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## Science and Halacha: Symbiosis

By RABBI J. GRUNBLATT

Hearing these two words conjunctively, one is a little jarred initially in expectation of conflict. This expectation is a result of an old prejudice born in an initial confrontation between certain scientific theories with assumptions that were considered religious truths. We have long since learned that Torah is not a primitive science and science is not a modern theology. In fact a Ramban or a Samson Raphael Hirsch might very well point out how indispensable science and religion are to each other. Value statements about the world lack a certain dimension if they are unaware of the "how" of the universe. Certainly science has only reached the threshold of possible truth if it ignores the "why" of the universe. In the area of halacha, which is practical and applied theology, the knowledge of practical and applied science is absolutely prerequisite. Both disciplines deal with the concrete and the day-to-day reality — one supplies its rules, the other supplies its tools.

From the point of view of "religious sociology," science has created its problems for halacha; but then it has also found many solutions. Science may be responsible for the skyscraper and the apartment on the twentieth floor which admittedly is not easily accessible on Shabbos, by foot. But then, science has also developed the automatic elevator. Freezers and refrigerators may have caused some halachic consternation on Shabbos. On the other hand, they have become a salvation to orthodox Jews who travel or live in isolated com-

munities where kosher supplies cannot always be obtained. If we were to take an over-all accounting, we would most likely come to the conclusion that our gains have greatly outnumbered our losses. To wit — as a result of electricity and automation the "Shabbos Goy" is rapidly becoming a victim of technological unemployment.

If a problem does exist, it is more likely going to be scientist versus halachist, two scholars whose cooperation and mutual understanding is essential for the proper interaction of the two disciplines. Their vocational temperaments are naturally different. The halachist, who deals with eternal and essentially unchangeable verities, who must forever preserve the old in face of the new, who must forever say, "Yes — but," is naturally suspicious of the new. Humanly reluctant to face that which poses new challenges, that which by its very newness and facility may change set patterns that provided stability for and added a flavor to traditional life. The introduction of machine matzohs, for instance, was more than a series of halachic questions of *shimur*, *tishmah* or *Ch'shach chometz*. There was undoubtedly also present an instinctive recoil against an intruding new method which robbed the spiritually rich Pesach Holiday of some of the preparatory fervor and much of its "religious fun."

But, even more seriously than that — in order to have fruitful cooperation between halacha and science, we need great halachists who have more than a superficial understanding of halacha. While we may observe the incipient be-

ginnings of such new breeds, the official stance of the halacha world is still not to give Jewish legitimacy to competence in any field other than direct Torah study. The notion is obdurately preserved that the "real" Talmud Chochem cannot waste his time for the understanding of scientific problems and that he who pursues scientific achievement cannot really be a Ben Torah.

In defense of the classical Roshe Hayeshivah and their refusal to give de jure recognition to secular discipline, a valid point must be made. There is a very real and serious threat in the orthodox from Torah. The orthodox parent has fully appropriated, under the guise of parnosah, the credo of the secular Jewish parent, "My son, the doctor; my son, the lawyer" — but rarely do we hear "my son, the Talmud Chochem." The defiance of the Rosh Hayeshivah to the seemingly irrepressible rush to the campus may be a last ditch battle against a tidal flow out of Torah study. In spite of all the lip service offered, the Talmud Chochem is looked upon with a degree of pitiful disdain and as an example of glorious futility in a production-oriented society. The modern orthodox community could do much in resolving the tension by giving meaningful deference to and by providing the proper compensation for achievement and excellence in a specialty vital to the survival of traditional Jewish living — Torah study. Such a positive attitude could create the psychological atmosphere as well as the actual means for a more viable and effective relationship between the halachist and the scientist.

## The Editors' View

Judaism has known many adversaries. During the enlightenment, numerous philosophers and historians challenged religion. Today modern science tosses the gauntlet. Must Judaism reply to such challenges? The viability of Judaism depends on its capacity to resolve conflict. This supplement proposes, rather than to resolve the issues, to clarify the controversies. Science develops from man's personal experiences, observation, and experimentation. New and different discoveries replace older theories. New formulations refute the old, Torah however, divinely written and immutable, is eternally applicable. Humans cannot comprehend the motivations behind the Torah. However, if we can conceive of science as a helpful tool for mortal understanding of the divine Torah, then science and halacha can successfully and rewardingly co-exist.

Zahava Spitz, Nechle Wernick  
Supplement Co-chairmen

## Contributors

Dr. Sanford Aranoff . . . Associate Professor of Physics at Rutgers University . . . published in leading professional journals . . . member, Union of Orthodox Jewish Scientists. Using the theory of special relativity, Dr. Aranoff resolves the age of the earth controversy.

Rabbi David Bleich . . . an Editor of Tradition . . . teaches Philo and J. S. at Stern. Rabbi Bleich applies the immutability of Torah to the supplement problem.

Yitzchak Friedman . . . PHD candidate, English, NYU . . . Public Relations Consultant with Robert L. Bliss. Mr. Friedman answers the question: Should a Yeshiva student study science?

Rabbi Joseph Grunblatt . . . Rabbi of Queens Jewish Center of Forest Hills. Rabbi Grunblatt overviews the problem and finds no unresolved conflict.

Martha Mittleman . . . returned from a year in Israel to complete her English major and BRE with the Class of '70. Miss Mittleman researched the ethics of euthanasia and discusses its halachic implications.

Dr. Fred Rosner . . . Assistant Director, Division of Hematology, Maimonides Medical Center . . . Instructor, Downstate Medical Center. Dr. Rosner crystallizes the religious questions involved in heart transplants.

Dr. David Sohn . . . Pathologist, New York Medical Center . . . from Lawrence, New York. Dr. Sohn categorizes blood transfusions and kidney transplants, both practiced without fanfare or controversy, with heart transplants.

Mr. A. Spitzer, Chairman of Jewish Action Committee . . . from Brooklyn, N.Y. Mr. Spitzer urges public pressure on Hadassah Hospital to end the abuse of Israel's autopsy regulations.

# Great Medical Feats Pose Many Unsolved Ethical Problems

## Torah Above Time

By RABBI D. BLEICH

"I believe with perfect faith that this Torah will not be changed."

The immutability of Torah is without doubt one of the focal doctrines of Judaism. The *ani ma'min* formulation expresses in forthright and succinct language the belief that the principles and maxims of halacha are eternal and unchanging. To be sure, a changing technology requires halachic determinations of unprecedented scope. A comprehensive and all-encompassing corpus of halacha can most assuredly be applied to novel circumstances. Nevertheless, it would be erroneous to conclude that such cases are examples of a changing halacha. In actuality, it is the conditions of human life which change while halacha remains constant. Such diverse innovations as hydroponic agronomy in Eretz Yisroel and the use of an automatic Shabbos clock are instances of a changing reality rather than a halachic metamorphosis. The ever-changing panorama of human progress merely provides a backdrop for the actualization of halachic determinations already implicit in Torah from the very moment of revelation on Mt. Sinai.

Yet a sharp distinction must be drawn between what, for lack of better terminology, may be called the instantiation of halacha versus halachic conceptualization. The former involves the concrete application of already defined principles. Hence this area is clearly contingent upon empirical and technological variables. It is the latter area which is problematic. It has been contended that the contemporary state of scientific knowledge appears to indicate that the underlying rationale of many areas of Jewish law are grounded upon scientific misconception or outright error.

A case in point are the *halachot* concerning *tereifah*. "Tereifah *ana chayim*," declares the Gemara (Chullin 42a), "an animal suffering the loss or perforation of one of its vital organs (and these organs are carefully catalogued by Chazal) cannot survive longer than a period of twelve months. Yet in an age of advanced medical research — not to speak of successful organ transplants — many such *terefot* no longer constitute mortal wounds. Since *terefot* do indeed survive are we to conclude that halachic decisions based upon seemingly outdated medical knowledge are themselves obsolete?"

The problem is not a new one. So early an authority as the Rambam addressed himself to this question:

... as regards the defects which the Sages have enumerated, concerning which they have said that they render the animal *terefah*, even if it should appear from our present knowledge of medicine that some of them are not fatal and that the animal can survive them, we must proceed by what the Sages have enumerated, as it is said (Deut. 17:15), "According to the law which they shall teach thee" (Masechet Torah, Hilchot Shechitah, X: 13).

Although he is clearly convinced of the problem, the Rambam's position appears to be contradictory. The Rambam does not at all doubt the efficacy of the therapeutic remedies available or the reliability of medical research. Yet he unhesitatingly and categorically affirms that halacha remains immutable. The succinct phraseology of the Rambam does not indicate explicitly why such halachot are indeed divorced from the underlying scientific concepts proffered by Chazal themselves.

The Chazon Ish, in his commentary on Yevamoth (141:3) offers an insight into the meaning of the Rambam which has wide-reaching implications, an approach which may serve as a paradigm for similarly related problems. The Divine blueprint for human civilization calls for periods of unbroken scientific progress and

advanced technological development. The hand of Providence supports and directs the research and discoveries of each generation. At the same time the Divine plan calls for halachic delineation based upon conditions of the natural order contemporaneous with the era of definitive halachic codification. The Gemara (Avodah Zara 9a) states that in terms of historical perspective a two thousand year period of "Torah" followed directly upon the first two thousand years of "emptiness," *tohu*, following creation. The third thousand-year period is, in its entirety, potentially the Messianic Era. It is only as a result of our many transgressions that the coming of the Messiah has been delayed. The delineation of a "two thousand years of Torah," which is sharply set off from subsequent ages, is seen by the Chazon Ish as indicating that this era was ordained as the period of halachic conceptualization and formulation. Halachic concepts are unchangeably determined as the product of Divine wisdom in which man cannot fully share. Such concepts are at least partially understood in human terms as mirroring the reality manifested during this formative period. Principles thus formulated remain eternally binding, even though empirical conditions may change during later periods of human civilization. In offering a physiological basis for the laws of *terefah*, Chazal knew full well that cures might be effected at a later date. Nevertheless G-d decreed that halacha remain constant. It is in this sense, asserts the Chazon Ish, that the Gemara declares (*Baba Metzi'ah 86a*) that Ravina and Rav Ashi, the compilers and editors of the Talmud, mark the end of "Haraah." Chronologically their lifetimes coincided with the close of the second millennium of "Torah." Hence, they are the last of the expositors of *haraah* — the last of the contributors to the formulations of eternal halachic canons.

We must recognize that the ultimate meaning of *mit'vah* and the true purpose of a precept are known fully and completely only to the mind of G-d. "For as the heavens are higher than the earth, so are My ways higher than your ways, and My thoughts than your thoughts." Comprehensive understanding is beyond the limits of human perspective. Since halacha is timeless, it appropriately contains elements of appeal to each ensuing generation. Some *mit'vot* are best appreciated in one generation, others in another — yet all are eternally valid.

## Recent Delving Into the Heart: How Far Can You Halachically Go?

By DR. FRED ROSNER

The world was stunned late in 1967 when a South African surgeon took the heart of one person and transplanted it into another. Since then, over 110 such operations have been performed and, as of this date, approximately one third of the recipients of "new hearts" survive. Much has and is being written about various aspects of this problem. The present paper attempts to point out some of the legal, moral, social and halachic questions that arise from heart transplantation.

From the moral standpoint, is not the publicity surrounding heart transplant operation excessive? Are physicians responsible for this "blurring out" of medical information prematurely? Is cardiac transplantation in fact premature at this stage of medical science? Is the procedure therapeutic, experimental or both?

Social questions are no less pressing than the moral problems just raised. Since there is a shortage of heart donors relative to the number of potential recipients, who should decide who shall live and who shall die when a heart becomes available? The physician in attendance? A group of physicians? Society? Furthermore, who

The strength of the reaction evoked by the news of the first few cardiac transplants is understandable. Cardiac transplantation in many respects is the ultimate *tour de force*, the "greatest grandstand play of all," the scheming of the alchemists and the dreams of the Cabbalists raised to transfinite powers — for implicit within switching hearts is the dream of life eternal which harks back to the second chapter of Genesis (though the heart which would bestow this longevity comes from a donor who is himself dying from some other irremediable defect).

The controversy attending heart transplants and the extensive surrounding publicity have had many salutary effects, many probably to be long lasting. The definition of the exact instant of death has been considerably sharpened from the Talmudic criteria (see Rashi, Yoma [Bavli] 85a) to the present use of highly sophisticated instruments for determining death. This has now been generally accepted as the cessation of electrical activity of the brain on electroencephalograms. The acceptance of criteria for a definite time of death is of great legal and practical significance.

A general problem in all transplants has been the great excess of recipients over potential donors which, in the case of patients with cardiac disease, is in a three to one ratio (N.Y. Times, November 24, 1968, page 67). Coupled with the great cost involved in the care of transplant patients (estimated at \$50,000 to \$80,000 per patient) criteria may ultimately have to be established to decide which patients will receive transplants. This may evolve into transplant committees wherein clergy members, lawyers, and sociologists will participate with the physician in the choice of recipients.

To overcome any possible conflict on the part of a surgeon to perform a transplant, two-team surgery has been introduced so that the surgeons removing the donor heart, often two physicians not connected with the transplant, determined death, are not those who would perform the transplant. New York State, for example, may enact such requirements into law (N.Y. Times, Dec. 13, 1968).

The perennial problem of family consent, be it for autopsies or for organ donations, recurred in Israel following the first transplant there at the Beilinson Hospital on

December 6, 1968. As has been frequently the case, the relatives of the donor were apparently not consulted. Chief Sephardic Rabbi Nissim, on learning of the transplant said, "I pray the transplanted heart will take and the patient will recover to the glory and honor of Israeli physicians," (N.Y. Times, December 7, 1968, page 20). In the United States, some of the problems concerning family rights will become academic if other states follow the lead of Virginia, which has granted the medical examiner sole jurisdiction in these matters (N.Y. Times, December 13, 1968).

As Jews, we face a number of important doctrinal questions concerning the general permissibility of tissue transplantation, from the living or from the dead, the rights of anyone to permit removing an organ from a deceased, and the desecration of the dead in obtaining the organ or organs.

In terms of the permissibility of tissue transplantation, there has been both *de jure* and *de facto* acceptance. There is abundant literature dealing with the subject of corneal transplants which utilize virtually exclusively the recently deceased as donors. Almost all rabbinical authorities permit corneal transplants though these are in actuality the least life threatening of all transplants, (see Jakobovits, I: "Jewish

Law Faces Modern Problems," *Studies in Torah, Judaism*, 1965, pages 79-81; Tifereth Zvi, *Code of Jewish Law and Responsa*; Kornmeil, N.H., New York, 1966, page 176). The underlying rationale for granting permission for corneal transplants from deceased are: 1) The prohibition of deriving benefit from the dead is not applicable since benefit occurs only after transplantation. At that time the transplanted tissue has become a living part of a live person and no longer a part of the dead; secondly during the operation, there is no benefit to the recuperant, only pain.

2) The cornea no longer requires burial since it is viable. 3) Desecration of the dead is not present since the transplanted cornea is sustaining another's life. There is the presumption that the donor would not have objected. In addition, rendering the tissue viable, not dead, eliminates the consideration of desecration. 4) Since the living may, from time to time, voluntarily serve as donors, the same procedure performed with a deceased as the donor cannot be construed as a desecration.

During the last quarter of a century, blood transfusions have become commonplace. Blood is considered one of the connective tissues in human histology. Every transfusion is, in effect, a tissue transplant.

By MARTHA MITTLEMAN

What is the halacha concerning euthanasia and what philosophy lies behind the halacha? *Yoreh Daya, dinei gosses* (one who cannot survive 72 hours without medication) states that a dying man is still considered alive. Even when the verdict is unquestionable, the man is for our purpose as any other living man.

And, "if the doctor sees that there is no treatment and the patient suffers terrible pains — is it permissible to administer a drug so that he will die immediately?" "Any form of active euthanasia is strictly prohibited. It is condemned as plain murder." Even in the case of a man who cannot even remain alive for more than three days, it is forbidden to hasten his death. It is, however, permitted to pray for mercy for the man that he might die.

If a patient instructs a doctor to kill him, the doctor must not, for even though he is only a *shaliach*, he is responsible for his actions, and is punishable by death *min Hashamayim*.

## Mercy vs. Life: No Mercy in Killing

According to the commandment of "Thou shalt surely cure" the doctor can administer medication to help the patient remain alive, even if his life will be tragic. But such treatment which is merely fending off death does not fall into the category of "returning life." The doctor, in this case, does not return to the body lost health, on the contrary, he causes the sickness to continue and the suffering to be prolonged. Therefore, in the case of a sick person whose strength can never be returned to him, even though the doctor is allowed to give him drugs which keep him alive—at any rate we are not commanded to do so.

The philosophy behind allowing a man to live out his days, even if they be in suffering, is that suffering is a form of atonement. This is found very clearly in our explanation of the apparent suffering of the just and prosperity of the wicked. The good are punished for their misdeeds in this life and are left to enjoy the coming life, while the wicked use up all their

"good times" in this life and are to suffer in the hereafter.

The seed of this idea can be found in Genesis. According to Rashi, after Abraham killed the five kings he worried that he had already been granted all the salvation he deserved until he was assured of G-d's further protection.

Rav Jacobowitz offers the idea that suffering which comes *biyaday Shamayim* and from which there is no means of escape — by submitting to death there is no *kiddush hashem* — on the contrary, one who despairs of mercy "when a sword rests on his neck" is opposing the royal decree. By wishing his days to be shortened, he is attempting to escape from his lot.

One must be worthy, then, to die peacefully. We find this so in the cases of Moses and Aaron who were worthy of *mitah binshikah* (death by the kiss of G-d). Knowing all this, how is it that we can

Law Faces Modern Problems," *Studies in Torah, Judaism*, 1965, pages 79-81; Tifereth Zvi, *Code of Jewish Law and Responsa*; Kornmeil, N.H., New York, 1966, page 176). The underlying rationale for granting permission for corneal transplants from deceased are: 1) The prohibition of deriving benefit from the dead is not applicable since benefit occurs only after transplantation. At that time the transplanted tissue has become a living part of a live person and no longer a part of the dead; secondly during the operation, there is no benefit to the recuperant, only pain.

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During the last quarter of a century, blood transfusions have become commonplace. Blood is considered one of the connective tissues in human histology. Every transfusion is, in effect, a tissue transplant.

The Torah states, "For as to the life of all flesh, the blood thereof is all one with the life thereof," (Leviticus 17:14). Yet the medical necessity of transfusions has gone unchallenged and tens of thousands of observant Jews have served as blood donors, with regular campaigns being conducted with the full knowledge and acquiescence of Rabbinical leaders in our most illustrious yeshivot. Observant transfusion recipients are almost too numerous to count. Despite the Biblical injunction, blood donations are being made in face of the fact that after 21 days, red blood cells which have not been transfused are discarded. For a variety of other cogent medical reasons, even fresh blood must occasionally be discarded. Our Rabbis, recognizing the overriding necessities of traffic in blood, have heeded the command, "and hide thyself from them..." (Deuteronomy 22:1) There can be no greater *de facto* recognition than the death of comment on blood transfusions or 2,000 renal transplants. Those who have come to the forefront in raising a hue and cry regarding cardiac transplants are to be suspected. They must defend their silence during a decade of kidney transplants, and almost three decades of active transfusion therapy. Ignorance certainly cannot be ac-

cepted as a plea. *De jure* and *de facto* recognition and approval must be given with the aim of substantiating the halachic grounds for all transplants at the earliest opportunity. The whole magnificent sphere of Jewish thought throughout the ages can be encapsulated in "that your days may be multiplied..." (Deuteronomy 11:21). To neglect the concept is to break faith with the spirit, if not the letter, of our great tradition. (An interesting discussion by a Conservative Rabbi, appears in Bronstein, H.: "Ethical and Religious Issues in Heart Transplants," *Reconstructionist*, XXXIX: 14-19, May 31, 1968.)

As can be inferred from Jakobovits (*Jewish Law*, p. 85), the problem of medicine and halachah demands a new appraisal. Physicians must be trained to appreciate the halachic position and the rights of the individual. The Rabbinic need understand the problems of medical progress and the changes in the direction of medicine in the modern era. Traditional Judaism now has within its grasp the facilities to provide forthcoming generations of physicians and of Rabbis with the medical and the halachic knowledge for critical evaluation of the rapidly evolving new theories and practices in the treatment and prevention of human ills.

presume to say who has the right to die in peace with no further suffering?

- 1. Rav Grunwald in Kol Bo on Avelut.
2. Rav Jacobowitz, Hapardes, October and December, 1956.
3. Rav Jacobowitz.

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## Autopsies: Limited Cuts

Mr. A. SPINNER

The shockingly widespread practice of autopsies in Israeli hospitals has triggered a tragic, often misunderstood wave of controversy. Despite widely held beliefs, objection to the present post mortem situation is not solely halachic. Far more fundamental is the opposition voiced on ethical grounds by numerous Israeli citizens, regardless of their religious beliefs, outraged at the gross violations of basic human rights and personal liberty incurred by hospitals and the staff in their unrestricted practice of post mortem operations.

It is an internationally accepted principle that no autopsy be performed without the prior consent of the deceased or his next of kin, except in cases involving suspicion of crime such as homicide, suicide, or foul play. Israel, however, has ironically taken exception to this principle by building into its law a legal loophole which reads as follows: "A doctor may dissect a body in order to determine the cause of death or to use parts of the body for healing purposes if three doctors sign a certificate attesting to the fact that the post-mortem operation will serve one of these purposes." (Sefer Hachukim, 184 4-8-43.) Although leading Israeli doctors have criticized this bill, countless other doctors have abused the bill to the point of performing autopsies, as a rule, without considering the wishes of the deceased or the bereaved family.

There is yet another dimension which has been added to this tragic situation. Israel, by virtue of its large heterogeneous ethnic grouping in its relatively small geographic area, has been chosen by research foundations as ideal for certain types of medical study. Frequently the study is un-

FREEDOM OF CHOICE. Some organizations, which provide death benefits for their members, appoint a so-called "official" funeral director. It should be understood, however, that the member-family is NOT obliged to use this "official" director in order to receive the organization's death benefits. Under New York State law, the family may make arrangements with ANY FUNERAL DIRECTOR OF ITS CHOICE. The law is quite specific: freedom of choice is ALWAYS the family's prerogative. RIVERSIDE MEMORIAL CHAPEL, INC. Directors CARL GROSSBERG — SOLOMON SHOULSON, Y.C. '47, Rets '49

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# Scientific Age of Earth Related to Torah's Concept

By DR. SANFORD ARANOFF

Concepts of halacha are defined only as measured by man, not by exact physical standards. Consider, for example, the concept of length. In physics, we decide on a definition which is to hold true in all circumstances. This is not so in halacha. The Sabbath boundary extends to 2,000 cubits beyond the city limits. This length is to be measured only with a linen rope 50 cubits long, and not by modern surveying methods.

The same is true for time. On festivals, we pronounce the blessing "... Who sanctifies Israel and the times." We mention Israel before "the times" because the festivals do not occur until the Rabbis — men — decide when the first day of the month shall occur.

This concept is further exemplified by Tosaphoth who say that Rosh Hashanah marks the first Friday of the Creation of the World. Time as we count it in Halacha did not begin until Adam was on the scene and could count it.

The fact that Torah concepts are defined in a man-oriented way agrees with modern-day physics. It removes certain areas of conflict between Torah and science. According to these ideas, when we say that the world is 5729 years old, we mean that 5728 years have elapsed since the birth of Adam. If we were to find ancient manuscripts with internal evidence which proves that they are older than this, we would have a serious problem on our hands.

Internal evidence means evidence from the writing itself, not from evidence such as scientifically dating the age of the paper. To the knowledge of the author, no such manuscript exists. Of course, there are paintings in caves, and human bones, which are dated by external methods, such as radioactive carbon dating, to be many tens of thousands of years old. The reasons why this does not pose a problem will be discussed below.

Torah concepts are not absolute physical concepts, but instead are defined by man in some ritual way. Suppose that we were to imagine that the entire universe was created in an instant, 6,000 years ago. An observer stationed at a distance 6,000 light years from us would say something quite different. A light year is the distance light travels in one year. The nearest star is over four light years distant. Our galaxy, the collection of stars one of which is the sun, is 30,000 light years in diameter. 6,000 light years is a small distance in galactic terms.

According to special relativity, if one observer notices that two events occur simultaneously, another observer moving with respect to the first will say that one event happened before the other. The faster the second observer is moving, the greater will be the time between events. Furthermore, the greater the distance between the events, the greater will be the time between the events. For example, if radio signals announcing the time are sent out simultaneously from stations in New York and Miami, the signal will not be simultaneous to an astronaut in orbit.

Suppose that an observer on earth sees that two stars are being created simultaneously. The observer 6,000 light years from earth, and moving with respect to the earth, (stars move at high speeds with respect to each other) will say that one star was created thousands of years before the other.

If all parts of the universe were created at the same time, we should be able to observe Creation going on at far parts of our galaxy. Although an individual star may be born, we do not see Creation going on.

We have no difficulty in swinging out to distances of many millions of light years. Yet we do not see Creation going on there. According to what we see, if Creation took place as mentioned in the Torah, it took place more than ten billion years ago. Astronomers hope to build telescopes on the moon so that they can see unobscured by earth's atmosphere, further than ten billion light years, and maybe see the act of Creation going on. However, even if they are able to show that Creation never took place, this will in no way contradict the

Torah, if we fully understand what we mean by concepts in the Torah and concepts in science.

Concepts in the Torah are either those measured by men or those of prophecy and mysticism. Examples of the latter are ministering angels and the Hereafter. Scientific concepts, on the other hand, are restricted to concepts which in principle are capable of measurement. For example, atoms consist of particles called electrons which surround the center of the atom, called the nucleus. It is impossible in principle, according to present physical theory, to measure the position of the electron. Consequently, in the theory describing the atom, called quantum mechanics, the concept of position of the electron simply does not occur. It is a meaningless concept; we do not say that it has meaning — for example, G-d knows the meaning — but that it has no meaning whatever.

Scientific laws were violated during the six days of Creation. It is meaningless in science to speak of violation of scientific laws. If we observe phenomena which appear to violate scientific laws, we revise our theories. However, by Creation of the World we must say that the scientific laws themselves were created, and hence they were violated during the time that preceded this creation. Violation of scientific laws is meaningless to the human mind. We understand the world only on

the basis of scientific laws. An example of a world without scientific laws is the Hereafter. Consequently, any statements about the period before the birth of Adam belong to the mystical and prophetic, rather to the domain of concepts measured by man.

Consider the following illustration: Suppose that Adam had chopped down a tree, and had come to the conclusion, say by counting the rings, that the tree was 5,000 years old. Yet he knew that the tree was created three days before he was born. This is an example of a conflict between science and the Torah. The resolution is as follows. The tree really is 5,000 years old, in spite of the prophecy, that is, G-d's speaking to Adam. Age is a scientific concept. Outside of science, age has no meaning. By age we mean duration in time. To see the need for scientific theories to understand this, consider the fact that duration in time depends upon the speed of the observer of the event, according to special relativity.

We can accept the reality of the age of the tree — 5,000 years — without rejecting the prophecy that the tree was created recently! Creation is a concept which is meaningless in science, as has been discussed above, as it is meaningless to speak of the creation of scientific laws. Such statements lie outside the domain of science. Scientific theories can neither con-

tradict nor confirm such statements. The question is actually raised by our sages as to why the Bible had to give us an account of the Creation. The answer is that the intent was not to give us a scientific concept, but a moral concept, namely that G-d is the owner and ruler of the world. (See, for example, the first Rashi in Genesis.) G-d did not tell Isaiah about the ministering angels to supply him with information on the Heavenly palace, but to teach him a moral lesson by way of parable.

When we deal with scientific questions, questions dealing with the understanding and development of the physical world, we must utilize scientific theories and language. When we deal with moral questions, questions dealing with how we should conduct our lives, then we should use Torah expressions. The conflict between the Torah and science as regards the age of the world is resolved by understanding that the Torah concepts dealing with the creation of the world are meaningless in science, and that science and the Torah actually speak about different things when they speak of the age of the world. The Torah speaks of Creation, while science speaks of age, duration in time, the time interval between events.

## Protest Autopsies

(Continued from Page 3, Col. 4)

related to particular illness and is designed merely for the accumulation of statistical knowledge regarding ethnic variations in contraction of diseases. The medical teams have, needless to say, amply availed themselves of the legal loophole in the Israeli law and thus increased the already staggering number of autopsies being performed.

American founded and funded Hadassah Hospital is unfortunately a strong abuser of the legal loophole. Hadassah claims that in the event of an objection to the performance of an autopsy initiated by the next of kin, none will be performed on the respective body. Even if this were to be the case, it would involve placing an inhuman burden upon a grief-ridden relative whose ability to take rational initiative is at that moment very minimal. Furthermore, if such objection is voiced, there is yet no guarantee that the legal loophole will not be turned to as a last resort.

Hadassah has furthermore buffalooed the Jewish community into believing that it is acting in accordance with an agreement reached in 1961 between itself and the Jerusalem Rabbinate. There is, in effect, no such agreement in existence. The only agreement ever concluded between these two bodies was the one contracted in 1944 during the British mandate, in which the Rabbinate permitted a performance of an autopsy where it was virtually impossible to obtain consent of a relative if the need was attested to by three doctors.

It should be emphasized that although the halacha permits and even advises the performance of an autopsy in the case of immediate saving of lives, Rav Moshe Feinstein, as well as other gedolim, has stated that under no circumstances is an autopsy to be performed by doctors without prior consent of the deceased or his next of kin.

Despite the gravity of the situation, Jewry is doing virtually nothing to alleviate the matter. Through meaningful demonstration and written protest, the Jewish student's role can be a crucial one in applying pressure on Hadassah to modify its conduct with regard to the practice of post mortems. To refrain from applying pressure would be to blatant *chillul Hashem*, for it would in effect demonstrate our willingness to tolerate both defilement of deceased bodies and premature death of the many who refuse to enter hospitals for fear that an autopsy might be performed in the event of their death.

If Hadassah were to adopt the universal principles of no autopsies without prior consent, it could by virtue of its prominence influence many Israeli hospitals to follow suit. Pressuring Hadassah might consequently be the key with which to unlock the Israeli post mortem dilemma.

# Science Expands Religion's Scope

By YITZCHAK FRIEDMAN

The question is a direct outgrowth of a more difficult and fundamental one: Can religion and science coexist or must they always pose a serious threat to one another? Though we feel "enlightened," we tend to be uneasy when confronted with science in the guise of religion or religion in the guise of science. We consider them mutually exclusive, each inhabiting its own intellectual territory, which the other cannot and should not infringe upon. To a degree, this is a valid feeling. Religion is a quest for truth; science is a quest for fact. Religion asks why; science asks how. Yet, the two combined foster not only a deeper understanding of the universe, but a deeper understanding of one another.

Even a cursory search through the Talmud will provide numerous examples of scientific material and discussion. The Rabbis of the Talmud understood that the study of scientific phenomena gives not only a greater insight into the workings of the universe, but supports the main thesis of religion: the existence of a supreme being. What is science but the study of G-d's world in all its beauty and complexity? Philosophically speaking, science cannot prove G-d's existence, but it can support it. Once a man believes, he does not need to be convinced; he needs to be supported. Faith is a leap across the chasm of unbelief; science can build a bridge across that chasm. Science and religion are intellectually symbiotic.

The Rambam, in his discussion of the fundamentals of Torah in the beginning of Mishnah Torah, discusses the Ptolemaic system of the universe. This explanation, now disproved, is mentioned only to demonstrate how the heavens worship G-d. Although the point could have been made without reference to Ptolemaic cosmogony, the Rambam brings in science to add greater weight and support to his religious argument. Even today, when we know that Ptolemy's theory has no basis in science, the religious argument retains its validity. Scientific data can change because we are dealing in a world of fact. And facts, as someone once said, are only what everybody agrees to at a certain time. Religion, however, is constant, for it can never be refuted in the world of fact.

Nevertheless, there is danger inherent in any strong linkage between religion and science. Religion must always sustain an independent philosophical validity, apart from science. Scientific support for religious conviction must never attain the rank of religious dogma.

The Yeshiva student must not only study science; he must examine it, as he should

everything, for the greater religious intensity he can derive from it. Like the world of religion, the world of science is awesome in its revelations. Scientific information transforms faith into a more deep and profound religious experience. Science expands religion; it does not contain it.

In today's world of expanding communications it is impossible to ignore scientific information. The Yeshiva student is no less susceptible to the proclamations of the media than anyone else. He cannot ignore it; sooner or later he must come to terms with scientific data. A one-sided view of science can be harmful to the Yeshiva student. Certainly, there are scientific theories and data which cannot be reconciled with what the Yeshiva student learns, but this is not reason enough to ignore the study of science. Undoubtedly, evolution poses a religious difficulty for the Yeshiva student, but to avoid teaching the theory does not prevent it from surfacing in a different context more troublesome than before. The benefits resulting from scientific education are most certainly commensurate with the risks involved. Skirting the issue is a far greater risk, which leaves the student to explore on his own — a potentially dangerous situation.

It is the job of the Yeshiva to prepare the student's religious thinking to accept science as a complement to religion. He must be given the proper perspective by which to judge and interpret scientific fact. He must learn that today's incontrovertible scientific theory may be discarded tomorrow, and by the very same scientists who proposed it today. Science must be studied, but not in a spiritual vacuum. To understand a painter, we must study his canvasses; to understand G-d, we must study his world.

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