



# ISSUES IN JEWISH THOUGHT

## EVOLUTION

— a personal view

By Rabbi Dr Jonathan Sacks MA (Cantab)

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## Foreword

Orthodox Judaism has long accepted and even encouraged the questioning mind. As Rabbi Emanuel Rackman, President of Bar Ilan University has put it:—

"A Jew dare not live with absolute certainty, not only because certainty is the hallmark of the fanatic and Judaism abhors fanaticism, but also because doubt is good for the human soul, its humility, and consequently its greater potential ultimately to discover its Creator."

*("One Man's Judaism")*

The problem for the modern Jew is not that he has questions but that he does not know where to find the answers. It is in the spirit of Rabbi Rackman's advice that Rabbi Dr Jonathan Sacks in this series "Issues in Jewish Thought" provides a route map for the journey to greater understanding. The booklets are brief and to the point, providing an introduction to Jewish thinking on each of the issues treated. The booklets should be particularly useful in forming the basis of an adult education programme or a study or discussion group at local synagogues. We are fortunate in having in Rabbi Sacks, a teacher who combines breadth and depth of learning with great clarity of exposition.

This series is part of an ambitious programme of publications on which the United Synagogue is embarked and in which Rabbi Sacks, holder of the Sir Immanuel Jakobovits Chair in Modern Jewish Thought at Jews College will play a prominent part. A second volume in this series is being published simultaneously and a third is being planned.

The programme also includes plans to produce a substantial series of practical guides to Judaism, the first volume being on Shabbat, and more basic pamphlets of instruction in Jewish ritual and practice. Through this range of publications it is hoped that members of the United Synagogue will increase their understanding of and strengthen their commitment to traditional Jewish values and practices, and thus enrich their experience of Jewish living.

Leslie Wagner  
Chairman, Adult Education  
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United Synagogue Youth and Community Services

A story with two beginnings.

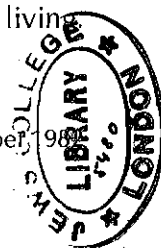
The first: God created the world from darkness and chaos. Stage by stage the wilderness of space resolved itself into order. Light appeared, and then the sky. Dry land emerged, and vegetation grew. The earth took its place in the planetary system. From the sea and then the land, animal life began. Finally there was man, a creature capable of recognising God. And God saw: and it was good.

The second: In the beginning was chaos, the raw material of life. By chance, life forms emerged, primitive at first, then growing in complexity. Through random mutations, a great diversity of animal forms appeared. But not all were equipped to survive. Those adapted to their environment and capable of withstanding the rivalry of others, grew fruitful; the others died away. Thus, through the twin mechanisms of variety — through genetic mutation — and selection — through the natural limits on population growth — species were formed, each peculiarly suited to its own environment. Fish gave rise to amphibian animals; they in turn gave rise to reptiles; from reptiles evolved mammals; and by chance, apes gave rise to man. In all this there was no planning and foresight: no-one to pronounce it good.

These, very roughly, are the ways in which the Torah and neo-Darwinianism tell the story of life up to the appearance of man. On the face of it they are very different. They could not, we imagine, both be true. Which are we to choose? If we adopt the account in Bereishith, then we are forced to turn our back on the scientific orthodoxy of the last hundred years. If we adopt the theory of evolution then we may have to conclude that something in the Torah is not true. This does not mean that it is a lie: for without doubt no-one knew better at the time when it was written. But it may mean something worse, from the point of view of Jewish faith: that the Torah is the work of men. If it were the word of God, it could not be mistaken.

This is why the theory of evolution has seemed to represent a major problem. We do not wish to dismiss the achievements of science. Still less are we ready to cast doubt on the Torah. But it looks as if we must do one or the other.

December, 1988



What exactly are the points of conflict? Which claims of the supporters of evolution theory do traditional Jews feel bound to call into question? Basically there are three:

**1. TORAH:** The literal meaning of the Torah's description of Creation must be rejected. The species did not spring into being, ready-made: they emerged slowly and gradually. They were not constructed by a Creator with a built-in suitability to their environment: this just happened, for those that were unsuitable could not survive. The process did not take six days: it took hundreds of millions of years. In short, taken literally, the Torah is bad science.

**2. GOD:** The idea that Creation was a deliberate act on the part of a Divine author must be rejected. The heart of the process — DNA mutation — is random, and therefore its results could not have been foreseen, let alone deliberately brought about. Even man, that exquisitely sophisticated mechanism, merely happened at the end of a long sequence of chances. "Man," says one evolutionist, "is the result of a purposeless and materialistic process that did not have him in mind. He was not planned. 'Nobody 'made' the world the way it is.

**3. MAN:** Man is not the 'image of God', unique and set apart from the animals. He is a direct descendant of the primates, and through them can trace his descent to the most primitive forms of life. As Desmond Morris puts it: "We **are** animals, after all. **Homo sapiens** is a species of primate, a biological phenomenon dominated by biological rules, like any other species. Human nature is no more than one particular kind of animal nature." We are not, as the Psalm says, "a little lower than the angels". At most we are a little higher than the apes.

These are the issues. How are we to resolve them? There are three lines of approach. The first is to cast general doubt on the methods and validity of science as a whole. The second is to accept scientific procedure, but to call into question the claims of the theory of evolution. Does it really fit the facts? The third is to argue that whether the theory is true or not, does not really affect Judaism at all. For even if it is true, it does not create the problems described above.

Each of these approaches has had its adherents in Jewish orthodoxy. We will consider them in turn.

## THE LIMITS OF SCIENTIFIC METHOD

The first and most radical approach is to say this: our knowledge of the distant past, as of the future, is necessarily speculative. We don't know for sure, but we can make a good guess. If we had no other source of information, then the scientific procedure would be the best available. This works by seeing regularities in the phenomena under study, and projecting those regularities into phenomena that are not under observation. An example at the simplest level: once we realise that we were brought into being by our parents, and that everyone else we know was likewise brought into being by their parents, then we can infer that our parents had parents, and so on backwards into the distance.

But as it happens, we do have another source of information, namely, the Torah. We believe it to be true and the word of God, and this is more than a speculation on our part. Therefore, if the Torah says that the world was created 5742 years ago, this is more certain than any scientific hypothesis to the contrary.

How are we to reconcile this recent date for the Creation, when the evidence — from fossil remains, the dating of rocks, and so on — points to a much older universe? The answer is that the Torah does not suggest that the world merely evolved: it was created fully formed. Therefore there is no reason why the universe should have been, 5742 years ago, exactly as scientists think it was. The only difference is that while they believe it arrived at that state after long chains of physical and chemical reactions, we believe that it was made that way from the outset.

A comparison: two people discover the fragment of a manuscript. It turns out to be a story, or more precisely, the last few chapters of a story. Each of them reconstructs the basic outline of the earlier

chapters; and their reconstructions more or less coincide. Along with the fragment they had found a piece of a book-cover, on which they could just decipher the words. 'Volume I'. One of them believes that the book-cover belongs to the fragment, and that therefore the story they have before them is the first part of a longer work. The other believes that the cover has nothing to do with the fragment, and that the story is in fact the middle or end part of a long series.

This, roughly, is the position between the scientist and the believer. They agree in their reconstruction of the last 5700 years; but for the scientist, the story goes back much further, and for the believer it begins there. His reason is the book-cover which says, Volume I: in this case the book-cover is the book of Bereishith.

There is another variant of this view, which does not suggest that the world came into being fully formed, but rather that the initial stages of its development were vastly more rapid than scientists assume.

Another comparison: we are watching a train complete the last stage of its journey. We know it has come two hundred miles; we see it complete the last mile at a lazy twenty miles an hour. We assume, quite rationally, that the trip must have taken ten hours or so, and we expect to see the passengers emerge tired and bored. As it happens we have got it wrong: the train has travelled at over a hundred miles an hour, and has merely slowed down for the last mile so as not to arrive before schedule. There was nothing wrong with our reasoning, except that we assumed that the train had all along been travelling at the speed we had observed.

The same with physical and chemical reactions. If the speed at which they occur now was always the case, then the universe is many hundreds of millions of years old. But it is possible that under the conditions prevailing at the birth of the universe, when so many relevant factors were different from what they now are, chains of reactions proceeded at extraordinarily rapid speeds, telescoping the time-scale dramatically.

Both of these approaches call into question the validity of extrapolation: the method by which science proceeds from what is

observed to what is not. This reading of the present back into the past assumes a long continuum in which basic laws are not subject to change: this is how things now happen, therefore it must be how they always happened. There is nothing wrong with this, says the believer, so long as we have no access to a more certain form of knowledge. But we have the Torah. And therefore we do not have to rely on speculation.

## GAPS IN THE EVOLUTION THEORY

The second defence of the Torah does not raise any doubts about scientific method in general. It simply suggests that the theory of evolution is unsubstantiated. It leaves too many questions unanswered.

On this view, we will agree that the universe is very old, and that the word 'day' in the first chapter of Bereishith means 'era' or 'phrase': it is a measure of God's time, not of ours. However, the world was created, and in the order laid out in the Torah. Distinct species existed from the very outset: they did not all emerge from a common source by haphazard mutation.

True, we do not expect science to come up with an account which is word-for-word identical with the opening of the Torah. For one thing, science only describes observable phenomena, and God is not one of them. For another, the Torah was never intended as a scientific text, and so it tells us only the broadest outlines. But by and large, things happened as the Torah tells us; and this means that the evolutionary account is wrong.

In what ways? Firstly, the time-scale is too short for life to have emerged by a completely random chemical combination. The first traces of life date back to two-and-a-half billion years ago; conditions under which life became possible existed around a billion years before that. Mathematical computations of the probabilities involved suggest that that is just not enough time for the random combinations to have worked themselves out.

Secondly, the transition from one species to another through a series of intermediate links is not borne out by the evidence of fossil remains. These 'missing links' are a serious embarrassment to the evolutionist; and they suggest that in some cases at least new species did emerge fully-formed and not as mere variants of older ones.

Thirdly, there are many differences within species which seem to have no explanation in terms of natural selection or adaptation to the environment. How is it — it has been asked — that most snakes survive without being poisonous, that most eels do not deliver an electric shock? Once one answers this question, one is left with the conclusion that the poisonous snake and the electric eel cannot be explained in simple survivalist terms.

These and other objections are live issues in biology; and the theory of evolution is far from being as universally accepted as it once was. The defenders of the Torah account therefore confidently predict that scientific opinion will eventually arrive at an account far closer to that of Bereishith. And in particular the random and purposeless element in the theory will have to be modified.

## JUDAISM AND THE IMPLICATIONS OF SCIENCE

The previous two approaches each highlight an important limit in the scientist's claim to certainty. The first stressed that all scientific induction rests on assumptions that have to be taken for granted and may not be true. The second reminded us that specific theories may leave a great deal unexplained. The third approach concentrates on a different limit entirely, namely, the irrelevance of scientific discovery to questions of morality, ethics, and religious belief.

To see how this is so, let us assume for the moment that the theory of evolution is true in every respect. We suggested at the outset that this would create serious problems for our traditional Jewish views about God, man, and the Torah. In fact, though, it is not so. None of these views is challenged at all.

Consider, first, man. It is suggested that if man is the linear descendant of the apes, he cannot be the image of God; he cannot be unique; he cannot possess a special soul; he is 'just' an animal. None of this follows. The evolutionist has not changed one detail in our knowledge of what man **is**; he has merely told us what man **was**.

He remains the only being that we know of, capable of an elaborate language, and hence of abstract thought and imagination. He can conceive of things other than those present to his senses. This makes him capable of moral choice; and it allows him to conceive of God. These two features are his uniqueness, as far as the Torah is concerned. 'Adam' is the name given to the first being that recognised God and heard His command. It may be that biologically, man is nothing special; but 'Adam' is the name given to the first being that recognised God and heard His command. It may be that biologically, man is nothing special; but 'Adam' is not a biological classification. In fact the Torah gives a graphic description of how 'Adam' emerged from the animals. God brought all the animals before him, and he gave them names. That is: he was capable of forming concepts, and thus of taxonomy — classifying things into general types. As soon as he had reached this stage, he was mentally no longer one of the animals: "He did not find a compatible partner".

The Torah is uninterested in the pre-history of **homo sapiens**. Because it is not a book of biology but the record of man's relationship to God, the first event which is decisive is the moment when a human being first speculated on the existence of a single Creator, some time not more than six thousand years ago. At that point he became a religious animal; or as the Torah describes it, the 'image of God'.

Judaism would never suggest that, considered as a biological organism, man is unique: on the contrary, he "was formed of the dust of the earth". But then, the biology of man is not the only, or the most interesting, of his aspects. If he thinks less of himself because Darwin claimed that he was descended from the apes, then this is a feeling supported by the Talmud: "Why was man made as the last of all beings? So that, if he should ever become too proud, he could be reminded that the gnats preceded him in the order of creation" (Sanhedrin 38a).

It is a serious fallacy to suppose that sentences like 'Man is only an animal' imply anything significant. There are two kinds of mistake here. The first: any class of things is 'only' a member of a larger class. There may be a rule, for example, forbidding judges to take bribes. We may protest: why pick on judges? They are only human beings; and human beings are only animals; and animals are only living things. One rule for all: no plant, animal or human may take a bribe. — True, but for the purposes of the law we are only interested in beings in a position to pervert the course of justice. And in ethics generally we are only interested in beings capable of exercising rational choice: hence the special place of man.

The second mistake: for any two things one can imagine a series of transformations by which one turned into another. A square can be turned into a circle by the infinite series: pentagon, hexagon . . . But this does not mean that a square is 'only' a circle. Nor is a man 'only' an ape, even if there were infinite gradations by which the latter turned into the former.

Jewish law gives man unique duties and rights. Most importantly: there is a rule against killing another person, but not against killing an animal. But this does not rest on the factual assumption that man was not descended from the animals. For the Torah equally makes a distinction in kind between an unborn foetus and a day-old child; and between a boy before and after the age of thirteen years and a day. Yet there is an obvious evolutionary link between foetus, child and man.

In short, neither the Torah view of the nature of man nor the halachic system, rest on a denial of evolution. Neither does its view of God.

It is commonly assumed that what happens by chance cannot be predicted, so it cannot be foreseen or planned or brought deliberately about. Hence, if man's evolution depended on pure chance — on random DNA mutations — then he cannot be a creature deliberately made by God.

This too is a mistake. What is random cannot be predicted by science; but God's foreknowledge is not a kind of scientific prediction.

To give a simple example: when the Israelites under Joshua were defeated at Ai, God told him that it was because there was a sinner amongst them. He did not tell him who it was, but He explained that he would indicate it obliquely by means of a lottery. Thus the wrongdoer, Achan ben Zerach, was discovered (Joshua ch.7; Sanhedrin 43b). A lottery is a purely random event; its outcome cannot be scientifically predicted; yet in this case it fell where God willed it. In general, for those who believe in Divine Providence, there are no 'accidents'. It is true that, given the improbabilities involved, man might never have emerged from the "agglomeration of macromolecules" that existed when the earth was waste and void. Nonetheless he did; and we believe that it was because God chose to create just this particular universe. Midrashic tradition has it that "God created many worlds and destroyed them" before He came to the one which He pronounced good. We need only lift up our eyes to the heavens at night to see the countless lifeless stars and planets, and wonder: Why the earth? Why man? These are insolubles. To the unbeliever they deepen his sense of meaninglessness; to the believer they confirm his feeling of meaning and privilege.

There is no scientific theory about the origins of the universe or of life, which could displace faith. For however we discover the world to have been brought about, we will always believe that God chose to bring it about that way; with a power and a foresight beyond scientific analysis. Science can never answer the question of why there should be anything rather than nothing. The question lies outside its boundaries.

Finally, the Torah. It is assumed by scientists who read the Bible that the opening of Bereishith is a factual account of creation. By any standards, this is a curious view. There are many different accounts of creation in the Torah. There is a magnificent one in Job ch.38, which begins, "Where were you when I laid the foundations of the earth?" There is another, in Psalm 104, couched in the most exquisite poetry: "You make the clouds Your chariot; You walk on the wings of the wind." There is a third in Proverbs ch.8, from the point of view of Wisdom. and there are others. There are even two versions of the creation of man, one in the first chapter of Bereishith and another in the second. In the first we see man as the last in the line of a sequence; in the second we are given a more detailed view of the tensions within

man (dust of the earth/breath of God) and between man and woman (same and yet different; bone of bone, yet another person).

We begin to realise that the Torah has many different ways of describing the same facts, depending on what moral it wishes to convey. Again: even the briefest glance at Bereishith will show that long periods of history are passed over in a few verses, whilst seemingly minor events are treated at length. What is important is what is morally instructive: not the neutral recording of facts. Again: Rambam taught us, in the Guide for the Perplexed, that one of the most important clues in the interpretation of Judaism is to compare the Torah with the surrounding pagan cultures of its time. Then we would understand what it was trying to lead us away from. In this case the record could not be clearer: the ancient near-eastern creation mythologies are full of the struggle of the gods against contending elements; the gods themselves are subject to nature rather than makers of it.

So we have at least some sense of what we are to learn from Bereishith, chapter one. That there is only one God; that there was no struggle to impose order — God said, and it was; that God is not part of the created universe or subject to any of its natural laws; that He is the maker of all men, not just of the Jewish people; that the world is fundamentally good, not evil; that there is something Divine in rest as well as creativity; that man has a unique capacity for recognising God, and hence a unique responsibility.

None of these ideas can be challenged by science, for they are not scientific propositions. Sometimes when we interpret the Torah, it seems as if we are using considerable license: as if there were no limit to what we could read it to mean. In fact there are very definite limits, but these are to be found not in a dictionary, but in Jewish tradition. For example: if we were to interpret a verse in such a way that it contradicted a **halachah**, a rule of Jewish law, then the reading would be invalid. Similarly, if our interpretation breached the basic elements of our faith — as set out by the sages and later by Rambam — it, too, would be unacceptable. The broad outline given above is a rough description of what would have to emerge from a reading of the first chapter of Bereishith for it to be acceptable to the believing Jew. And

as will be immediately obvious, a 'scientific' interpretation is neither sufficient nor very relevant.

In short, we can say that whether evolutionary theory is true or not is a matter for scientists to decide. But it is not a question in which Judaism has a special interest. For were it true, no essential element of Judaism — its beliefs or its laws — would be affected in any way.

It is important to understand the way in which science and Judaism relate. Science is part of the world the Jew inhabits. He welcomes advances in medicine and astronomy: these are of real importance to the halachic process. He welcomes technology too, both as a solution to general human problems, and to specific areas of Jewish concern where human rest is obligatory but automated processes are allowed — Shabbat, for example, or the Shemittah year. At a more intellectual level he appreciates the fact that the study of science increases man's wonder at the universe and his sense of his own relative smallness: for this reason Rambam commended it as a real route to the fear of God.

He is aware, at the same time, that the very activity of explaining observable phenomena in terms of other observable phenomena operates within strict boundaries. It answers no questions about meaning or values or faith. When scientists claim to do so, they are mistaken, whether we agree or disagree with their conclusions. The Jew has nothing to fear from science. Nor should he expect too much from it either.

It will always be possible to look at the sky and see empty space and to look at man as a biological accident. But equally it will always be possible to rise to the vision of the Torah:

"When I behold Your heavens, the work of Your fingers,  
The moon and the stars which You have established:  
What is man, that You are mindful of him? . . .  
Yet You have made him but a little lower than the angels."  
(Psalm 8:4-5)

## SUGGESTIONS FOR FURTHER READING

Much of the most interesting material, both by way of sources and modern responses, is gathered in **Challenge: Torah Views on Science and Its Problems**, edited by Carmell and Domb, A.O.J.S. and Feldheim; pp. 124-285. One writer who believed profoundly in evolution, in the sense of the continuous upward movement of the human spirit, was Rav Kook. A selection of his writings is available in English, entitled **Abraham Isaac Kook**, translated by Ben Zion Bokser, in the series, **The Classics of Western Spirituality**, SPCK, London.



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### Other pamphlets in this series:

- Pamphlet 1 — Faith and Reason
- Pamphlet 2 — The Holocaust
- Pamphlet 3 — The Meaning of Freedom
- Pamphlet 4 — The Messianic Age