancy in the tube is dangerous," Jacobsen says, "because it is a closed cavity that can't expand. But the abdominal cavity can expand. It is a risky condition, but if the pregnancy is watched carefully, the risk of death is low." Even so, Jacobsen is not anxious to be the first physician with a man/mother for a patient. "Sure, it's feasible," Jacobsen insists. "But why in heck would you do it? In my opinion it would be an abuse for males to use the technology in that way. I think the proper use of the technology would be for women who have no uterus but want to have a baby. That's where I think medicine will first do it."

Perhaps it would be an abuse of the technology to use it on men. Still, there will be men who want it. Who are they? What kind of man would have a baby? Johns Hopkins's John Money originally envisioned only one kind of person—the transsexual. "If male pregnancy ever became possible," Money says, "the first applicants would be male-to-female transsexuals, because it's so terribly important to them to experience everything a woman can experience."

They're already lining up. In July 1984 a group of at least six male-to-female trans-

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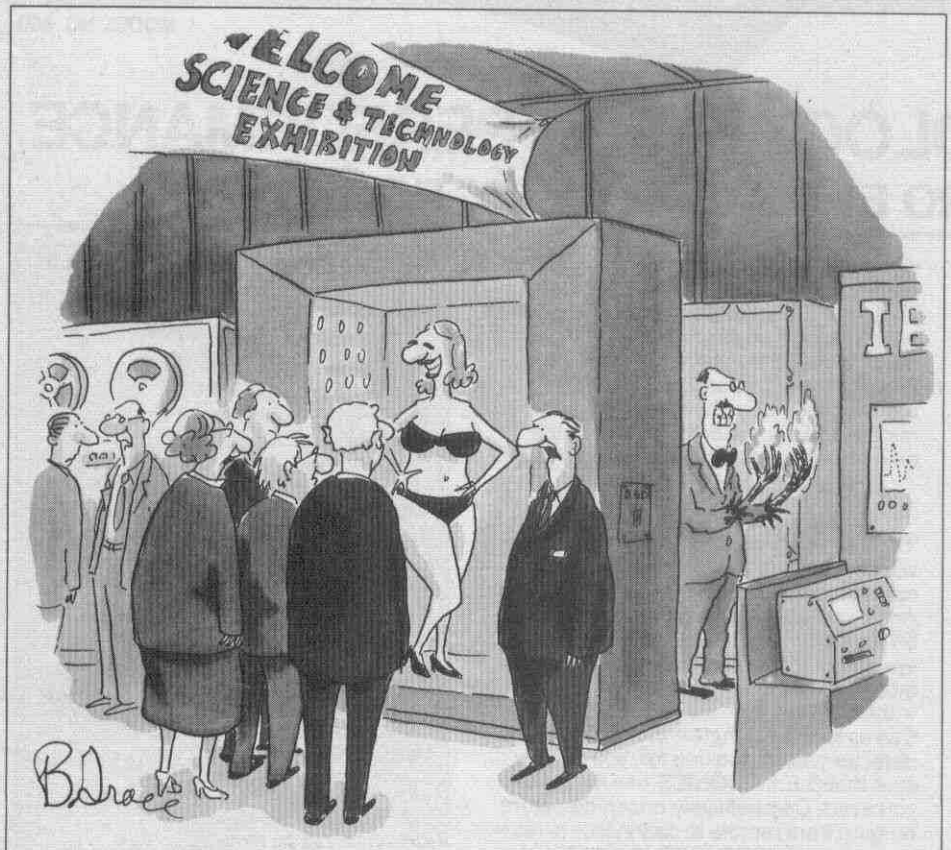

"And what appears to be a pretty girl is actually a high-energy laser holograph."

PREGNANCY

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sexuals requested admittance to the in vitro fertilization program at the Queen Victoria Medical Center, in Melbourne, Australia. They wanted to have babies. The Melbourne center turned down the request.

Garrett Oppenheim, a psychotherapist in Tappan, New York, says male pregnancy "would be the most magnificent breakthrough since the sex-change program came into effect." As director of Confide-Personal Counseling Services, Inc., Oppenheim evaluates and counsels those who apply for a sex change, to help them decide whether they should undergo the necessary hormonal treatment and surgery. There are approximately 20,000 transsexuals in the world today. "And most transsexuals want to experience womanhood in all its facets," Oppenheim says.

A social worker currently undergoing a male-to-female transformation verified Money and Oppenheim's views. "If it were possible to become impregnated and have a baby," says Jerry (a pseudonym), "I would do it, without hesitation and at all costs. I'd walk out on my man if I had to. If it came down to choosing between having a baby and staying with the man I love, I would leave the man I love and have a baby." Jerry remained undaunted by the prospect of cesarean section, but he did have one reservation about carrying a baby in the summer months "with the heat and all."

Transsexuals do have one advantage over other males. They can nurse a baby—at least according to one doctor. Dr. Leo Wollman, a Brooklyn psychiatrist who has treated 2,800 transsexuals, claims he hormonally primed one of his patients so he could breast-feed his own child. This patient had remained married to his wife after transforming from male to female. The wife was carrying their biological baby, and after she gave birth, both parents took turns nursing the baby. Wollman claims his patient had "a breast development to rival his wife's" and that he gave him a drug to induce lactation.

But men who want to have babies may not necessarily want to mimic women in every respect. They are not all transsexuals. When a tabloid erroneously reported that Monash University's Harding had transplanted mouse embryos into male mice (he hadn't) and that his research team was looking for human volunteers (it wasn't), he was deluged with letters, mostly from men. He received phone calls in his Australian lab from as far away as Alaska. Harding suspects that many of those who wanted to carry their own babies were homosexual. But others were heterosexual men who had infertile wives. Still others were single men who wanted to fulfill their need for a child. There were even letters from women who were infertile and who wondered if their husbands could carry their baby. Shettles has received similar inquiries through the years but says he has never received a call or letter from a transsexual. "The men who called seemed very normal," he recalls. "I guess they just wanted to have the experience of having a baby." Shettles was also contacted, like Harding, by men whose wives were infertile and who wanted to "take the tension off the wife."

Then, of course, there's womb envy. "If little girls want to have penises," says Dr. John Munder Ross, "boys also, at some level, want to have wombs and breasts." Ross, a psychiatrist with Cornell Medical College, cites the phenomenon of couvade syndrome, in which husbands suffer the symptoms of pregnancy—weight gain, backaches, nausea, and so on—while their wives carry the baby. "Most of the men I've analyzed during their wives' pregnancies have expressed wishes to have babies and have developed symptoms," Ross says.

In any case, when the time comes for the first embryo transfer into a man, there will be no shortage of volunteers—and no shortage of critics, either. Most researchers we talked to admitted that a huge stumbling block to male pregnancy would be ethical and moral objections. Already, the Michigan state senate is sponsoring a study to assess its citizens' attitudes toward new birth technologies, including male pregnancy. Presumably, not everyone in Grand Rapids will be overjoyed with the idea of men in maternity clothes shopping for nursing bras.

"Scientists doing work on the cutting edge of human reproduction were deluged with letters from men who wanted to experience the joys of pregnancy."

But how do feminists feel? Do they see male pregnancy as their chance to escape biological destiny?

Gloria Steinem, for one, believes that pregnancy could make men less violent. "Giving birth has made women value life more," says Steinem, an editor and cofounder of *Ms.* magazine, "and we are far less violent by all measures."

Flo Kennedy, the black feminist who popularized the slogan "If men could get pregnant, abortion would be a sacrament," also saw a benefit: "Certainly this is an opportunity for a woman to have a leg up, if she's got brains enough and guts enough to take advantage of it. She should take a rest and let the man do the work. It's a possible step toward women gaining on men, at least in terms of cocktail-party jokes."

But serious doubts remain. In the Seventies feminists were fond of the slogan "A woman without a man is like a fish without a bicycle." Now with male pregnancy on the horizon, Steinem suspects the tables may be turned. "I have a small, nagging fear," she confides, "that if we women lose our cartel on giving birth, we could be even more dispensable than we already are."

An admission: We never wanted to write this article. It was the result of a casual comment about John Money's work, unwittingly uttered at an editorial meeting. Our editors were as skeptical as we were but asked us to at least explore the idea. We took the assignment with the assumption that after a few phone calls and a couple of library searches we could honestly report back that there was no real future in, or scientific basis for, male pregnancy. We were wrong. Some important researchers convinced us the idea was altogether feasible.

Granted, many more animal studies are needed to assess the practicality of male pregnancy. As far as endocrinology is concerned, what little research has been done casts serious doubts on our current understanding of the roles of so-called female hormones and what kind of hormonal priming a man would need to support childbirth. And the treatment of abdominal pregnancy must be refined before a fertilized egg can be safely implanted in a man's omentum.

Then again, perhaps some renegade will just go ahead and do it.

In the early Seventies, Landrum Shettles was conducting pioneer work in in vitro fertilization at Columbia–Presbyterian Medical Center, in New York City, when his boss told him to discontinue his research, ordered that the test-tube culture Shettles had produced be destroyed, and finally, in 1973, fired him. Perhaps because of this attitude, both England and Australia produced test-tube babies well before America did. Ironically, two years ago Columbia–Presbyterian began its own in vitro clinic, a decade after destroying Shettles's culture. The point is that supposedly crazy, irresponsible ideas are often warmly embraced ten years after they're introduced—often by the same people who condemned them originally.

We asked Shettles, who now runs his own clinic in Las Vegas, to estimate when the first human male pregnancy would take place. As a preface to giving us an answer, Shettles pointed out that a former colleague of his, Dr. John Rock, stated in a medical journal in 1958 that the time had come for in vitro technology. But it took a full 20 years before England's Patrick Steptoe and Robert Edwards actually produced a baby. As for male pregnancy, Shettles says, "I don't think it's going to take as long as it did with the in vitro program. I think anyone who really wanted to get on with it now could achieve success." And *who* will do it?

"I think it would be really funny if the Australians, who have an international reputation for being the macho men of the world, were the first to achieve a male pregnancy," Shettles says. "I wouldn't be surprised."