Plan and Purpose

מכות כד: בא חבקוק והעמידן על אחת שנאמר (חבקוק ב') וצדיק באמונתו יחיה
Chavakuk established all mitzvos on one principle: "The *tzadik* lives by his faith"
revised: 22:19 כ"ה.חשון.תשפ"ג
DRAFT. YSO, May 2021

When a famous astronomer was asked why he was an atheist, he answered: "Because I see G-d everywhere in the Bible and nowhere in the Universe".[1]

By contrast, the prophet *Yeshaya* (40.26) exclaims:

> שְׂאוּ־מָרוֹם עֵינֵיכֶם וּרְאוּ מִי־בָרָא אֵלֶּה הַמּוֹצִיא בְמִסְפָּר צְבָאָם לְכֻלָּם בְּשֵׁם יִקְרָא מֵרֹב אוֹנִים וְאַמִּיץ כֹּחַ אִישׁ לֹא נֶעְדָּר
> *Lift up your eyes on high: Who created these? He Who sends out their host by count, Who calls them each by name: Because of His great might and vast power, not one fails to appear.*

A superficial analysis might not manifest G-d's Wisdom and Kindliness. But the prophet exhorts mankind not to give into laziness and pride; rather man must use his intellect to see what is in front of his eyes (see *Rashi* and *Radak* to *Yeshaya*). The Rambam (MN2.19) writes:

> The best proof for design (*intention*) in the Universe I find in the different motions of the celestial spheres, and in the fixed position of the stars in the spheres. For this reason you find all the prophets point to the spheres and stars when they want to prove that there must exist a Divine Being. Thus Abraham reflected on the stars, as is well known; Isaiah (40.26) exhorts us to learn from them the existence of G-d, and says, "*Lift up your eyes on high, and behold who hath created these things*?" Jeremiah calls G-d "The Maker" of the heavens"; Abraham calls Him "The G-d of the heavens" (Gen. 26.7) Moses, the chief of the Prophets, uses the phrase explained by us (1.70) "He who rideth on the heavens" (Deut. 33.26).[i]

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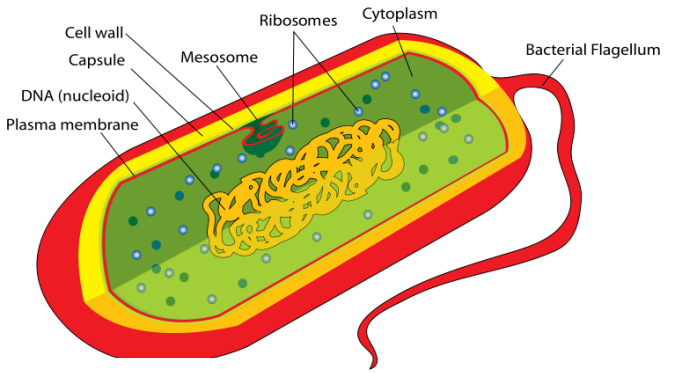
[1] Rabbi Akiva Tatz, *As Dawn Ends the Night*, Menucha Publishers, 2018. Rabbi Tatz writes: "This is a serious challenge; it requires analysis and deserves a response.

1 The stunning unity of design in the universe



Bacterium Cell
(Wikipedia)

Our bodies are made up of trillions of cells. At any given time, each cell is doing thousands of jobs, like creating and using energy, and manufacturing thousands of different kinds of proteins which are machines used to build skin, bones, the heart, the eye, etc.

In the nucleus of the cell is the DNA instructions (written in long sequences of letters like ATGC called nucleotides) for making proteins. Proteins build the structures and carry out the chemical reactions necessary for life.

The DNA information is sent to factories called ribosomes that decode the instructions and produce proteins. Proteins themselves are long sequences of characters (called amino acids).

When we look around us we do not see a chaotic universe as if there are competing forces at work that are antithetical to each other. What we see, on the whole, is a universe fine-tuned for life and exploration:

- Physicists recognize four fundamental forces that determine the characteristics of the universe. These are the gravitational force, the strong nuclear force, the electromagnetic force and the weak force; these depend on various constants such as the gravitational constant and the speed of light.

- "If we modify the value of one of the fundamental constants, something invariably goes wrong, leading to a universe that is inhospitable to life as we know it. When we adjust the second constant in an attempt to fix the problem(s), the result, generally, is to create three new problems for everyone that we 'solve'. The conditions in our universe really do seem to be uniquely suitable for life forms like ourselves, and perhaps even for any form of organic complexity".[2]
- For example, the constant β is the ratio of electron to proton mass (1/1836). The small value of β ensures that electrons occupy well-defined positions in the atom. Without that, processes such as DNA replication would fail. If we increase the strong nuclear force by a small amount then biological vital elements like carbon would not exist. Making these constants too small would likewise be problematic for chemistry and life.[3]
- Without the Pauli exclusion principle of quantum mechanics, electrons would collapse into the nucleus and thus atoms would be impossible. If masses did not attract each other in the right proportion, there would be no planets or stars, and life would be impossible. "These constants represent the edge of our knowledge. Richard Feynman called one of them —

[2] John Gribbin and Martin Rees, "Cosmic Coincidences", p. 269, 1989
[3] John D. Barrow, The Constants of Nature, 2004. Pp165-169

the fine-structure constant (α approximately equal to 1/137), which characterizes the amount of electromagnetic force between charged elementary particles like electrons — 'one of the greatest ... mysteries of physics: a magic number that comes to us with no understanding by man.' An innovative, elegant physical theory that actually predicts the values of these constants would be among the greatest achievements of twenty-first-century physics." Small changes in this number would make carbon based life infeasible.[ii]

- Our solar system is within the Galactic Habitable Zone, located in a region of the galaxy that is chemically advantageous for the development of life, and avoiding an excessive number of catastrophic cosmic events with the potential to damage life on its otherwise habitable planets.
- Earth orbits an unusual main sequence G2 dwarf star (the sun) that provides just the right amount of chemical activation energy for the processes of life.
- We are in the Circumstellar Habitable zone with respect to the sun, not too hot and not too cold.
- Earth is protected from outer space radiation by giant planets like Jupiter.
- We have a nearly circular orbit that keeps our planet habitable.
- We are orbited by a large moon that stabilizes the earth's axis and ensure relatively temperate climate
- Earth has a magnetic field that protects it from solar radiation.
- In a remarkable process called photosynthesis light energy from the sun is converted into chemical energy that allows plant life to grow and develop. Oxygen that is produced during photosynthesis is released into the atmosphere is needed for animals to breathe.
- We have an oxygen rich atmosphere needed for life.
- We have large amounts of liquid water necessary for life.
- The water cycle is critical for life on earth. Almost all the water vapor in the air comes from water that evaporated from the oceans. The water vapor condenses higher up in the air and forms clouds. Winds blow the clouds towards dry land. The final step of the water cycle is precipitation in which water falls from the sky, both in liquid and frozen form for the use of plants and animals. The excess water runs off back into the rivers and oceans and the cycle starts anew.[4]
- The building blocks for life such as carbon, hydrogen, oxygen and nitrogen are relatively abundant. The machinery of the cell is very much dependent on compounds made of carbon.
- All life is based on the cell and the DNA machinery in the nucleus of the cell. It is the blueprint for all living organisms on earth.
- Metals are relatively abundant and are needed in hemoglobin. Cytochrome-c-oxidase introduces oxygen into cells for the production of energy; this molecule combines the talents of iron and copper ions to convert reduced oxygen to water.
- The cell is full of miracles of cooperating nano-machinery of bewildering richness.
- Cells make up tissues, tissues make up organs and organs make up organ systems of organized complexity such as digestion system, the endocrine system and the circulation system.

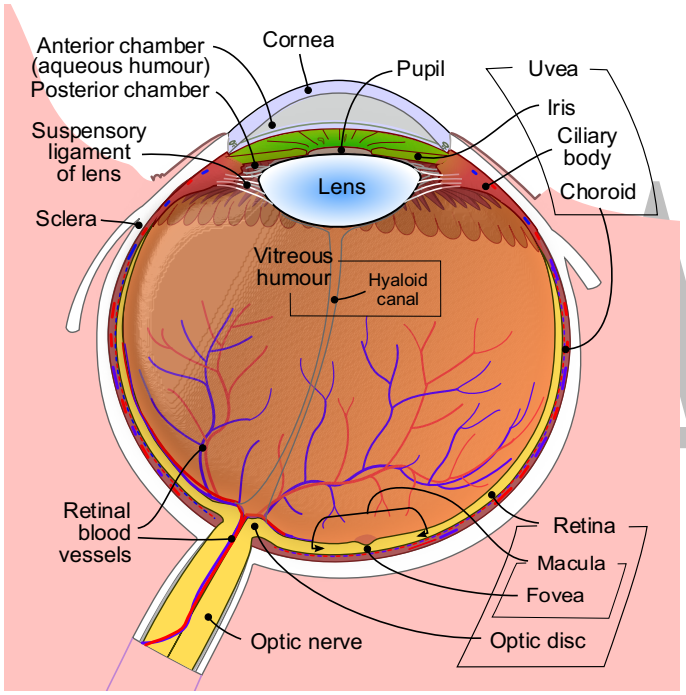
[4] For the foregoing bullet points, see *The Privileged Planet: How Our Place in the Cosmos Is Designed for Discovery*, 2004, Guillermo Gonzalez and Jay Richards. Regnery Publishing. See the accompanying video.

- "Axe's improved estimate of how rare functional proteins are in sequence space has now made it possible to calculate the probability that a 150 amino-acid compound assembled by random interactions in a prebiotic soup would be a functional protein. … The odds of getting even one functional protein of modest length (150 amino acids) by chance from a prebiotic soup is no better than 1 chance in 10^{164}. . . . Now consider that there are only 10^{80} protons, neutrons, and electrons in the observable universe. Thus, if the odds of finding a functional protein by chance on the first attempt had been 1 in 10^{80}, we could have said that's like finding a marked particle – proton, neutron, or electron (a much smaller needle) – among all the particles in the universe (a much larger haystack). Unfortunately, the problem is much worse than that. With odds standing at 1 chance in 10^{164} of finding a functional protein among the 150-amino-acid compounds, the probability is 84 orders of magnitude (or powers of ten) *smaller* than the probability of finding the marked particle in the whole universe. Another way to say that is the probability of finding a functional protein by chance alone is a trillion, trillion, trillion, trillion, trillion, trillion, trillion times smaller than the odds of finding a single specified particle among all the particles in the universe".[5]
- The heart is an organ that pumps blood to the entire body. Man-made pumps last for 10 or 15 years, but the heart pumps faithfully and continually for 70 years or more. The right atrium receives deoxygenated blood from the veins. The blood is then pumped to the right ventricle from where it is pumped to the lungs where harmful carbon dioxide is removed and the blood is refreshed with live-giving oxygen. The blood then circulates from the lung to the left atrium and the left ventricle. From there, the blood is distributed via the main artery (aorta) to the entire body. The heart has a natural pacemaker to control the heart rate. This stunningly designed system generates electrical impulses stimulating the heart to contract and pump blood.
- "Molecular biology has shown that even the simplest of all living systems on the earth today, bacterial cells, are exceedingly complex objects. Although the tiniest bacterial cells are incredibly small, weighing less than 10^{12} grams, each is in effect a veritable micro-miniaturized factory containing thousands of exquisitely designed pieces of intricate molecular machinery, made up al-together of one hundred thousand million atoms, far more complicated than any machine built by man and absolutely without parallel in the nonliving world." … "The complexity of the simplest known type of cell is so great that it is impossible to accept that such an object could have been thrown together suddenly by some kind of freakish, vastly improbable, event. Such an occurrence would be indistinguishable from a miracle".[6]
- "The *Miracle of the Cell* provides compelling evidence that long before life emerged on our planet, the design of the carbon-based cell was foreshadowed in the order of nature, in the exquisite fitness of the laws of nature for this foundational unit of all life on Earth. Nowhere is this fitness more apparent than in the properties of the key atomic constituents of the cell. Each of the atoms of life—including carbon, hydrogen, oxygen, and nitro-gen, as well as several metal elements—features a suite of unique properties fine-tuned to serve highly specific, indispensable roles in the cell. Moreover, some of these properties are specifically fit for essential roles in the cells of advanced aerobic organisms like

[5] Meyer, *Signature in the Cell*, p. 212.
[6] Michael Denton, *Evolution: A Theory In Crisis*, Adler & Adler, 1986. See also Evolution: Still a Theory in Crisis, 2016

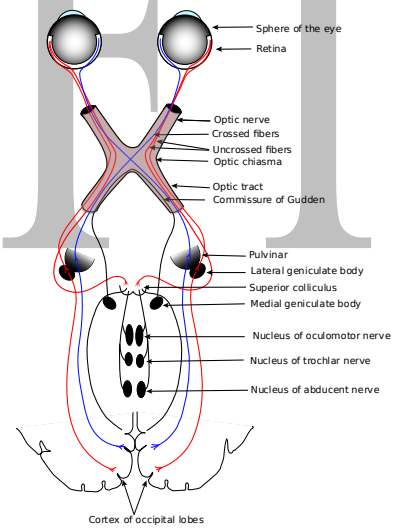
ourselves".[7]

- The mammalian brain is the most complex organ of all, and the human brain even more marvelous. It is made of many specialized parts that work together for control of the nervous system, breathing, hearing, visual processing, balance and coordination, and thinking. Human beings have mental powers that include the material mental powers of animals, but humans also have the power to contemplate *universals*, i.e. concepts that have no material instantiation. Human beings think about an endless library of abstract concepts including mathematics, literature, art, language, justice, and mercy. Human beings are *rational*. "The miracle of the appropriateness of the language of mathematics for the formulation of the laws of physics is a wonderful gift which we neither understand nor deserve".[8]



The eye, like a camera, has a purposeful arrangement of parts. The iris and the pupil control how much light to let into the back of the eye, much like the shutter of a camera. When it is very dark, our pupils get bigger, letting in more light; when it is very bright our irises constrict, letting in very little light.

The lens of the eye, like the lens of a camera, helps us to focus. But just as a camera uses mirrors and other mechanical devices to focus, we rely on eyeglasses and contact lenses to help us to see more clearly. The focus light rays are then directed to the back of the eye, on to the retina, which acts like the film in a camera. The cells in the retina absorb and convert the light to electrochemical impulses which are transferred along the optic nerve to the brain. The brain is instrumental in helping us see as it translates the image into something we can understand.[9]



There is much more to say. But what we see is a unity of plan and purpose, all parts fitting together to produce the whole that indicates a unity of design and pointing to a single Designer.

[7] Blurb from Michael Denton, *The Miracle of the Cell*, Discovery Institute, 2020.
[8] "The Unreasonable Effectiveness of Mathematics in the Natural Sciences," in Communications in Pure and Applied Mathematics, vol. 13, No. I (February 1960). John Wiley & Sons, Inc. 1960.
[9] Images taken from Wikipedia on the eye an optic nerve, by Rhcastilhos. And Jmarchn. 2022.

2 Atheistic Scientists and Philosophers testify

Richard Lewontin. Biologist.

> Our willingness to accept scientific claims that are against common sense is the key to an understanding of the real struggle between science and the supernatural. We take the side of science *in spite of the patent absurdity of some of its constructs*, in spite of its failure to fulfill many of its extravagant promises of health and life, in spite of the tolerance of the scientific community for unsubstantiated just-so stories, because we have a prior commitment, a commitment to materialism. . . . It is not that the methods and institutions of science somehow compel us to accept a material explanation of the phenomenal world but, on the contrary, that we are forced by our a priori adherence to material causes to create an apparatus of investigation and a set of concepts that produce material explanations, no matter how counterintuitive, no matter how mystifying to the uninitiated. Moreover, that materialism is absolute, *for we cannot allow a divine foot in the door*.[10]

Thomas Nagel. Philosopher.

> In thinking about these questions I have been stimulated by criticisms of the prevailing scientific world picture… by the defenders of intelligent design. Even though writers like Michael Behe and Stephen Meyer are motivated at least in part by their religious beliefs, the empirical arguments they offer against the likelihood that the origin of life and its evolutionary history can be fully explained by physics and chemistry are of great interest in themselves. Another skeptic, David Berlinski, has brought out these problems vividly without reference to the design inference. Even if one is not drawn to the alternative of an explanation by the actions of a designer, the problems that these iconoclasts pose for the orthodox scientific consensus should be taken seriously. They do not deserve the scorn with which they are commonly met. It is manifestly unfair. …
>
> I believe the defenders of intelligent design deserve our gratitude for challenging a scientific world view that owes some of the passion displayed by its adherents precisely to the fact that it is thought to liberate us from religion. That world view is ripe for displacement.[11]

Paul Davies. Physicist.

> Concepts like information and software do not come from the natural sciences at all, but from communication theory . . . and involve qualifiers like context and mode of description – notions that are quite alien to the physicist's description of the world. Yet most scientists accept that informational concepts do legitimately apply to biological systems, and they cheerfully treat semantic information as if it were a natural quantity like energy. Unfortunately, "meaning" sounds perilously close to purpose, an utterly taboo subject in

[10] Richard Lewontin, "*Billions and Billions of Demons*" at New York Review of Books (January 9, 1997), a review of Carl Sagan's The Demon-Haunted World: Science as a Candle in the Dark (Random House).
[11] Mind and Cosmos: Why the Materialist Neo-Darwinian Conception of Nature Is Almost Certainly False. Oxford University Press, 2012.

biology. So we are left with the contradiction that we need to apply concepts derived from purposeful human activities (communication, meaning, context, semantics) to biological processes that certainly appear purposeful, but are in fact not (or are not supposed to be).... [A]t the end of the day, human beings are products of nature, and if humans have purposes, then at some level purposefulness must arise from nature and therefore be inherent in nature. . . . Might purpose be a genuine property of nature right down to the cellular or even the subcellular level?[12]

Richard Dawkins. Biologist.

"Eldredge and Gould [famous evolutionists] certainly would agree that some very important gaps really are due to imperfections in the fossil record. *Very big gaps, too*. For example the Cambrian strata of rocks, vintage about 600 million years, are the oldest ones in which we find most of the major invertebrate groups. And we find many of them already *in an advanced state of evolution, the very first time they appear.*

It is as though they were just planted there, without any evolutionary history. Needless to say, this appearance of *sudden* planting has delighted creationists. Evolutionists of all stripes believe, however, that this really does represent a very large gap in the fossil record, a gap that is simply due to the fact that, for some reason, very few fossils have lasted from periods before about 600 million years ago. One good reason might be that many of these animals had only soft parts to their bodies: no shells or bones to fossilize. If you are a creationist you may think that this is special pleading.

My point here is that, when we are talking about gaps of this magnitude, there is no difference whatever in the interpretations of 'punctuationists' and 'gradualists'. Both schools of thought *despise* so-called scientific creationists equally, and both agree that the major gaps are real, that they are true imperfections in the fossil record. Both schools of thought agree that the only alternative explanation of the sudden appearance of so many complex animal types in the Cambrian era is divine creation, and both would reject this alternative". [13]

Franklin Harold. Molecular biologist.

"We should reject, as a matter of principle, the substitution of intelligent design for the dialogue of chance and necessity (Behe 1996); but we must concede that there are presently no detailed Darwinian accounts of the evolution of any biochemical system, only a variety of wishful speculations".[14]

[12] Paul Davies, The Fifth Miracle: The Search for the Origin and Meaning of Life (Simon and Schuster, 1999), pp. 121

13 Richard Dawkins, The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe without Design Richard Dawkins, Norton, New York, 1986, p229-230. Italics added.

[14] Franklin M. Harold, *The Way of the Cell: Molecules, Organisms, and the Order of Life*, Oxford University Press, Oxford ; New York, 2001. Emphasis added.

James Shapiro. Biologist.

> "In fact, there are no detailed Darwinian accounts for the evolution of any fundamental biochemical or cellular system, *only a variety of wishful speculations*. It is remarkable that Darwinism is accepted as a satisfactory explanation for such a vast subject – evolution – with so little rigorous examination of how well its basic theses work in illuminating specific instances of biological adaptation or diversity".[15]

It is remarkable that to produce even one functional protein of modest length (150 amino acids) by chance in the prebiotic soup would use up much more than the probabilistic resources of the entire universe. So, how did all this meaningful information and amazing machinery arise by undirected natural processes? The truth is that the scientists do not know. The empirical evidence suggests that undirected natural processes are not capable of overcoming the problems. Physicist Paul Davies writes:

> "When I set out to write this book I was convinced that science was close to wrapping up the mystery of life's origin. The dramatic evidence for microbes living deep underground promised to provide the 'missing link' between the prebiotic world of biochemical soups and the first primitive cells. And it is true that many scientists working in this field confidently believe that the major problems of biogenesis have largely been solved. Several recent books convey the confident message that life's origin is not really so mysterious after all. However, I think they are wrong. Having spent a year or two researching the field I am now of the opinion that there remains a huge gulf in our understanding. To be sure, we have a good idea of the where and the when of life's origin, but we are a very long way from comprehending the how. *This gulf in understanding is not merely ignorance about certain technical details, it is a major conceptual lacuna*".[16]

As mathematician David Berlinksi (an agnostic) writes:[17]

- The suggestion that Darwin's theory of evolution is like theories in the serious sciences — quantum electrodynamics, say—is *grotesque*. Quantum electrodynamics makes accurate predictions. Darwin's theory makes no tight quantitative predictions at all.
- The astonishing and irreducible complexity of various cellular structures has not yet successfully been described, let alone explained.
- A great many species enter the fossil record trailing no obvious ancestors and depart for Valhalla leaving no obvious descendants.
- Tens of thousands of fruit flies have come and gone in laboratory experiments, and every last one of them has remained a fruit fly to the end, all efforts to see the miracle of speciation unavailing.

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[15] James Shapiro, Darwin's Black Box: The Biochemical Challenge to Evolution.; book reviews, National Review,16, p62-65, September, 1996

[16] Paul Davies, *The Fifth Miracle: The Search for the Origin of Life*, Simon and Schuster, 1999, page 17. Italics added.

[17] David Berlinski, "All Those Darwinian Doubts", Wichita Eagle, March 9, 2005. The order of presentation has been changed.

3 The Design Argument

Scientists and philosophers investigate the *origin* of the phenomena of nature or history to determine the cause of those phenomena. When competing hypotheses for the origin of these effects are judged, causal adequacy is a key criterion in an inference to the best explanation. The assessments of explanatory power leads to a conclusive inference only when there is just one known *cause* for the *effect*.

From a BBC article, 2019.

By Sue Nelson 4th February 2019

How can astronauts build a lunar base if traditional building materials are too heavy to load into a rocket?

Consider the above image which shows the surface of the *moon* (with extremes of temperature beyond that of the Sahara desert, no atmosphere, no lakes of liquid water, no life), and *earth* (a beautiful blue privileged planet) rising on moon horizon.[18] The title of the article is "How can astronauts build a lunar base if traditional building materials are too heavy to load into a rocket?".

[18] "For all the people on Earth, the crew of Apollo 8 has a message we would like to send you." So began the transmission from the Apollo 8 Command Module, in orbit around the moon, on 24 December 1968. The first astronauts to the moon saw what astronomers later concluded, that Earth is a life-friendly oasis in the vastness of space. Here is the transcript of what they said viewing earth against the moon horizon: "*William* Anders: In the beginning God created the heaven and the earth. And the earth was without form, and void; and darkness was upon the face of the deep. And the Spirit of God moved upon the face of the waters. And God said, Let there be light: and there was light. And God saw the light, that it was good: and God divided the light from the darkness." *Jim Lovell*: "And God called the light Day, and the darkness he called Night. And the evening and the morning were the first day. And God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters. And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament: and it was so. And God called the firmament Heaven. And the evening and the morning were the

So we sit back, close our eyes, and imagine arriving on the moon on Elon Musk's space rocket, and seeing on the once deserted landscape a small habitat enclosed by a dome that blocks dangerous electromagnetic radiation and only allows in healthy sunlight, machinery allowing the light to be used for photosynthesis, so there are plants and animals, liquid water, and all the minerals and oxygen needed to sustain life. The habitat has to be cooled during the Moon-day and heated during the Moon-night. It will need a water recycling system, a power generating system, and food storage and preparation facilities.

Now we only have two choices about the origin of this new lunar habitat in a place where once there was none.

1. A designing intelligence is implicated (e.g. NASA engineers or perhaps aliens).

2. The habitat came about by unguided natural processes such as meteors hitting the moon, erosion and solar winds (or maybe by magic just suddenly appearing out of nothing and from nothing).

Is the unguided option #2 reasonable?

Most would reject #2 and opt for option #1 based on the *evidence*.

The moon habitat exhibits a purposeful arrangement of parts. We have never observed unguided processes (that did not have us in mind) evolving systems of organized complexity such as the habitat.

Wherever we have seen the design and construction of systems such as the proposed moon habitat, intelligence is implicated. So our uniform human experience deduces that option #1 is reasonable. This is an inference to the best explanation.

How do we perceive the work of a mind/intelligence? Minds (and only minds) have purposes. Thus, to the extent that a Mind can manipulate things, a Mind can arrange parts to achieve its purposes. Of course, we ourselves have minds. And it is a fundamental power of mind that it can discern purposes. Thus we can recognize that a mind has acted by perceiving a purposeful arrangement of parts. That is actually the only way we recognize other minds. For the purposes of detecting other minds, "parts" can be the purposeful arrangement of sounds in speech; words and letters in writing; mechanical parts in machinery; etc. So when we see the moon habitat we see that it was designed and constructed by a mind. In fact, we have never seen any evidence (beyond

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second day." *Frank Borman*:"And God said, Let the waters under the heavens be gathered together unto one place, and let the dry land appear: and it was so. And God called the dry land Earth; and the gathering together of the waters called He Seas: and God saw that it was good." In his book about Apollo 8, Robert Zimmerman notes that the astronauts had chosen the words of Genesis not as a parochial religious expression but rather "to include the feelings and beliefs of as many people as possible." Indeed, most Earth residents who look at the wonders of nature or the awe-inspiring Earthrise image instinctively perceive the majesty of a grand design. Of course, many scientists and others dismiss such perceptions as mere sentiment. Yet scientific evidence has increasingly confirmed what the astronauts, and many who heard them, intuitively sensed on seeing the image of Earth from space.

fanciful "just-so" stories) that unguided processes can evolve systems of organized complexity such as the moon habitat. But our uniform experience shows that intelligence can design and construct systems that exhibit purposeful arrangement of parts.

Even if intelligent NASA engineers or alien scientists designed the moon habitat, the problem remains: who designed these humans or aliens? Even more, who designed that privileged planet that we see rising on the horizon of the moon, that shows even greater organized complexity than the moon habitat. In fact, the whole cosmos is fine-tuned for life. Physicist have discovered that the fundamental laws of gravity and electromagnetism and the parameters and constants such as the speed of light or the mass of an electron are finely tuned (i.e. must lie within a very narrow range) to make life and even basic chemistry possible. So a transcendental intelligence that is outside our universe of time and space is a reasonable explanation for the origin of our universe.

1. The universe consists of many systems of purposeful arrangements of parts, fine-tuned to make life and even basic chemistry possible (section 1).
2. Evolutionists have been unable to provide detailed Darwinian pathways for these biological systems, nor have they been able to provide credible chemical pathways for the origin of life, only a variety of wishful speculations (see section 2).
3. Our uniform experience is that whenever we see a purposeful arrangement of parts, intelligence is implicated.
4. **Conclusion**: A vast transcendental intelligence outside the universe of space and time is the cause of the design and origin of the universe.

The *Chovos Halevovos* expresses best what we should conclude from "signs of wisdom" (סימני חכמה) we see in the cosmos:

> There are men who say that the world came has come into existence by chance, without a Creator Who caused it and formed it. I find this rather astonishing!
> How could any rational human being, in his right mind, entertain such a notion? …
> Surely you would agree that, if a man were accidentally to spill some ink onto a blank sheet of paper, it is impossible that it would take the shape of orderly writing and legible lines, as are written with a pen. If a person were to show us [a page of] orderly writing - that could only have been written with a pen - and say that ink had spilled out onto the page and had, on its own, taken the shape of written characters, we would be quick to deny it to his face, as this could not have come about without a purposeful designer. Now, since this appears to us to be an impossibility in regard to written characters, [which are merely] products of convention, how can one say - in regard to something more subtle in its art, more difficult in its achievement and of boundless depth - that it is without the intent of a Designer, without the wisdom of an omnipotent Intelligence?
>
> All that we have cited, in demonstrating the existence of the Creator from the perspective of His works, is sufficient for anyone who will understand and admit the truth. It is also

> sufficient to answer those who say that the world is eternal and to refute their contentions. Know this well![19]

4 Bibliography for the scientific details

- Chemical Evolution: *Signature in the Cell*, Stephen C. Meyer, HarperOne, 2009.
- Biological Evolution: *Darwin's Doubt*, Stephen C. Meyer, 2013, HarperOne.
- Cosmic evolution: *The Miracle of Man*, Michael Denton, The Fine Tuning of Nature for Human Existence, Michael Denton, 2022.

5 The great error of the philosophers of the Enlightenment

In the previous sections, we have provided an outline of the design argument as found in *Shaar Habechina* of the *Chovos Halevavos*. But we have not even touched on the powerful arguments in *Shaar Hayichud* and the *Moreh Nevuchim*. To do this, we will need to present further metaphysical arguments that are beyond the scope of this article. The following remarks may be considered as in introduction.

After surveying the thinking of the modern intellectual elite, philosopher Edward Feser writes:

> The standard one-line summary of the Enlightenment goes like this: Because religion is based on blind faith, the founders of modern Western thought sought to free science and philosophy from its irrational embrace, to reduce or eliminate its influence on public life, and to re-orient even private life toward improving this world rather than preparing for an illusory afterlife. As we have seen, this has things almost precisely backwards. *In fact the moderns didn't reject religion for resting on blind faith; it would be truer to say that they falsely accused it of resting on blind faith so that they could justify their rejection of it, and cooked up a new conception of what should count as "rational" in the hope of making the accusation stick*. More precisely, their desire to re-orient human life toward this world and reduce the influence of religion led the early modern thinkers to abandon traditional philosophical categories and to redefine scientific method so that reason could no longer provide religion with the support it had always been understood to give it, at least not in any robust way.[20]

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[19] Rabbi Bachya ben Joseph ibn Paquda, Duties of the Heart, translated by Daniel Haberman, feldheim, 1996, volume I, pages 91-92. See the first Midrash Rabbah, Lech Lecha where the design argument is attributed to Abraham. See Medrash Temurah: "G-d created" (Gen. 1:1): A heretic came to Rabbi Akiva and asked, "Who made the universe?". Rabbi Akiva answered, "Hakadosh Boruch Hu". The heretic said, "Prove it to me." Rabbi Akiva said, "Come to me tomorrow". When the heretic returned, Rabbi Akiva asked, "What is that you are wearing?" "A garment", the unbeliever replied. "Who made it?" "A weaver." "Prove it to me." "What do you mean? How can I prove it to you? Here is the garment, how can you not know that a weaver made it?" Rabbi Akiva said, "And here is the world; how can you not know that Hakadosh Boruch Hu made it?" After the heretic left, Rabbi Akiva's students asked him, "But what is the proof?" He said, "Even as a house proclaims its builder,a garment its weaver or a door its carpenter, so does the world proclaim the Holy Blessed One Who created it. Sefer Tehillim e.g. Borchi Nafshi. Chovos Halevovos Shaar Habechina. Rabbi Elchanan Wasserman zt"l in Kovetz Maamarim.

[20] Feser, Edward. The Last Superstition, St. Augustine's Press. p.221.

After Hobbes, Hume, Kant, Darwin, Marx and others, the philosophical assumptions that modern thinkers all came to hold in common, and in particular their hostility to the key metaphysical doctrines of classical philosophy was aimed undermining the traditional philosophical case for the existence of God, the immortality of the soul, and the natural law. As Feser writes, this falsehood transformed a dispute between rival metaphysical worldviews appear to be a "war between science and religion." Since any lie repeated long and loudly enough will come to seem the plain truth, the conventional wisdom about religion today is that it is and always has been without serious intellectual foundation, or at least any that is still viable. This myth is sustained by nothing more than rhetorical sleight of hand facilitated by a general ignorance of the history of ideas, even among philosophers, scientists, and other intellectuals.

The costs of this centuries-long scam have been enormous. It has completely pulverized the intellectual foundations, not only of religion, but of any possible morality, and indeed of science itself. The twentieth century saw these implications reach full bloom in the debasement of man by the Nazis and the Marxism of Lenin, Stalin and Mao. The result in our times is the abolition of the dignity of man created in the image of God, the slaughter of the unborn (arbitrary abortion) and the violation of the sanctity of marriage.

How evolutionists view ethics:

- The time has come to take seriously the fact that we humans are modified monkeys, not the favored Creation of a Benevolent God on the Sixth Day.[21]
- As evolutionists, we see that no justification [for ethical behavior] of the traditional kind is possible. Morality, or more strictly our belief in morality, is merely an adaptation put in place to further our reproductive ends. Hence the basis of ethics does not lie in God's will. … In an important sense, ethics as we understand it is an illusion fobbed off on us by our genes to get us to cooperate. It is without external grounding. Like Macbeth's dagger, it serves a powerful purpose without existing in substance.[22]
- "Evolution is the greatest engine of atheism ever invented" (William Provine, Cornell).[23]
- "Darwin made it possible for me to be a fulfilled atheist" (Richard Dawkins, Oxford).[24]
- "Before Darwin, we thought that a benevolent God had created us" (Steven J. Gould, Harvard).[25]

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[21] Ruse, Michael. 1995. "Evolutionary Ethics: A Defense." Biology, Ethics, and the Origins of Life. ed. Holmes Rolston, III. p89-112. Boston: Jones & Bartlett Publishers, see pages 93 and 101

[22]Michael Ruse and E. O. Wilson, "The Evolution of Ethics," in Religion and the Natural Sciences: The Range of Engagement, ed. J. E. Hutchingson, Orlando, Fl.:Harcourt and Brace, 1991.

[23] Willaim Provine, "Evolution: Free will and punishment and meaning in life." Slide from Prof. William B. Provine's 1998 "Darwin's Day" address, "Darwin Day" website, University of Tennessee Knoxville TN, 1998.. For the repugnant aspects of Darwin's theories please see: http://toriah.org/misc/RNS/topics/darwin-and-genocide.htm.

[24] Richard Dawkins, "The Blind Watchmaker," [1986], Penguin: London, 1991, reprint, p.6.

[25] Steven J. Gould, "So Cleverly Kind an Animal," in "Ever Since Darwin: Reflections in Natural History," [1978], Penguin: London UK, 1991, reprint, p.267

> "Darwin's dangerous idea cuts much deeper into the fabric of our most fundamental beliefs than many of its sophisticated apologists have admitted to themselves" (Daniel Dennet, Tufts).[26]

In an article in *The Atlantic Monthly* in 1948, the empiricist philosopher W.T. Stace wrote about the moderns' decision to abandon the earlier philosophy of plan and purpose in the medieval age of faith.

> 'The real turning point between the medieval age of faith and the modern age of unfaith came when the scientists of the seventeenth century turned their backs upon what used to be called "final causes". . . [belief in which] was not the invention of Christianity [but] was basic to the whole of Western civilization, whether in the ancient pagan world or in Christendom, from the time of Socrates to the rise of science in the seventeenth century. . . . *They did this on the ground that inquiry into purposes is useless* for what science aims at: namely, the prediction and control of events. . . . The conception of purpose in the world was ignored and frowned upon. *This, though silent and almost unnoticed, was the greatest revolution in human history, far outweighing in importance any of the political revolutions whose thunder has reverberated through the world*. . . . The world, according to this new picture, is purposeless, senseless, meaningless. Nature is nothing but matter in motion. The motions of matter are governed, not by any purpose, but by blind forces and laws. . . . [But] if the scheme of things is purposeless and meaningless, then the life of man is purposeless and meaningless too. Everything is futile, all effort is in the end worthless. A man may, of course, still pursue disconnected ends, money, fame, art, science, and may gain pleasure from them. But his life is hollow at the center. Hence, the dissatisfied, disillusioned, restless, spirit of modern man. . . . Along with the ruin of the religious vision there went the ruin of moral principles and indeed of all values. . . . If our moral rules do not proceed from something outside us in the nature of the universe – whether we say it is God or simply the universe itself – then they must be our own inventions. Thus it came to be believed that moral rules must be merely an expression of our own likes and dislikes. But likes and dislikes are notoriously variable. What pleases one man, people or culture, displeases another. Therefore, morals are wholly relative.[27]

In Stace's view, this purely philosophical revolution, and not "the Copernican hypothesis nor any of Newton's or Galileo's particular discoveries" that was the "real cause" of the decline of religion and morality as it had traditionally been understood. While as recently as the 1940s a mainstream intellectual writing in a mainstream liberal magazine could recognize that the source of modern man's radical shift in thinking about religion and morality was not science per se, but rather the early moderns' decision to replace one set of philosophical principles with another set, the contemporary intelligentsia has falsely come to regard reason, philosophy, and science as such to be at odds with religion and traditional morality.

Feser writes that the man with traditional moral and religious beliefs is like the average person who finds such far-fetched doubts preposterous and not worth taking seriously, whether or not he

[26] Daniel Dennet, *Darwin's Dangerous Idea*, Simon and Schuster, 1995, p18
[27] Ibid. p225-226.

has any answer to the skeptic who challenges him. “The ordinary religious believer is perfectly justified in continuing to believe as he always has whether or not he has any sophisticated answer to charlatans like the New Atheists. Being asked to justify one’s belief that there are purposes in the world and that a divine intelligence has put them there, or that sodomy is unnatural and therefore immoral, is like being asked to prove that you are now awake and not dreaming. You can humor such a request if you like, but the average person, at least, is under no obligation to do so, and can safely leave such eccentric worries to the philosophers. If an answer is to be given though, it cannot be one that rests on untutored common sense, as it could perhaps have been with earlier generations of secularists; for like a worm in an apple, the bad philosophy of the moderns, having been nibbling away for three or four centuries, has now thoroughly eaten its way through the secularist brain. The only thing that might patch up the hole, that might counteract this bad philosophy, is good philosophy.”

The foolish neglect of the classical philosophical heritage by contemporary religious apologists eager to accommodate modern sensibilities has helped to afford the arguments of the New Atheists and other secularists a plausibility that is, however seemingly obvious, in fact wholly illusory. The only possible remedy now left is to go back to first principles, for where ordinary commonsense judgments about what is real and what is right are concerned, there is almost no common ground left between religious believers and secularists.

What we need to do is to return to a **philosophy of nature** as developed by Rav Saadia Gaon, *Chovos Halvavos* and Rambam, in a way that is consistent with the Torah. This is a philosophy that restores Plan and Purpose to its rightful place in the exercise of the intellect.

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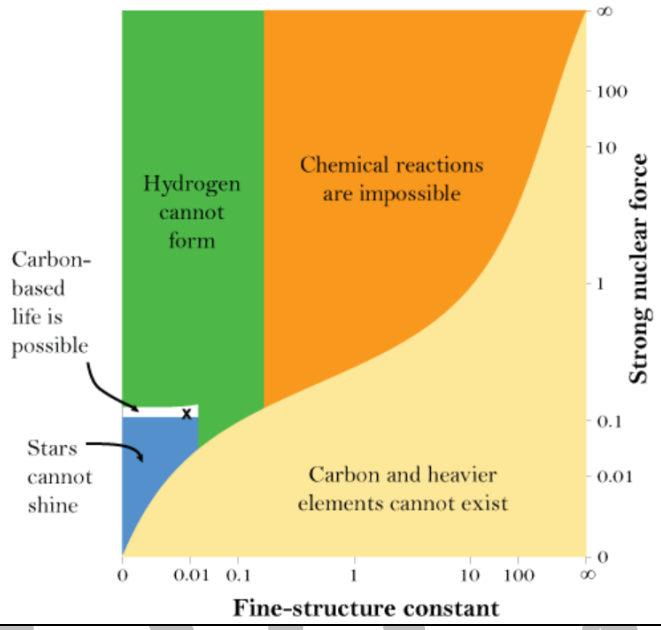
[i] In the same chapter, the Rambam writes: “It is well known that the veins and nerves of an individual dog or ass are not the result of chance: their magnitude is not determined by chance: nor is it by chance, but for a certain purpose, that one vein is thick, another thin: that one nerve has many branches, another has none: that one goes down straight, whilst another is bent; it is well known that all this must be just as it is. ... There is no doubt that every one of these things is necessary and in accordance with a certain design: and it is extremely improbable that these things should be the necessary result of natural laws, and not that of design. Do you think that it was by chance that a transparent humour was formed, and then another humour with certain similar properties, and besides a membrane which by accident had a hole covered with a hardened transparent substance? In short, considering the humour of the eye, its membranes and nerves, with their well-known functions, and their adaptation to the purpose of sight, can any intelligent person imagine that all this is due to chance? Certainly not; we see here necessarily design in nature....”.

[ii] Quote is taken from *The Fine-Tuning of Nature’s Laws: What physics tells us about the improbability of life*, Luke A. Barnes, The New Atlantis, Fall 2015. Luke A. Barnes is a postdoctoral researcher at the Sydney Institute for Astronomy. His book with Geraint Lewis, *A Fortunate Universe: Life in a Finely Tuned Cosmos*, is from Cambridge University Press, 2016. Let’s look at an example – the strong force. Not only must the strong force be fine-tuned so we have both hydrogen and helium, but the ratio of the strong force must also be fine-tuned with the fine structure constant. Barnes writes:

“The strong nuclear force, for example, is the glue that holds protons and neutrons together in the nuclei of atoms. If, in a hypothetical universe, it is too weak, then nuclei are not stable and the periodic table disappears again. If it is too strong, then the intense heat of the early universe could convert all hydrogen into helium — meaning that there could be no water, and that 99.97 percent of the 24 million carbon compounds we have discovered would be impossible, too. And, as the chart to the right shows, the forces, like the masses, must be in the right balance. If the electromagnetic force, which is responsible for the attraction and repulsion of charged particles, is too strong or too weak compared to the strong nuclear force, anything from stars to chemical compounds would be impossible.”

Here's the chart he's referencing:



What if we tweaked just two of the fundamental constants? This figure shows what the universe would look like if the strength of the strong nuclear force (which holds atoms together) and the value of the fine-structure constant (which represents the strength of the electromagnetic force between elementary particles) were higher or lower than they are in this universe. The small, white sliver represents where life can use all the complexity of chemistry and the energy of stars. Within that region, the small "x" marks the spot where those constants are set in our own universe.

As you can see from the chart, most of the values that the constants could take would make complex, embodied intelligent life impossible. We need carbon (carbon-based life) because they form the basis of the components of life chemistry, e.g. proteins, sugars, etc. We need hydrogen for water. We need chemical reactions for obvious reasons. We need the light from the stars to support plant and animal life on the surface of a planet. And so on. In almost every case where you change the values of these constants and quantities and ratios from what they are, you will end up with a universe that does not support life. Not just life as we know it, but life of any conceivable kind under these laws of physics. And we don't have any alternative laws of physics in this universe.