

DEVELOPING HALAKHIC ATTITUDES TO SEX PRESELECTION

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The Jewish textual heritage handed down to us reveals that the modern interest in influencing the sex of one's offspring is at least as old as the *halakhah* itself. While even the theory behind most of the current birth technologies could not have been contemplated two thousand years ago, potential ways to affect the sex of children were discussed in detail. Indeed, though rudimentary techniques for artificial insemination by donor (A.I.D.), *in vitro* fertilization (I.V.F.), or genetic screening could scarcely have been pondered, sex preselection¹ was the subject of rich and ingenious proposals. In fact it is reasonable to assert that in Jewish terms the sex preselection debate does not require us to seek tangential antecedents of questionable relevance, for our ancestors seem to have understood well the implications of sex preselection in their day and were able to advocate a variety of "practical" procedures in its pursuit.

It is possible to gain a more complete perspective of the context in which rabbinic thought on these matters evolved by giving some consideration to the range of creative methods for sex preselection that have been promoted in many cultures through much of recorded history. Biological methods, for example, included those of the Greek philosopher Anaxagoras (500 to 428 B.C.E.) who held that males originated from the sperm of the right testicle, and postulated that the left one should be tied off just prior to copulation.² Dietetic theories included the advice given to women in the middle ages that if they wanted to bear a boy they should "drink a concoction of wine and lion's blood (in proper proportions) and then copulate under a full moon while an abbot prayed for a boy."³ Symbolic interventions included such counsel as "a man should take an axe to bed with a woman while singing a prescribed song (Spessart Mountains of Germany); a young boy should be present in bed during intercourse (Yugoslavia); and the man should bite the woman's right ear before his orgasm (Italian Province of Modena)."⁴

Given this pre-modern background - which almost invariably provided ideas as to how to have a boy - the eagerness exhibited in the Talmud for male offspring becomes far more understandable. For though

the *halakhah* clearly follows the outlook of *Beit Hillel* that one has only fulfilled the commandment "to be fruitful and multiply" after one has had both a boy *and* a girl, still the Talmud declares that "[t]he world cannot exist without males and without females - happy is he whose children are males, and woe to him whose children are females."⁵ While this view is wholly consistent with the patriarchal environment in which the rabbis lived, the economic considerations of an agricultural society, combined with the expectation of the need to amass dowries for daughters, must have provided cogent incentives for employing all possible means to have male children.

Although the Talmudic wisdom for attaining such male descendants is not quite as exotic as that recommended in the aforementioned instances, it certainly contains some original propositions. Rabbi Yitzhak in *Berakhot* 5b - grounding his advice in a word-play that arises in Psalm 17 - suggests that appropriate orientation of one's bed in a north-south direction will produce the desired outcome of a male child: "*kol hanotein mitato bein tzafon ledarom, havyan leih banim zekharim.*"⁶ Rabbi Eliezer and Rabbi Yehoshua in *Baba Batra* 10b take a more social approach to the question of "what is a man to do in order that he may have male offspring?" Rabbi Eliezer opines that giving *tzedakah* to the poor is the best route, while Rabbi Yehoshua espouses that a man make his wife happily disposed toward the performance of the *mitzvah* of cohabitation: "*Rabbi Eliezer omer, 'yefazer meiotav la-aniyim.' Rabbi Yehoshua omer, 'yismakh ishto lidvar mitzvah.'*" The counsel of Tractate *Kallah* goes even a step further than Rabbi Eliezer in declaring, "one who wishes his children to be male and masters of the Torah should examine his actions and woo his wife at the time of intercourse."⁷

Rabbi Yohanan in *Shevuot* 18b offers both a biological and a symbolic solution to the quest for a boy, based on textual contiguities within the Torah itself. He first posits that abstention from intercourse immediately prior to menstruation will result in a male: "*kol haporeish meishto samukh levistah, havyan lo banim zekharim.*" Rabbi Yohanan

arrives at this conclusion because the proximity of the Toraitic statements "...to make a separation between the unclean and the clean..." (Leviticus 11:47) and "...if a woman brings forth seed and bears a male child..." (Leviticus 12:2) leads him to the view that a clear separation between clean and unclean sexual practices will result in a boy. Using the same methodology, Rabbi Yohanan next submits that anybody who conducts the ceremony of *havdalah* over wine on *motzei Shabbat* will produce male issue. This rather hopeful prescription is based on the observation that the words of *havdalah*, "...to make a separation between the holy and the ordinary..." (Leviticus 10:10), together with the words, "...and between the unclean and the clean" (Leviticus 10:10 and 11:47) are also in the vicinity of Leviticus 12:2, and hence the observance of *havdalah* is connected to male births.

On the same Talmudic page, Rabbi Elazar employs the identical hermeneutic device to demonstrate that male offspring are dependent on the sanctity with which intercourse is performed. Rabbi Elazar understands the proximity of the words "...sanctify yourselves therefore, and be holy..." (Leviticus 11:44) to the words of Leviticus 12:2, to imply that sanctification will indeed lead to the birth of males. A view given in the name of Rabbi Yehoshua ben Chananiah in *Niddah* 70b-71a goes even further than Rabbi Elazar, maintaining that realizing the preferred sex is dependent on the suitability of the marital union as well as the sanctified nature of the intercourse: "*amar lahem, yisa isha hahogenet lo viyikadeish atzmo bish-at tashmish.*" In both cases Rashi interprets the "sanctity" concerned as referring to the appropriate modesty - *tzniut* - of the intercourse itself.

Perhaps the most interesting aspect of *Niddah* 70b-71a is that it represents the one instance wherein a healthy skepticism as to the effectiveness of the proposed methodology is evidenced in the Talmud. Following Rabbi Yehoshua ben Hananiah's recommendation the text continues "[d]id not many, they said to him, act in this manner but it did not avail them?" Tacitly accepting the merit of the challenge, the rabbis

advance the alternative that a man should both pray to God and contain himself during the time of intercourse in order to allow his wife to "bring forth seed" first.

This last piece of advice forms the core of the most substantive Talmudic tract on sex preselection. *Niddah* 31a-b offers the following insight:

Rabbi Isaac, citing Rabbi Ammi, stated: If the woman emits her seed first she bears a male child; if the man emits his seed first she bears a female child; for it is said, "If a woman emits and bears a man-child." [Leviticus 12:2] Our Rabbis taught: At first it used to be said that "if the woman emits her seed first she will bear a male, and if the man emits his semen first she will bear a female", but the Sages did not explain the reason, until Rabbi Zadok came and explained it: "These are the sons of Leah, whom she bore unto Jacob in Paddan-aram, with his daughter Dinah" [Genesis 46:15], Scripture thus ascribes the males to the females [i.e., sons of Leah] and the females to the males [i.e., his daughter Dinah].

"And the sons of Ulam were mighty men of valour, archers; and had many sons, and sons' sons" [I Chronicles 8:40]. Now is it within the power of man to increase the number of "sons and sons' sons"? But the fact is that because they contained themselves during intercourse, in order that their wives should emit their seed first, so that their children shall be males, Scripture attributes to them the same merit as if they had themselves caused the increase of the number of their sons and sons' sons. This explains what Rabbi Kattina said, "I could make all my children to be males."

Though there is some suggestion that the female "seed" mentioned could refer to ovulation, it seems far more likely that orgasm is intended. Thus the Talmudic exhortation here is that if the man will delay his orgasm so that his wife's orgasm may precede his, male children will follow.⁸ R. Kattina - according to the Talmud's report - apparently utilized this technique of self-restraint with great success. Immediately after this section, the Talmud quotes Rava's recommendation that "he who desires all his children to be males should cohabit twice in succession." Rashi's observation that when intercourse is repeated the woman will definitely "emit seed first," probably alludes to the post-coital delay for most men to achieve orgasm a second time. Moreover, just as Rashi's comment here is experimentally verifiable, so the advice of this important Talmudic passage indeed possesses contemporary scientific validity. Dr. Fred Rosner comments, "We know that orgasm increases the flow of alkaline secretions, which would also enhance the activity of the male-producing sperm."⁹

Nevertheless, as befits the rabbinic world-view, Talmudic prescriptions for sex preselection techniques are clearly based far more in the discoveries of textual exegesis than in those of pure science. The rabbis must have been aware from experience that while their proposals would have worked well hermeneutically, they surely met with mixed results when actually put to the test. What is striking, however, is that there seems to be no vocal opposition on the part of the rabbis to the conceptual notion of intervening to affect the sex of offspring. We can only speculate as to whether the rabbis' apparent comfort in this area stems from an acknowledgement that their enthusiastic advice would do little harm to God's plans, since their guidance - though certainly symbolically significant - could scarcely be depended upon consistently to produce the chosen outcome.

CONTEMPORARY EFFICIENT METHODS THROUGH A
TRADITIONAL LENS

The question that goes unanswered by the classic sources is, would Jewish tradition be quite so encouraging if sex preselection techniques of an efficient scientific rather than an uncertain textual nature were utilized? The term "efficient" in this context is used to refer to those technologies that can legitimately aspire to reliability rates of 100 percent, while the term "uncertain" refers to those methods which - while somewhat effective - will always leave room for doubt over the outcome.

Contemporary scientific knowledge provides several options for choosing a child's sex which offer a degree of certainty that could prove to be far more enticing than rabbinic methods. Setting aside the reprehensible practice of abortions for sex selection purposes, which - on any view of the *halakhah* - are totally unacceptable,¹⁰ alternative procedures are now available which show constantly improving measures of success. In the last two decades, advances have made both pre- and post-conceptive selection methods possible. One post-conceptive technique - yet to gain any widespread acceptance - would afford a virtually assured outcome by combining genetic testing with I.V.F. to ascertain that the four-cell embryo to be implanted in the womb is indeed of the chosen sex.¹¹ It is hard to imagine, however, that the invasive procedures required to procure eggs from the woman's body, combined with the relatively low overall efficiency of I.V.F., would make this a particularly popular technique for sex selection amongst the vast majority of couples who have no need for I.V.F..

It is, therefore, the pre-conceptive technique of sperm separation which is more commonly embraced despite its lower success rate. In this procedure, sperm obtained from the male is separated in the laboratory into androsperm (male-bearing) and gynosperm (female-bearing), whereupon the desired sperm type is introduced into the woman using artificial insemination by husband (A.I.H.). With a success rate reported from 75 to 95 percent,¹² this method is unquestionably effective, it is certainly a

simpler procedure than the one employing I.V.F., and it allows for "natural" rather than engineered conception. There is every reason to believe that its efficiency will continue to improve - approaching 100 percent - as the technology evolves. It is on the assumption of its attaining complete reliability that it is herein classified as an "efficient" technique. At least seventy clinics across the United States, and a similar number worldwide, now offer such sperm separation,¹³ and its cost certainly seems in reach of most couples.¹⁴

Indeed the spread of this procedure correlates well with the strong statistical evidence that "acceptance of preconceptive sex selection among both potential users and potential practitioners in the United States has increased dramatically in recent years."¹⁵ Hence it seems reasonable to posit that as the availability of - and interest in - reliable sex preselection methods grows, there will be more and more couples who will want to ensure that their choice of the child's sex is realized. A good number of them will do so by using these ever more widely accessible scientific methods.

Those who express nervousness about allowing couples to venture down this path often invoke the argument that sex preselection is a subsection of the general category of trait selection, and that permitting unfettered choice for sex is no different from allowing genetic engineering for a wide variety of traits. While this "slippery slope" position does raise some concerns, there would seem to be ample reason to consider sex preselection as a separate case, and not simply to regard it as part of the genetic engineering debate for Jewish legal purposes. First, there is an intrinsic qualitative difference between playing a part in the decision as to which sperm and egg will meet - as is the case in most sex preselection methods - and actually altering the internal structure of the genetic material itself, as is required for the determination of other traits. Second, within the medical field, a distinction has now been drawn between these two areas. The clear evidence for this is the fact that "sex preselection" has been given its own heading in the *Cumulated Index Medicus*, after long having been

subsumed under "genetic engineering." This is telling because it is the custom of *Index Medicus* to have rubrics "follow - rather than anticipate - the usage in the literature."¹⁶ Third, while the notion of sex preselection has historically been ardently pursued, the same cannot be said of genetic experimentation, thus suggesting a fundamental attitudinal difference towards the two concepts.¹⁷

The final reason why sex preselection should not be treated as a sub-set of genetic trait selection for purposes of *halakhic* consideration is that, though both entail the choosing of characteristics, the *halakhic* issues involved are vastly different. In matters of genetic engineering, the *halakhic* exchange - yet to be crystallized into a definitive stance - is over the question of whether or not genetic engineering will be held to be permissible at all, and, if so, under what circumstances. Furthermore, the focus of the discussion is clearly on the medical applications of genetic engineering to help alleviate disease, ameliorate suffering or prolong life. If anything, the suggestion that parents should be able to pick their offspring's physical or behavioral traits based upon some utopian vision of the child's future, meets with grave *halakhic* concern and strong resistance.¹⁸

Quite the contrary is true when it comes to *halakhic* deliberations on sex preselection. Here the discussion is not as to whether or not sex preselection is permissible, for there is no serious *halakhic* objection raised to the concept itself. Instead, the sex preselection conversation centers around which particular methods are *halakhically* allowable. Nor does the discussion highlight potential medical benefits which might accrue to some families by preventing inherited diseases that are only passed to one sex or the other, but rather it fully anticipates sex preselection based on nothing more than parental desire.¹⁹ In the *halakhic* mind-set, sex preselection and genetic engineering are altogether divergent subjects.

Rabbi J. David Bleich makes this distinction absolutely explicit for the traditional *halakhist* when he avers that "[t]he primary *halakhic* concern is not with regard to the decision to engage in sex preselection but

with the method to be employed in effecting sex determination."²⁰ Indeed while Bleich points to substantive problems for the traditional *halakhist* with current sex preselection techniques, the issues he raises are procedural, not theoretical. There is no hint of a philosophical concern with efficient scientific sex preselection procedures. In fact Bleich devotes considerable attention to matters surrounding the - presently hypothetical - assumption that a "*halakhically* non-objectionable technique could be found." He goes to some lengths to show that given this possible eventuality, traditional couples would not be obligated to use such a method in order to fulfill the *halakhic* stipulation of *Beit Hillel* to have both a boy and a girl. Natural procreation would remain the preferred norm without "heroic measures" being expected to satisfy *Beit Hillel*.²¹

Significantly, at no point does Bleich assert that the use of a non-objectionable sex preselection technique should be forbidden. Although he might not encourage it, and although he delineates possible societal implications which would raise *halakhic* apprehension, and although he postulates that "[s]ociety would find ample justification in the teachings of Judaism for discouraging widespread sex preselection," still he does not conceptually rule out well-controlled sex preselection utilizing a *halakhically* approved method.

It is obvious, however, that for the traditionalist there are specific difficulties with the techniques which are presently being advanced. When considering the method employing I.V.F., traditional approaches to the *halakhah* absolutely reject this process for purposes of sex selection, in light of the fact that *in vivo* fertilization is seen to be *halakhically* required whenever possible. This position is supported by the prerequisite of various authorities who prescribe differing lengthy waiting periods - ranging upwards from two years - after marriage, before use of I.V.F. is condoned.²² Hence it might be stated succinctly that I.V.F. is only traditionally acceptable as a medical aid to help those who are unable to conceive by other means.

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While conception via the sperm separation procedure is, of course, *in vivo*, the traditional *halakhist* has an objection to this method as well. The opposition pertains to the "partial" A.I.H. used in this procedure. It is well known that A.I.H. is permitted by most *posqim*, even though, again, it is not contemplated unless medically indicated.²³ Just as for I.V.F., contemporary authorities only endorse A.I.H. after waiting periods - following marriage - that range from two to ten years, in order to establish its medical necessity.²⁴ Consequently, only couples with a history of fertility problems would be eligible for this technique. A.I.H. is, moreover, sanctioned solely on the basis that all of the husband's ejaculate is inseminated into the woman, with none of the sperm being discarded prior to the fertilization process. However, in the context of the sex preselection practice of separating sperm, it is, of course, the intention that only the androsperm *or* the gynospem will be deposited in the woman, but not both. Since the resultant discarding of the remaining sperm would - for the traditional *halakhist* - constitute *hash-hatat zera*, wanton destruction of seed, this procedure cannot be countenanced by the traditionalist for anybody.²⁵

CONTEMPORARY EFFICIENT METHODS THROUGH A PROGRESSIVE LENS

The position of the traditional *posqim* with regard to sex preselection is, therefore, clear, but what is the stance of progressive *halakhah*? Does a progressive approach mirror the philosophic tolerance towards sex preselection, combined with the actual rejection of prevailing methods, which characterizes the traditional outlook? How do such fundamental principles of progressive *halakhah* like *qedushah* and individual conscience,²⁶ or values such as gender equality, influence progressive attitudes to these issues?

The only Reform responsum which deals directly with the subject of sex preselection is that published in the name of Rabbi Israel Bettan and the responsa committee in 1941. Bettan is asked to respond to the

question, "...As the aim of scientific predetermination is not to limit families in any way, but to increase their happiness through having the sex they most desire, what does your group think on the subject?"²⁷ After a survey of the relevant *halakhic* literature, Bettan first describes his view of the Talmudic precedents, and then the appropriate modern reaction, in these terms:

...Of course, all these suggestions partake more of the nature of magic than of pure science. But whatever the value of the methods suggested, they are certainly "moral, simple and safe," even though not quite effective. Above all, they clearly indicate the Rabbinic attitude toward the question raised. The desire of parents to predetermine, if possible, the sex of their progeny, is not a reprehensible desire. The objective sought is a legitimate objective. The issue then resolves itself into this: Will the absolutely reliable method anticipated, though not too hopefully, by the author of the question, be as moral, as simple, and as safe as those projected by the early Rabbinic authorities? Judaism, it is well to state here emphatically, is not a religion that teaches the doctrine that the end justifies the means. In this case, therefore, if the means, yet to be discovered, will prove scientifically sound and morally unassailable, the Jewish teachers of that far-off day will find ample basis for their endorsement of the enterprise in the thought and tradition of their past.

Manifestly, "that far-off day," which Bettan seems to regard as the stuff of science fiction, has already arrived - scarcely a half a century after he penned his responsum. Still, Bettan's prescription for the progressive "Jewish teachers" of this brave new reproductive world is plain: provided the methods used are "scientifically sound, moral, simple and safe," then there is "ample basis" for endorsement of such preselection practice, since it is certainly not a "reprehensible desire," but is an absolutely "legitimate

objective." Bettan, then, is not only philosophically tolerant of sex preselection, but takes a position of support bordering on advocacy. In this respect, Bettan is prepared to go considerably further than the traditionalist, and when it comes to methodological concerns, his litmus test is decidedly unlike theirs. For Bettan is not so much interested in whether potential new techniques will conform with the rigorous precepts of the oral law, as he is insistent that they should meet some - undefined - general standards of scientific and moral probity.

Judged by these criteria, while the I.V.F. method would, in all likelihood, be rejected on the grounds of simplicity and safety, it is difficult to see why the sperm separation procedure would not comply with Bettan's requirements. Though it presently falls short of perfection, it is certainly scientifically sound, it is relatively simple, it is safe, and - in view of the fact that it is purely the husband's sperm that is being used - it would seem to be moral according to most contemporary views of morality. Even if questions were to be raised about the Jewish moral acceptability of wasting seed, or of employing A.I.H. for non-medical purposes, nothing in the Reform responsa currently on record would undergird such objections. In fact, Rabbi Walter Jacob's 1979 responsum on masturbation concludes, "[m]asturbation should be discouraged, but we would not consider it harmful or sinful."²⁸ If masturbation - which is the "wasting" of seed for wholly narcissistic ends - is not sinful, then it can certainly be surmised that the "wasting" of seed in pursuit of a "legitimate objective" would endure no moral censure. Moreover, while A.I.H. for non-medical purposes is not specifically addressed in the Reform responsa, there seems little from a Reform viewpoint which would justify an "immoral" designation being applied, given that the sperm procurement process would apparently be untainted, a consenting married couple would be involved, and a "legitimate objective" would be sought. In short, Bettan's standards for permitting sex preselection would appear to be well met by the sperm separation technique, and provide credence for the view that a positive ruling should be given to progressive Jews to proceed with this method as a Jewishly approved sex preselection procedure.

CRITIQUING CURRENT *HALAKHIC* ATTITUDES
TO EFFICIENT METHODS

It would be worthwhile, however, before Bettan's responsum becomes the pretext for an unbridled acceptance of sperm separation sex preselection, to examine whether his criteria in fact address all current Jewish concerns over this practice. For, having arrived at Bettan's "far-off day," the methodology now available forces serious consideration as to whether scientific soundness, morality, simplicity and safety, ought to be the sole critical Jewish specifications for evaluating current sex preselection realities.

One area which goes unexplored by Bettan and certainly has global implications is the issue of the potential societal impact of efficient, unchecked sex preselection methods. There is disagreement among scholars who study the developed countries as to the chances of such techniques leading to a significant gender imbalance in the first world. There are those who maintain that studies of peoples' preferences in the U.S. suggest that the age-old cross-cultural desire for male offspring has waned little, and that if sex preselection were to become popular it would either lead to an over-supply of males, or at least to a much higher preponderance of first-born males.²⁹ On the other hand, some researchers point to findings which show that couples' chief interest is in achieving a gender balance within their families. They further hold that the rate of commitment to sex preselection, to planned pregnancy, to effective contraceptive use, and to actually requesting males when using such techniques, would all have to be far higher than is probable in order to produce any socially deleterious results.³⁰ In relation to the third world, however, where the cultural value of having a male child is often overwhelming, sex selection abortions and other practices have already led to skewed gender ratios.³¹ It must be assumed that this would be exacerbated by the ready availability of techniques such as sperm separation.

From the perspective of progressive Judaism, insofar as real societal gender imbalances could be demonstrated, the effect would be an undermining of the acceptability of efficient sex preselection procedures. If indeed couples were to produce a meaningfully greater number of males than females, and *if* the corollary of that outcome was in fact a lack of marriage partners, or increased prostitution, violence and rape, then certainly a progressive Jewish outlook could not be tolerant of the resultant social turmoil. In any society in which this was the threatened consequence of sex preselection, progressive Judaism would take a dim view of the practice. Moreover, if it could be shown that efficient sex preselection produced a higher rate of first-born males, and if it could also be established that first-born offspring tend to be more dominant in a given population, then progressive Judaism's unswerving dedication to gender equality would call for a swift rejection of such procedures.

There are, of course, those who see potential societal benefits flowing from effective sex preselection. They argue that the plentiful number of sex selection abortions that take place from the first world to the third would be substantially reduced by easily accessible sex preselection.³² While there is no doubt that progressive Judaism would have a preference for sex preselection procedures over abortions, this does not necessarily raise sex preselection to the level of being a desideratum. Nor does the other possible beneficial outcome, that of limiting population expansion - by delivering to parents the sex of their choice without the need for retrying - make sex preselection anything more than a quick cure for ills that better education and heightened prosperity must ultimately address. In any case, while Jews certainly have concerns about the population explosion in various parts of the world, Jewish numbers today are only 75 percent of what they were in 1939, so the *halakhic* advice given to Jews should definitely not include using sex selection to help restrict the need for multiple children. Indeed Reform Judaism is on record as counting it a *mitzvah* "...to consider the matter of family size carefully and with due regard to the problem of Jewish survival."³³

As Bettan points out, progressive Jews do not believe that the "end justifies the means," and hence the worthy goal of seeking to diminish sex selection abortions or confine overly large populations does not *ipso facto* bestow blessing on sex preselection. Progressive Judaism, therefore, would not be tolerant of any sex preselection measures which would lead to either dramatic societal disturbance or subtle subjugation of females or males. In this respect, progressive Judaism would find itself in complete agreement with the traditionalist view that "tampering with natural processes in a manner which would lead to social upheaval and unrest is contrary to the public policy advocated by Jewish teaching."³⁴

Even if, however, no appreciable untoward societal effects were to be forthcoming, there are other Jewish ideals which could propel progressive Jews to temper approval of sperm separation sex preselection. *Qedushah* is one such mandate. It is clear that the technique of sperm separation unavoidably breaks the nexus between conception and marital sexual intercourse. For if sperm separation is to be successful as a sex preselection method, intercourse must take place without conception, and conception must take place without intercourse. But Reform Judaism has pronounced marital intercourse to be a cherished *mitzvah*: "It is a *mitzvah* for a man and a woman, joined together in *Qiddushin*, to take pleasure in sexual union..."³⁵ Indeed the *qedushah* which flows from this *mitzvah* is made absolutely lucid by the words of Nachmanides' *Iggeret Ha-Qodesh* which are quoted in the same Reform text: "Intercourse is a holy and pure thing when done in an appropriate way, in an appropriate time, and with appropriate intention..."³⁶ There is, moreover, no doubt that progressive Judaism would also fully endorse what Ramban has to say in the continuation of the same letter:

The union of man with his wife, when it is proper, is the mystery of the foundation of the world and civilization. Through this act they become partners with God in the work of creation. This is the mystery of what the sages said, "When a man unites with his wife in holiness, the

Shekinah is between them in the mystery of man and woman." This is the meaning of "Before you came forth out of the womb, I sanctified you" (Jeremiah 1:5).³⁷

Progressive Judaism then, concurs with the historic Jewish position that there is something holy about the process of conceiving children within the context of marital sexuality. A child not conceived in this manner is, of course, in no way deficient in holiness. Rather, it is the act which is central to holiness, and progressive Judaism explicitly separates out marital intercourse as its most venerated and sanctified path for the production of children. Quite simply, it is the hallowed ideal. Seen in this light, the use of sperm separation and A.I.H. for the purposes of conception - even once - can only be viewed as an unnecessary diminution of the sublime sanctity and *qedushah* that accompanies marital union. When no other medical interest is at stake,³⁸ progressive Judaism would hardly be anxious to give its assent to procedures that place the value of sex preselection above that of marital sexual conception, no matter how infrequently. The sex preselection procedure of sperm separation would logically be unsuitable for progressive Jews on this basis.

It can be contended, therefore, that contemporary progressive Judaism would want to modify Bettan's criteria in order to ensure that no societal instability, gender inequality, or decrease in conception through marital intercourse, would be the result of any approved sex preselection techniques. But it is not, of course, difficult to imagine circumstances under which these conditions might well be satisfied. Couples in a given society might certainly choose to have girls as often as boys - even as a first child; and a highly effective sex-specific spermicide or pill³⁹ might conceivably become available that would effect the operation of either the androsperm or gynosperm so that sex preselection and marital sexual intercourse could simultaneously proceed. Under such circumstances - if both the social and symbolic concerns discussed were to be removed - would sex preselection be authorized for purposes of actual Jewish conduct?

Up until this point, though highlighting different pivotal values, the traditional and the progressive attitudes to the extant methodologies have - in practice - coincided. Both express philosophic approval of efficient scientific techniques for sex preselection, but demur at the current technological offerings. But when it comes to the question of a possible sex preselection procedure that is able to deal with the reservations already expressed, there are reasonable grounds to believe that the two approaches might well part company.

From the traditionalist viewpoint, it is not easy to see strenuous *halakhic* objections being raised to a sex preselection spermicide or pill, provided that the targeted sperm were not destroyed, but were chemically changed to negate their ability to fertilize the ovum. A case could sensibly be constructed based on the *halakhic* attitude to contraception. The *halakhah* broadly permits contraception in instances where pregnancy would pose a danger to the woman.⁴⁰ Indeed, there are even more radical views that would allow contraception if there was a threat of extreme pain to her, or concern for the well-being of her existing children.⁴¹ The permission for the use of contraception by women who are at risk is based on an intensively debated reading of the classic Talmudic source and of what it requires of women who are in certain hazardous categories. Moreover - when it comes to the choice of a contraceptive method - there are certainly authorities who would sanction the use of agents to alter the sperm chemically, so long as its physical progress is not impeded. They see no *hash-hatat zera* involved, nor - since sexual intercourse proceeds in the natural manner - is there any sense of *hotza'at zera levatalah*, emission of seed in vain. Spermicides and pills, therefore, are allowed, but only if the woman is in one of the categories of extremis delineated; otherwise the commandments to "be fruitful and multiply" and to populate the world would apply.⁴²

It seems cogent then that a number of traditional *posqim* would probably approve of sex preselection spermicides or pills, by virtue of a comparison with the albeit limited consent given to contraception. After

all, the *posqim* generally provide authorization to women who are in specific vulnerable categories to use contraceptive spermicides or pills. But those who give consent do so despite the fact that the proper understanding of the pivotal text is disputed, and it is unclear whether the Talmud intends to permit contraception for women who are at risk or not. It follows then that sex preselection aids, which are utilized in a similar fashion, should be acceptable for all couples, given the Talmud's repeated unambiguous approval of sex preselection for all. There would be no *hashchatat zera* entailed, nor would there be *hotza'at zera levatalah*, especially given that conception would be entirely possible within the context of regular marital sexual intercourse. Even while using the spermicide or pill the couple would be continuing in their endeavor to "be fruitful and multiply" and to populate the world. Such spermicides or pills - it could well be expected - would be found to be unobjectionable from the perspective of a number of traditional arbiters of the oral law.

Within progressive Judaism, on the other hand, even the removal of societal and symbolic concerns would still leave critical issues to be confronted. For one of the central principles of a progressive approach to *halakhah* is the acknowledgement that *halakhah*, correctly apprehended, is a changing and developing entity.⁴³ This is not to suggest that any change is possible within the *halakhah*, for several other principles painstakingly restrict the license to change. But it does imply that when wholly new circumstances arise, there is sometimes a need for the reevaluation of conventionally accepted *halakhic* outlooks in order to provide a legal, ethical, and spiritual framework that can continue to respond appropriately.

The progressive Jew would, in all probability, view contemporary efficient sex preselection procedures as an example of such wholly new conditions. For the mere contemplation of sex preselection methods that could provide an assured outcome was a far-distant fantasy for Bettan in the 1940's, let alone for the sages of the rabbinic era. As a consequence, the *halakhic* precedents on record all undoubtedly must have assumed that sex preselection methods would always fail sufficiently often to leave

healthy room for doubt as to the outcome of their use. However, as has been elucidated, some of today's methods - and those mooted for the future - leave no such room for doubt. This truly represents a new power to control elements of human destiny which the rulings of our ancestors never sought to anticipate.

This novel ability to order the sex of our children with absolute confidence as to the result, challenges the progressive Jew to answer vital questions: What, if any, limits ought to be placed on our autonomy when it comes to the matter of gratifying our - legally authorized - desires? Does the emphasis on autonomy admit the possibility of restricting one's individual yearnings in the name of a greater "spiritual" good? Are children commodities to be conceptually fashioned by us and requisitioned to specifications, even if just in the matter of their sex? At what point do we say "no" to our technological selves? Does the "technological imperative" apply, intimating that every technology that is developed must *ipso facto* be used?

There exists a special mandate for progressive Jews to respond to these inquiries that touch upon the spiritual values which lie at the core of the *halakhic* system. That is not to say that traditional Jews might not wrestle with these same problems with equal competence, but the character of progressive Jewish thinking about *halakhic* matters *demand*s that these topics be faced by the progressive Jew in a manner which the oral law does not expect of the traditional Jew.

Perhaps, then, progressive Jews might frame the fundamental spiritual concern over efficient sex preselection in this way: Jews are well aware that there is a profound difference between the Shabbat and the other six days of the week. One of the most significant features of the Shabbat is that it is the one day on which Jews do not seek to demonstrate human technological mastery over the world. There are technologies at hand which - in the name of a higher spiritual ideal - Jews elect not to use during that twenty five hour period. Maybe it ought to be pondered as to whether the

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Shabbat - in this respect - provides a useful analogy for the broader human experience. In a civilization which assumes an ever-increasing technological mastery over the parameters of life itself, is there a point at which a "technological Shabbat" should be proclaimed? Is there a moment when - in the name of a higher spiritual ideal - a choice should be made not to use some of the technologies that are now at our disposal?

After due consideration of these issues, the progressive Jew might well take the path of discouraging efficient sex preselection methods as representing a level of certainty which it is metaphysically undesirable for humans to command. By so doing, progressive Jews would eloquently express a preference for an approach to *halakhic* values that applauds the technology of modernity, and yet voluntarily preserves elements of life's mystery.

DISTINCTIONS BETWEEN EFFICIENT AND UNCERTAIN SEX PRESELECTION METHODS

If, then, these efficient techniques, which hold out the promise of certainty, would meet with varying degrees of Jewish opposition, the remaining issue to be explored concerns whether uncertain techniques - which cannot aspire to 100 percent success - would encounter the same reaction. Two popular age-old areas of interest have recently been revived in modern versions, with attainment rates that have aroused interest. First, a new dietetic method has found contemporary proponents: The diet suggests that in order to achieve a girl one should consume no salty foods, but can have dairy and fruit. The diet for a boy is the reverse, requiring plenty of salt rich foods "such as ham and bacon," with certain fruits and vegetables, but "shellfish and nuts are out." In two studies using such diets, 39 out of 47 conceiving couples achieved their desired choice in one sample, and 27 out of 31 in the other, thereby reaching success levels above 80 percent.⁴⁴ Given that a Jew could make some food substitutions in the regimen, would Judaism sanction such dietetic sex preselection practices?

The second area of interest that has resurfaced is actually a conglomerate of measures surrounding the timing and nature of intercourse. The most well-known advocate of this amalgam of techniques is Dr. L. Shettles who, gaining insight for some of his ideas from the Orthodox Jewish community⁴⁵, proposed the following: In order to obtain a girl, intercourse should be frequent up until two to three days before ovulation at which time it should cease, intercourse should immediately be preceded by an acidic douche, the woman should try to avoid orgasm, the missionary position should be assumed during intercourse, and shallow penetration should be attempted by the man. In order to obtain a boy, intercourse should be avoided from the beginning of the monthly cycle until ovulation and should take place as close to ovulation as possible, intercourse should be preceded by an alkaline douche, the woman should try to achieve orgasm - preferably prior to her husband - and deep penetration from the rear is advised. When there is faithful adherence to these procedures Shettles claims a success rate that is above 80 percent.⁴⁶ Given that the laws of *niddah* could be accommodated - which will not always be the case - would Jewish attitudes permit these and similar timing/environmental sex preselection practices?

The actual reliability of both these strategies has been called into question, and may well be less than their protagonists state. Shettles' timing advice and acid/alkaline recommendations have also been disputed in experimental trials.⁴⁷ Hence, while utilizing these methods may well notably enhance a couple's chances of achieving the offspring of their desire, a substantial margin of unpredictability will still remain. Couples employing such procedures will always need to reckon with the possibility that the sex of any resultant child may not turn out as they had hoped, despite their best efforts. In these cases, the expression of the *Midrash*, "no man knows what a woman is bearing, for it is written: 'nor how the bones do grow in the womb of her that is with child,' (*Kohelet* 11:5)"⁴⁸ will continue to be the commonplace rule.

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From the viewpoint of both traditional and progressive Judaism, provided that a couple conforms to the relevant laws and customs of *kashrut*, *niddah*, *tzniut*, *inter alia*, these two types of strategies would be unlikely to be regarded as improper. There is nothing *halakhically* unsuitable about altering diet or sexual timing if the existing *halakhic* boundaries are not transgressed. Neither is there any particular societal or symbolic reason to try to restrict this type of practice, even if such limitations were feasible. Moreover, while the spiritual/philosophic arguments raised in opposition to efficient sex preselection methods might also lead to attempts to dissuade couples from using uncertain procedures, the lack of total surety as to the result of the uncertain methods would tend to blunt the dissenting case.

Ironically, then, it may well be that - at least as far as progressive Jews are concerned - the more efficient a sex preselection method becomes, the less tolerable it becomes. In the final analysis, the problem, it emerges, does not lie in attempting to influence the sex of offspring, the problem lies in attempting to exert complete control over the outcome. It is a paradoxical conclusion which - it could be imagined - might well have been endorsed by the rabbis of the Talmud, had they ever confronted this permutation of the issue.

Indeed, from a Jewish perspective, this paradox should come as no surprise. For one of the earliest examples of human technological striving that is recorded in the Torah tells of the attempted construction of the Tower of Babel (Genesis 11:1-9). At Babel, the people wanted to demonstrate that their ingenuity had the capacity to reach the level of God, and so they set out to build a tower that would rise to the highest plane of perfection - up to heaven itself. But God, preferring the people to stay within their intended human domain, brings the edifice to a halt by confounding human language and dispersing the people across the face of the earth.

From our contemporary vantage-point, of course, it has become obvious that God does not seem to have any reservations about building technology *per se* - only about building towers of vanity that attempt to scrape at the door of heaven. Maybe there is an object lesson here about sex preselection: that while there is no harm in creating structures that place a heightened capability in our hands, towers of total dominance that serve no other purpose than the demonstration of our aspiration for control do not leave much room for God. As one commentator observed about the ill-fated Babel venture, "[a]ll human effort is both futile and empty, if dictated by self-exaltation, and divorced from acknowledgement of God."⁴⁹ The Jewish ideal of human accomplishment is clearly to be found in advances that truly enrich the quality of the human condition while yet exalting God. Perhaps it is this illuminating notion that should be our guiding light as we try to evaluate the variety of sex preselection opportunities that will become increasingly available as the future unfolds.

Notes

1. The term "sex preselection" is the most precise for current purposes. As the 1977 report, "Assessing Biomedical Technologies" prepared for the National Science Foundation explains, "Sex' in this context signifies gender in the purely genetic sense, as determined at the time of conception. Physiological and psychological definitions of gender - influenced by various hormonal and environmental factors, as well as by the genetic sex - are not meant to be represented by the term."

"Preselection" refers to predetermining sex by interventions prior to conception, as opposed to "selection" which refers to interventions after conception.

2. Owen D. Jones, "Sex Selection: Regulating Technology Enabling the Predetermination of a Child's Gender," in *Harvard Journal of Law and Technology*, Fall 1992, Vol. 6, p. 4.

3. *Ibid.*, p. 5.

4. *Ibid.*, p. 6.

5. *Kiddushin* 82b. The interpretation of *Beit Hillel* may be found in *Mishnah Yevamot* 6:6. All Talmud translations into English are from The Soncino Press Edition, Rabbi Dr. I. Epstein (editor), London, 1936.

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6. Psalm 17:14 reads, "U'tzafun'cha t'malei vitnam yisb'u vanim." The Talmud translates this as "And whose belly Thou fillest with Thy treasure, who have sons in plenty" (*Berakhot* 5b). Without vowels, "tzafun'cha," "thy treasure," could be read as "tzafon'cha," "Thy north," and hence Rabbi Yitzhak's advice.
7. Tractate *Kallah*, as quoted in J. David Bleich, *Judaism and Healing - Halakhic Perspectives*, New York, 1981, p. 111.
8. It is possible that this goal is also the rationale behind the advice of Rabbi Yehoshua in *Baba Batra* 10b, and that of Tractate *Kallah*, to make one's wife "happily disposed" or to "woo" her prior to intercourse. *Berakhot* 60a contains a parallel version.
9. Fred Rosner, *Modern Medicine and Jewish Ethics*, New York, 1986, pp. 132-3.
10. Bleich, *op. cit.*, p. 111. A Progressive approach to the *halakhah* would certainly concur with this outlook.
11. The heat of the debate surrounding this method is well-illustrated in Mark Cohen, "Repro Man," *The Washington Post Magazine*, June 26, 1994, p. 26.
12. Kevin M. Stanley, "Moral Issues and Public Policy Concerns Surrounding Sex Preselection," in *Logos*, March 13, 1989, p. 195.
13. Jones, *loc. cit.*, p. 17.
14. In 1989 the cost was quoted at "around \$400" and is likely to have fallen somewhat since then. See Stanley, *loc. cit.*, p. 195.
15. Jones, *loc. cit.*, p. 16.
16. *Ibid.*, p. 16, see footnote # 68.
17. While genetic engineering, as it is known today, could not have been foreshadowed prior to this century, simple genetic manipulation of animals seems to have been understood. Yet, despite this, a profound reluctance to extend genetic experimentation to human beings apparently prevailed. As Dr. Fred Rosner puts it, "Tampering with the very essence of life and encroaching upon the Creator's domain are considerations worthy of extensive discussion from the Jewish standpoint." The Jewish heritage, however, communicates no such scruples about sex preselection. See Rosner, *op. cit.*, pp. 180-183.

18. Rosner, *op. cit.*, pp. 179-183. See also, David Golinkin, "Does Jewish law permit genetic engineering on humans?," in *Moment*, August, 1994, pp. 28-9.
19. Bleich, *op. cit.*, pp. 110-111.
20. *Ibid.*, p. 111.
21. *Ibid.*, pp. 111-113. Natural procreation in the pursuit of a boy and a girl has the concomitant desirable outcome of increasing the Jewish population, since a minority of couples will achieve a boy and a girl in the first two pregnancies. Clearly this is a powerful reason as to why the traditional *halakhist* would not want to encourage the use of efficient sex selection procedures.
22. Rosner, *op. cit.*, p. 115.
23. This is so provided that acceptable sperm procurement procedures are utilized. Masturbation, for example, is almost universally considered to be improper. See Rosner *op. cit.*, p. 102.
24. Rosner, *op. cit.*, p. 101.
25. Bleich, *op. cit.*, p. 112.
26. For an articulate elaboration of the principles of progressive *halakhah* see Moshe Zemer, *Halakhah Shefuyah*, Tel Aviv, 1993, pp. 46-57.
27. Walter Jacob (ed.), *American Reform Responsa*, New York, 1983, # 160, p. 508.
28. Jacob, *op. cit.*, # 153, p. 480.
29. Jones, *loc. cit.*, pp. 12-17. Jones reports U.S. figures which disclose that were the preferences of women to be translated into single-child families, there would be 161 males born for every 100 females. In a family of more than one child, their preferences would produce 171 first-born males for every 100 first-born females. He avers that even among those who are supporters of the women's movement, a preference for sons prevails.
30. See, for example, Stanley, *loc. cit.*, pp. 196 ff..
31. Jones, *loc. cit.*, p. 11.

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32. Stanley, *loc. cit.*, p. 196.
33. Simeon J. Maslin (ed.), *Gates of Mitzvah*, New York, 1979, p. 11.
34. Bleich, *op. cit.*, p. 114.
35. Maslin, *op. cit.*, p. 30.
36. *Ibid.*, p. 77.
37. Ramban, *Iggeret Ha-Kodesh*.
38. Any fertility problems would, of course, be included in the definition of "medical interest."
39. This has been mooted in the literature. For spermicides see "Assessing Biomedical Technologies," p. 35. For a sex-preselection pill to be taken by the male see, David M. Rorvik, *Brave New Baby*, New York, 1971, p. 50.
40. It is important to note that the *halakhah* is permissive in this situation out of considerations other than *pikuach nefesh*. As J. David Bleich explains, "*Halakhah* is suspended only when there is no other way of avoiding danger. In the case of the 'three women' [the Talmudic discussion of women at risk] there are other alternatives, albeit harsh ones: abstinence or divorce..." Practically speaking, the *halakhah* allows contraception in order to make marital intercourse possible for these women. It could equally have disallowed it. How much the more then can one imagine sex preselection devices being accepted when the Talmud explicitly supports sex preselection.
41. This is the position of Solomon Luria. For a good summation of his views see Rachel Biale, *Women and Jewish Law*, New York, 1984, pp. 215-8.
42. Bleich, *op. cit.*, See Chapter 10.
43. See the first of the principles of progressive *halakhah* in Zemer, *op. cit.*, pp. 47-8.
44. *The London Daily Mail*, March 18th, 1994, p. 7. See also, Sandra Ann Carson, "Sex Selection: The ultimate in family planning," in *Fertility and Sterility*, Vol. 50, No. 1, July, 1988, p. 16.
45. Rorvik, *op. cit.*, p. 41.

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46. *Ibid.*, pp. 43-44.

47. Carson, *loc. cit.*, pp. 16-17.

48. *Genesis Rabbah* 65:12.

49. Rabbi Dr. J. H. Hertz, *The Pentateuch and Haftorahs*, London, 1987, p. 39.

We suggest that the use of animals for the benefit - and specifically the healing of - human beings has always been permitted in the Jewish tradition, provided that the animals are treated humanely. Therefore, the remaining questions which must be elucidated are: (3) Does animal research truly benefit humanity? and (4) Are research animals treated humanely by researchers? We will examine each of these four issues in turn.

THE USE OF ANIMALS FOR HUMAN HEALING IN JEWISH TRADITION

The use of animals for human benefit is ratified by our earliest Jewish documents. In the story of creation, God gives humanity dominion over every sort of living creature (Genesis 1:26). This is reaffirmed in the post-flood covenant God establishes with Noah - which gives him and his descendants the right to eat "every moving thing that lives" as long as the blood of an animal is not consumed with its flesh (Genesis 9:3-4).

Animals were not simply a source of sustenance, however. They were also, from the earliest times, seen as a vehicle for healing the human condition, particularly through sacrificial offerings. Sacrifices offered to God

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32. *Ibid.*, pp. 174-175.
33. *Ibid.*, pp. 174-175.
34. *Ibid.*, pp. 174-175.
35. *Ibid.*, pp. 174-175.
36. *Ibid.*, pp. 174-175.
37. *Ibid.*, pp. 174-175.
38. Any facility problems would, of course, be included in the definition of "technical support."
39. This has been noted in the literature. For example, see "Assessing Educational Technologies," p. 75. For a similar statement, see the work of David M. Merrill, *How to Use New Technology*, New York, 1981, p. 30.
40. It is important to note that the individual is permitted in this situation out of some limitations other than physical needs. As David Bleich explains, "Halakha is suspended only when there is no other way of avoiding danger. In the case of the 'Yeshiva women' (the Yeshiva discussion of women at risk) there are other alternatives, albeit harsh ones, before one is forced to suspend the Halakha. Practically speaking, the Halakha allows suspension in order to make marital relations possible for these women. It would equally have allowed it. Here, much the same logic can be applied: sex prohibition devices being available when the Yeshiva explicitly supports sex prohibition."
41. This is the position of Solomon Luria. For a good exposition of his views see Rachel Weil, *Women and Jewish Law*, New York, 1984, pp. 215-8.
42. Bleich, *op. cit.*, see Chapter 10.
43. See the list of the principles of progressive halakha in Zemer, *op. cit.*, pp. 47-8.
44. *The Los Angeles Daily Mirror*, March 18th, 1974, p. 7. See also Sandra Ann Carson, "Sex Structure: The absence in family planning," in *Family and Society*, Vol. 50, No. 1, July, 1972, p. 18.
45. Zemer, *op. cit.*, p. 41.

began with the second generation of human beings. Cain and Abel offered sacrifices to God (Genesis 4:3-4) and animals were reported to have been offered regularly from that point on (e.g., Noah, Genesis 8:20ff; Abraham, Genesis 12:8 and 21:33; Isaac, Genesis 26:25; Jacob, Genesis 33:20 and 35:7). One prominent role of the sacrifices is the substitution of the sacrificial animal's life for the life of the person making the offering. The animal's blood replaces the person's blood (Leviticus 17:11). Of course, the best known example of this phenomenon is Isaac's replacement by a ram in the story of his (near) sacrifice (Genesis 22:13); however, this was undoubtedly a basis for the efficacy of the sacrifices at the Temple cult. Thus, animals were used from very earliest times to ameliorate a human being's condition: to heal a person in a very real sense.

In later times, animals were used in even more explicit ways for their healing properties. The *Bavli*, which preserves a great deal of medical lore from this era (200-500 C.E.) makes it apparent that animals were used for human healing quite frequently.¹ For example, the following cures are just two examples:

For a cataract he should take a scorpion with stripes of seven colors and dry it out of the sun and mix it with stibium in the proportion of one to two and drop three paint-brushfuls into each eye - not more, lest he should put out his eye. For night blindness he should take a string made of white hair and with it tie one of his own legs to the leg of a dog, and children should rattle potsherds behind him saying, "Old dog, stupid cock." He should also take seven pieces of raw meat from seven houses and put them on the doorpost and [let the dog] eat them on the ashpit of the town. After that he should untie the string and they should say, "Blindness of A, son of the woman B, leave A, son of the woman B", and they should blow into the dog's eye. (B. Gittin 69a)

For swelling of the spleen, let him take seven leeches and dry them in the shade and every day drink two or three in wine. Alternatively he may take the spleen of a she goat which has not yet had young, and stick it inside the oven and stand by it and say, "As this spleen dries, so let the spleen of So-and-so the son of so-and-so dry up." (B. Gittin 69b)

These are but two of many passages from the *Bavli* in which animals are used for human healing. We may therefore surmise from the evidence of our sources that, from the earliest times, it was permissible in Jewish culture to use animals for the spiritual and physical healing of human beings.²

THE MANDATE FOR HUMANE USE OF ANIMALS IN JEWISH TRADITION

Having demonstrated that it has clearly always been permissible to use animals for the healing of human beings, we must now address another issue which comes to the fore in our sources. The humane treatment of animals, no matter for what purpose they are used, is clearly mandated in our sources from the earliest stratum on. Animals are to rest on Shabbat, just as people do (Exodus 20:10; Exodus 23:13; Deuteronomy 5:14). An animal and its young are not to be slaughtered on the same day since this is deemed cruel (Leviticus 22:28). Likewise, a bird and its eggs may not be taken together (Deuteronomy 22: 6-7). An ox may not be muzzled as it threshes (Deuteronomy 25:4). Clearly, in the *Torah*, consideration of an animal's condition is deemed important.

Similarly, in rabbinic literature the prevention of cruelty to animals (*tza'ar ba'alei hayim*) is strongly upheld. The prevention of such cruelty is considered to have been derived from the *Torah* and so carries greater authority than practices developed only later by the sages. As a consequence, certain Sabbath prohibitions may be superseded in order to keep animals from suffering (B. *Shabbat* 128b B. *Baba Metia* 32b). The so-called Noachide laws, i.e., those laws given to humanity before the Jewish people existed and which

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A Liberal Halakhic Perspective

Judith Z. Abrams and Steven A. Abrams

The question of using animals in the process of researching and developing medical aids for human beings is one ideally considered from a liberal *halakhic* perspective. While records of animals being used for human healing exist in Jewish texts, there is no exact precedent for animal experimentation for medical research in the classic sources. The most productive course of inquiry may be to ferret out the general, underlying values which guide the use of animals for human benefit in our sources and apply them to the questions at hand. Our questions may be most succinctly expressed as follows: (1) Is it permissible, within the Jewish tradition, to use animals for research designed to aid in human healing? (2) If so, under what conditions and limitations must such research be conducted?

We suggest that the use of animals for the benefit - and specifically the healing of - human beings has always been permitted in the Jewish tradition, provided that the animals are treated humanely. Therefore, the remaining questions which must be elucidated are, (3) Does animal research truly benefit humanity? and (4) Are research animals treated humanely by researchers? We will examine each of these four issues in turn.

THE USE OF ANIMALS FOR HUMAN HEALING IN JEWISH TRADITION

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Animals were not simply a source of nourishment, however. They were also, from the earliest times, seen as a vehicle for healing the human condition, particularly through sacrificial offerings. Sacrifices offered to God

apply to everyone, include a prohibition against eating the flesh torn from a living animal (*B. Avodah Zarah* 8:4-6; *B. Sanhedrin* 56a-57a and 59a-b). One is forbidden to purchase animals unless one can properly provide for them (*Y. Yebamot* 15:3, 14d; *Y. Ketubot* 4:8, 29a).

This concern for animal welfare is balanced in Jewish tradition with the possible benefit human beings may derive from the use of animals for food or in medical research. Animals may be used in the cure of diseases as long as their suffering is minimized (Rema, *Shulkhan Aruch, Even ha-Ezer* 5:14).³ Likewise, three of the most noted contemporary *halakhic* authorities on medical ethics, *Tzitz Eliezer* (14, no 68), Moshe Feinstein (*Iggrot Moshe, Hoshen Mishpat* II, no 47, sec 1) and *Nishmat Avraham*⁴ all agree that scientific research using animals is permitted if it is for human benefit and that all possible care is taken to avoid causing the animals pain.

Our sources seem to be in relatively complete agreement: animals may be used for human healing as long as care is taken to minimize their pain. Therefore, the real issues regarding the Jewish view of medical research using animals are whether animal research does contribute to human healing and whether animals are treated humanely in the course of such research. It is to these two issues that we now turn our attention.

THE NATURE OF THE BENEFIT TO THE FETUS AND NEWBORN FROM ANIMAL RESEARCH

Few arguments are less true and more malicious than the claim that animal research is unnecessary or lacks critical benefits for humanity.⁵ To consider this issue, we will discuss some of the most important uses of animals in research and also the motivations and approaches of some of those who oppose the use of animals in research.

Throughout recent history, animal research has been central to medical advances. Recent reviews have clearly documented that the

overwhelming majority of such advances involved medical research. For example, from 1901-1992, 56 of the 83 Nobel Prizes awarded in physiology or medicine involved animal research, including all nine between 1984-1992.⁶

Research into the fetus and newborn has been and remains dependent on the use of animals. We will briefly describe several key areas in which animals have been and are used to study fetal medicine or provide medications necessary for the care of infants.

Currently about 5% of infants are born prematurely in the United States.⁷ The physiology of the premature infant resembles that of the unborn fetus in many ways. Caring for these infants requires recreating as much of a womb-like environment as possible. To do that, we must know how the fetus functions, i.e. how its heart, kidneys, liver and brain work, because in many ways, these organs function very differently before birth (and therefore in premature infants) than in older children and adults. Virtually all of our understanding of fetal physiology is based on research in which animals such as fetal lambs or fetal pigs were studied using varying techniques. The alternative to the use of animals in these studies would have been to sacrifice human infants for them or to attempt treatment of premature infants without any understanding of the many ways their lungs and heart function differently from those of older children and adults.

Recently, new techniques have been developed to place critically ill newborns on a form of cardio-pulmonary bypass called ECMO (Extra Corporeal Membrane Oxygenation) and to use new medications for such infants, e.g., nitric oxide to improve the lungs. These approaches have saved the lives of many infants who otherwise would not have survived due to severe infections or malformations of the lungs. These techniques and medications were uniformly tested, evaluated and altered based on use of animals whose physiology is similar to that of human infants.

More directly, some malformations which may be lethal if the infant survives to term are being treated with surgery during a relatively early stage

of the pregnancy at a time when that treatment might prevent severe consequences. For example, occasionally there is an opening in the diaphragm through which gut passes into the chest cavity. If this occurs early during pregnancy, there is inadequate room for the fetal lung to develop. This condition, called congenital diaphragmatic hernia, has a very high mortality rate. One approach to its treatment, when diagnosed early (by ultrasound) is to surgically repair the opening during the pregnancy to allow the lung to develop. Techniques for performing this surgery, such as monitoring techniques, anesthesia and actual operating procedures, have been entirely developed using animal models.⁸ It is inconceivable that trial and error would be used first on human pregnancies rather than animals.

One specific recent medical advance in the care of premature infants which was dependent on animal research was the development and production of surfactant for treatment of respiratory distress syndrome (RDS) in premature babies. RDS is a severe, frequently fatal, illness in which premature babies have a shortage of a chemical, called surfactant, which allows their air sacs to open up and for them to receive oxygen. (Among others, President Kennedy's baby died of RDS in the early 1960's.) During the 1970's and 1980's a considerable amount of research was undertaken to develop a surfactant which could be given into the lungs of premature babies to prevent RDS and save their lives. It is unimaginable that the development of surfactant could have occurred without animal research. Animal models (chiefly rabbits and lambs) were used to determine the chemical makeup of surfactant and to test different forms of surfactant and how best to give them to babies. Ultimately, of course, after years of such work, tests were conducted in humans and techniques perfected. However, these tests could only have been done safely and effectively when based on the preceding work in animals. Currently, much of the surfactant used is produced from cows' lungs as this form of surfactant is safe and effective for human babies.⁹

This highly effective surfactant, currently derived from cows, could not have been developed or used for babies if one equates the value of a human life with that of a cow. The equation of human and animal life is central

to the views of many animal rights activists. Understanding their viewpoint is important for recognizing that the animal rights movement is one in which human life is equated with animal life, whatever the cost of that equation, even if it means the death of premature babies.

Peter Singer, an ethicist who is a central figure in the "animal rights" debate, has referred to this belief (that humans rights take precedence to those of animals) as speciesism. In explaining "speciesism," Singer states,

...A word about religious ethics...They reflect a Judeo-Christian view of the human-animal relationship...[i.e.,] the claim that all human beings and only human beings possess some "intrinsic worth" or dignity not to be found in members of any other species...[This claim] resembles a religious incantation more than an argument. It is in fact a slightly secularized descendant of the Judeo-Christian belief that humans, and only humans, are made in the image of God.¹⁰

Singer correctly understands Judaism's beliefs. Indeed, this very precept is considered the most important in the entire Torah:

"Love your neighbor as yourself. (Leviticus 19:18)" Rabbi Akiba said: This is the greatest principle in the Torah. Ben Azzai quoted the verse: "This is the book of the generations of Adam. In that day God created human beings in the likeness of God did God make him. (Genesis 5:1)" He said: This is a principle greater than that. (*Sifra* on Leviticus 19:18)

Many animal rights activists do not subscribe to this fundamental Jewish belief. The moral equivalence of humans and animals is simply put by Ingrid Newkirk, cofounder of the group "People for the Ethical Treatment of Animals", a well-known opponent of animal research:

Six million people died in concentration camps, but 6 billion broiler chickens will die this year in slaughter houses.¹¹

A rat is a pig is a dog is a boy.¹²

Such sentiments are repugnant, both for their equation of human suffering to that of farm animals and for their trivialization of the Holocaust. In this regard, it is interesting to note that the Nazis were strong *opponents* of animal research, believing it to be part of a "Jewish materialistic school of medicine."¹³

The use of animals in research remains critical to our understanding of disease. It is falsely stated by some that modern genetic research makes animal research unnecessary. This is false for many reasons, not the least of which is that modern genetic research makes extensive and critical use of "transgenic" animals, usually rodents, to evaluate the genes which produce diseases. In these studies, the gene whose malfunction is responsible for a human disease (such as cystic fibrosis) is identified. Using molecular biology techniques, defective versions of this gene are placed into the genetic makeup of an animal (usually a mouse), such that the mouse develops the disease, or at least behaves similarly to a person with that disease. Then, not only can the disease be better characterized, but the effects of specific treatments, such as gene therapy, can be evaluated. For example, recently, gene therapy was shown successfully to correct many of the pulmonary problems associated with cystic fibrosis (the most common lethal congenital disorder among Caucasians in the United States) in a transgenic mouse. These results are a first step towards using this therapy in children with cystic fibrosis.¹⁴

Numerous diseases are currently being studied using this approach. These include Duchenne's muscular dystrophy (the most common, lethal form of muscular dystrophy), sickle cell anemia, and Gaucher's disease (common among Jews). Another important use of transgenic mice is in the study of AIDS therapies. There is even a mouse "model" for Down's syndrome (Trisomy 21 in humans, Trisomy 16 in the mice). From this model, basic

information regarding how chromosomal abnormalities cause the well-known clinical features of these conditions is being studied for the first time.¹⁵

These studies are at the forefront of current medical research efforts. They take advantage of the newly developed ability to transfer human genes to animals and the rapid growth and reproductive cycle of rodents. Only if we assume that a rat really is equal in worth to a boy will we find such studies inappropriate.

THE HUMANE TREATMENT OF RESEARCH ANIMALS TODAY

The rules and laws governing the use of animals in medical research are quite comprehensive and thorough. These guidelines mandate that studies must have relevance to human or animal health; that only the minimum number of animals needed to obtain valid results be used; that discomfort and pain to the animals be minimized when consistent with sound scientific practices; that any procedure which might cause more than transitory or slight pain be performed with appropriate sedation, analgesia or anesthesia and that the living conditions of the animals be appropriate for their comfort and health and normally should be overseen by a veterinarian.¹⁶

In the course of researching this article, Rabbi Abrams attended a meeting of the Baylor College of Medicine's Animal Protocol Review Committee (a subcommittee of the Animal Research Committee) in Houston, Texas to examine how these guidelines are put to use. The committee is made up of physicians, researchers, a statistician, veterinarians and a Catholic priest who expresses a layperson's point of view. This committee reviews research proposals which will utilize animals in order to ensure that they live up to these national guidelines. The committee has the right to reject proposals as unworthy or irresponsible in their use of animals, return these proposals for further work or to approve them outright. All the proposals are first reviewed by a veterinarian who helps decide which projects should be reviewed by the committee and which can most likely be accepted or rejected with dispatch.

However, it should be noted that any committee member can bring up any proposal for discussion. The committee seeks to ensure that there is a balance of compassion for the animals and good science. Often, these two criteria complement each other. For example, a well-cared-for laboratory animal is more likely to yield consistent results than one that is poorly cared for. The committee sees itself in an educational role vis-a-vis the researchers. If a researcher's proposal does not seem to give evidence of adequately planned care to ensure the comfort and humane treatment of animals or does not justify the number of animals requested, the committee will point this out to the researcher, suggesting revisions in the protocol to bring it in line with the national guidelines on these matters.

The committee is not a "rubber stamp". They strongly questioned most of the proposals brought forward for their consideration and made numerous recommendations that provided for the best, and most minimal, use of animals; particularly where several similar studies were proposed at the same time. Recommendations for proper analgesia and anesthesia for the animals were made consistently and proposals were returned to researchers for further development in these areas. Overall, the care and concern for the laboratory animals' welfare was consistent, well thought out and vocally advocated by this subcommittee which clearly had the power to enforce its will.

If this committee's work is typical - and one has reason to suspect that it is since it is following Federal guidelines - then one can believe with reasonable confidence that the welfare of animals used in medical research is a matter seriously considered and enforced. This being the case, and the benefit to humankind being clear, there should be no objection to animal research for medical purposes from a Jewish perspective.

Notes

1. See Jacob Neusner, *A History of the Jews in Babylonia, Volume III*, 1968, pp. 110-126, on why this material was included in the Bavli.
2. Though J. David Bleich reaches the same conclusions we do, we prefer to base our justification on different precedents than his. For example, he relates the kosher slaughtering of animals to animal experimentation and we feel this is not really relevant to our topic. The issue is not whether we must humanely kill animals in order to eat them but whether we can use them for human healing.
3. Cited in J. David Bleich, "Animal Experimentation" in *Contemporary Halakhic Problems, Volume III*, New York, 1989, p. 218.
4. Abraham S. Abraham, *The Comprehensive Guide to Medical Halachah*, Jerusalem, 1990, p. 146.
5. See, for example, *Judaism and Animal Rights: Classical and Contemporary Responses*, Roberta Kalechofsky, ed., Marblehead, MA, 1992, particularly pp. 304-318.
6. M.G. Hulsey and R.J. Martin, "The Role of Animals in Nutrition Research," *Nutrition Today*, July/August 1993, p. 19.
7. Gordon B. Avery, *Neonatology: Pathophysiology and Management of the Newborn*, Third Edition, Philadelphia, 1987, p. 12.
8. J.M. Nelson, et al., "Operative Techniques in the Fetal Rabbit," *Journal of Investigative Surgery*, 1990, 3 (4), pp. 393-398; J.F. Sabik, et al., "Halothane as an Anesthetic for Fetal Surgery," *Journal of Pediatric Surgery*, 1993, April 28 (4), pp. 542-546; R.W. Jennings, et al., "New Techniques in Fetal Surgery," *Journal of Pediatric Surgery*, 1992, October 27 (10), pp. 1329-1333.
9. A. Jobe and M. Ikegami, "The Prematurely Delivered Lamb as a Model for Studies of Neonatal Adaptation," in P.W. Nathaniels, ed., *Animal Models in Fetal Medicine*, Ithaca, NY, 1984, pp. 1-30.
10. P. Singer, "The Significance of Animal Suffering," *Behavioral and Brain Sciences*, Volume 13, 1990, pp. 9 and 10.
11. Cited in Larry Horton, "A Look at the Politics of Research With Animals: Regaining Lost Perspective," *The Physiologist*, Vol. 31, 1988, p. 41. Original article by Chip Brown, "She's A Portrait of Zealotry in Plastic Shoes," *Washington Post*, November 13, 1983, p. 31.
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13. Larry Horton, "A Look at the Politics of Research With Animals: Regaining Lost Perspective," *The Physiologist*, Vol. 31, 1988, p. 41.
14. R. M. Ruprecht, et al., "Murine Models for Evaluating Antiretroviral Therapy," *Cancer Research*, 1990, September 1, 50 (17 Suppl.), pp. 56182-5627; S.C. Hyde, et al., "Correction of the Ion Transport

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Defect in Cystic Fibrosis Transgenic Mice by Gene Therapy," *Nature*, 1993, March 18, 362 (6417), pp. 250-255.

15. Mario R. Capecchi, "Targeted Gene Replacement," *Scientific American*, March, 1994, pp. 52-59; C.C. Lee, "Mdx Transgenic Mouse: Restoration of Recombinant Dystrophin to the Dystrophic Muscle," *Human Gene Therapy*, 1993, June 4 (3), pp. 273-281; M.E. Fabry, "Transgenic Animal Models of Sickle Cell Disease," *Experientia*, 1993, January 15, 49 (1), pp. 28-36; E. Sidransky, et al., "Gaucher Disease in the Neonate: A Distinct Gaucher Phenotype is Analogous to a Mouse Model Created by Targeted Disruption of the Glucocerebrosidase Gene," *Pediatric Research*, 1992, October 32 (4), pp. 494-498; D. M. Holtzman, "The Molecular Genetics of Down Syndrome," *Molecular Genetic Medicine*, 1992, 2, pp. 105-120.

16. *Guide for the Care and Use of Laboratory Animals*, Washington, D.C., U.S. Department of Health and Human Services, 1985, p. 23.