
Nidhal Guessoum,
The Young Muslim's Guide to Modern Science,
Beacon Books and Media Ltd.,
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(164 pp), USD 17.95

As expressed on its back cover, the book is aimed at students, educators and the general public interested in understanding what modern science says. The book presents a wide range of topics from the Big Bang to genetic engineering in simple and clear way. The author Professor Nidhal Guessoum, who is a scientist himself by training, attempts to show a Muslim or any other believer how modern science fits with his or her beliefs, and that it is possible to uphold both one's religious teachings and the scientific education that he or she acquires in schools in total harmony and without sacrificing one or the other.

The book starts with a lively discussion in Chapter 1 on a cleric's expressed view that the sun rotates around the world and not vice versa. Based on this and some other disputes, the author asks motivational questions like 'Do Muslims widely mix up basic science with religious beliefs? Is Islam suppressing scientific literacy? ... What should be done to prevent students from being mis-educated in this manner?' He then goes on to present the scientifically correct background information about the sun rising from the East. He also shares a 2008 survey which shows that the scientific literacy among the 34 countries surveyed ranged from 35% in Sweden to just 2% in Turkey. He then presents convincing arguments about the importance of basic scientific literacy for success and respect in the world community, and stresses the importance of future Muslim scholars being exposed to sciences during their education to avoid bigotry.

In Chapter 2, the author gives a brief and balanced coverage of the history of science, with particular emphasis on the Muslim scientists' contributions in the medieval period, and the scientific revolution which started in the 16th century with the works of Copernicus, Kepler, Galileo and Newton. He dwells on natural sciences which explain natural phenomena and uncover the basic principles and laws that govern the natural world. He clearly defines the boundaries of science by giving a concise definition for science as 'a body of knowledge about

the world that is methodical, rigorous, empirical (based on observations and experiments) and objective (does not depend on who does the experiment, observation, calculation, or simulation).⁷

The author devotes an entire chapter (Chapter 3 What is Modern Science?) to clearly distinguish science from other branches of knowledge and to filter out 'pseudo-science' and 'non-science' by discussing the characteristics of modern science. He emphasizes that modern science is an organized, systematic and disciplined mode of inquiry based on experimentation and empiricism that produces repeatable and applicable results universally, across all cultures. He adds Karl Popper's 'falsifiability' criterion which declares as non-scientific any proposed explanation that cannot be tested. He also clearly defines the domain of science as the natural observable world. He stresses that natural science only admits explanations of natural phenomena that rely solely on natural causes and leave out entirely any appeal to supernatural agents like God, and adds that modern science does not reject God or any beliefs in supernatural agents. For distinction and to avoid confusion, he clearly defines the relevant basic terms fact, law, hypothesis, model, and theory. A scientific fact is an objective and verifiable observation, a scientific law is a formulation of a causal relationship between physical quantities that has been found to always hold, and a scientific theory is a proposition that synthesizes a body of facts and laws related to particular phenomena. He underlines that correlation, which is relation or connection between two or more quantities, does not imply causation.

Science simply investigates the underpinnings of the natural cause-and-effect relations in the observable universe in a neutral way, independent of the beliefs or worldviews of scientists. The observed order and the discovered scientific facts, principles and laws that support that order are universal; but views on the establishment and sustenance of that order are personal and non-scientific. Science deals with the questions 'what' and 'how' in observable universe. Answers to the questions 'who' and 'why' – the causal agent, purpose and meaning – is outside the domain of science and in the domain of philosophy and theology. These two domains should not be mixed in inquiries to avoid chaos. In the minds of individuals, however, all knowledge – scientific and worldview – reside together as one.

While granting science its due credit for its great successes and contributions to modern life, the author also criticizes the scientific establishment for some biased practices. First, there is clear bias towards using the reductionist process even when it is not warranted as in complex systems – like searching for consciousness in the atomic activity in the brain cells

and searching for life in the chemicals. This led philosophers like Fraser Watts to distinguish between 'methodological reductionism' and 'ideological reductionism.' Many scientists are confident that some phenomena observed on complex systems are emergent – they appear on assemblies of matter out of nothingness and disappear into nothingness when the system is disassembled.

Life, for example, is not directly tied to atoms or molecules of live bodies. This is analogous to the fascinating glitter of diamonds being associated with the assembly of carbon atoms, but not the atoms themselves, since a graphite structure gives off no light despite its large mass. Of course, the source of the glitter of a diamond is not its crystalline structure either, since light originates from an external source like a lamp or the sun, and not from within the diamond. But light shines on a carbon structure only when the carbon atoms are assembled to facilitate the multiple reflection and refraction of light. This reasoning is in line with the "emergence" phenomenon advocated by many prominent scientists and philosophers. It posits that qualities that are not present on parts but are present on the whole are emergent qualities acquired by the assemblies. That is, the whole being larger than the sum of its parts is a valid physical phenomenon, as confirmed by countless observations.

In his book *A Different Universe* (1998), Physics Nobel Laureate Robert Laughlin argues that most physical laws do not have their origins in the microscopic world; rather, they simply emerge or appear in a macroscopic world out of nowhere: "The most fundamental laws of physics – such as Newton's laws of motion or quantum mechanics – are in fact emergent. They are properties of large assemblages of matter, and when their exactness is examined too closely, it vanishes into nothing."¹ After examining some primitive organizational phenomena such as weather, he asserts "We are able to prove in these simple cases that the organization can acquire meaning and life of its own and begin to transcend the parts from which it is made."² He presents arguments that the origin of some apparent properties of the parts of a whole is the principle of organization that is at work in the whole, to the point that the nature of the whole is largely independent of the natures of its parts: "Thus if a simple physical phenomenon can become effectively independent of the more fundamental laws from which it descends, so can we. I am carbon, but I need not have been. I have a meaning transcending the atoms from which I am made."³

1 R. B. Laughlin. *A Different Universe: Reinventing Physics from the Bottom Down*, New York, Basic Books, 2005, back cover page.

2 Ibid, Preface, xiv.

3 Ibid, Preface, xv.

Therefore, there is clear prejudice in the prevailing scientific establishment to play deaf and blind to any suggestions that imply existence beyond matter. The establishment takes the position that 'all that exists is matter and matter is all that exists.' But this is the materialistic worldview or ideology, not science. This mix of science with materialistic ideology feeds mistrust towards science and generates suspicions among people. To be truly objective, sciences must be cleansed of all ideologies like materialism.

Another area of contention that the author points out is the attempt by science to occupy as large (and unbounded) a space of investigation as possible, including life and society. This is generally labeled as scientism. It posits that only scientist have the most reliable knowledge, with the implication that all other knowledge is illusion. Some even portray scientism as a postmodern religion, which poses a threat to established religions and puts the faithful people on defensive.

Chapter 4 is a brief primer on the fundamentals of physics, astronomy and biology for the novice. It also explains the prominent scientific theories like Einstein's theory of relativity, quantum theory, the big Bang, and the Darwin's theory of evolution. It is pointed out that evolution is the result of genetic mutations and natural selection by the environment. Humans having approximately 96% of common DNA with chimpanzees is presented as evidence for evolution. It is stated that 'No educated person can deny that evolution is a fact of nature's history' – a zealous statement that will be challenged below.

Of these, Einstein's general relativity theory was first confirmed by Arthur Eddington by measurements in 1919, and all observations and everyday applications like the use of GPS fully comply with it. Therefore, relativity can be considered a scientific fact. Same can be said about the quantum theory – it is weird and highly unintuitive, but all observations confirm it. Therefore, even if nobody understands quantum mechanics, as Feynman put it, it is also a scientific fact and is being used in many applications, including the development of quantum computing. The Big Bang theory is based on the ongoing expansion of the universe, and thus it is also on strong footing, although there are some differing opinions about the initiation process. These three major theories enjoy general acceptance by both believers and nonbelievers, and there is no major controversy on them. But the theory of evolution is hotly contested by both scientists (including biologists) and common people, and for good reason: it mixes facts with ideology and it stops thinking instead of promoting thinking. The factual part confirmed by observations is science, but the rest is ideology based on materialistic worldview. As 1998 Physics Nobel Lorette Robert Laughlin puts it:

Most important of all, however, the presence of such corollaries raises the concern that much of present-day biological knowledge is ideological. A key symptom of ideological thinking is the explanation that has no implications and cannot be tested. I call such logical dead ends antitheories because they have exactly the opposite effect of real theories: they stop thinking rather than stimulate it. Evolution by natural selection, for instance, which Charles Darwin originally conceived as a great theory, has lately come to function more as an antitheory, called upon to cover up embarrassing experimental shortcomings and legitimize findings that are at best questionable and at worst not even wrong. Your protein defies the laws of mass action? Evolution did it! Your complicated mess of chemical reactions turns into a chicken? Evolution! The human brain works on logical principles no computer can emulate? Evolution is the cause! Sometimes one hears it argued that the issue is moot because biochemistry is a fact-based discipline for which theories are neither helpful nor wanted. The argument is false, for theories are needed for formulating experiments. Biology has plenty of theories. They are just not discussed – or scrutinized – in public. The ostensibly noble repudiation of theoretical prejudice is, in fact, a cleverly disguised antitheory, whose actual function is to evade the requirement for logical consistency as a means of eliminating falsehood. We often ask ourselves nowadays whether evolution is an engineer or a magician – a discoverer and exploiter of preexisting physical principles or a worker of miracles – but we shouldn't. The former is theory, the latter antitheory.⁴

Genetic mutations and the high ratios of common genes among different species are based on careful observations and are scientific facts. What people make out of these facts using their imaginations are theories. Unless the claims made by the theories are verified by observations or experiments, they remain as mere ideas. This is like the connect-the-dots game. The only thing we are certain of are the locations of dots on the board. Different people can connect the dots differently and come up with different pictures. The picture that connects all the dots and best represents reality will be the winner among others. For example, both the evolution and intelligent design theories are based on the same facts. Evolution theory posits that the live species we see around, from bacteria and plants to humans, are the result of random events with no purpose while the intelligent design theory posits that creation is too perfect to be the result of accidents; it must be the result of a purposeful design by an intelligent being.

⁴ Laughlin, *A Different Universe*, op. cit., Chap. 13, 169.

Proponents of both theories equally accept all objective scientific facts, and they can equally work towards discovering more facts in the same research team. Imposing non-scientific part of the evolution theory onto people is imposing ideology – the materialistic ideology whose essence is the rejection of anything non-physical including deity. The creation story has no difficulty fitting all the scientific facts, just like the evolution story, and there is no harm in presenting both stories on equal footing. After all, neither can be proven to the level of certainty of relativity and quantum theories.

In his book, *The Evolution of Physics*,⁵ Albert Einstein states that we will never be able to acquire definite information about the visible and invisible, and hence it will not be possible to reach absolute reality from known facts: “In our endeavor to understand reality, we are somewhat like a man trying to understand the mechanism of a closed watch. He can see the hands move, and hear its ticking, but he has no way of opening the case. If he is ingenious, he may form some picture of the mechanism which could be responsible for all the things he observes, but he will never be quite sure his picture is the only one which could explain his observation. He will never be able to compare his pictures with the real mechanism and he cannot even imagine the possibility of the meaning of such a comparison.”

On the observed part (the face of the watch and its moving parts), there is certainty and agreement to the extent of the certainty of the observations. However, there is uncertainty and disagreement about the unobserved part (the sealed mechanism that makes the watch operate in the background). Obviously, there will never be scientific knowledge about the sealed mechanism since it is closed to observations, and any claimed knowledge will be based on reasoning. Therefore, in natural sciences that are based on observations, the claimed knowledge about the invisible parts can easily be confused with the confirmed knowledge about the visible parts. And the claimed knowledge or views can be perceived as facts since views and facts are often packaged together.

As an analogy, after carefully examining all the iPhone models manufactured so far and noting down their differences, the claim that each model is designed separately by some intelligent and knowledgeable people is no less plausible and respectable than the claim that the newer model is the result of the blueprints of the older model being subjected to some accidents and experiencing some changes in design instructions. The observation that iPhone 7 and iPhone 8 share 96% of their design is no proof that iPhone 8 simply evolved from iPhone

7 by natural causes. Being an important segment of the materialistic worldview, evolution theory renders all creation and the universe meaningless and most people reject that idea, as the surveys show. They also reject the evolution-implied notion that life after that is an illusion and that death is an end. A game over. Observed scientific facts aside, the evolution theory can never be reconciled with religions since they are opposites.

As the author points out, there can be no contradiction between confirmed scientific facts and authentic Holy Scriptures since the universe is simply the book of creation of the same author written with power using the rules being discovered by sciences. And each creature is a meaningful word to be read and understood by conscious beings. The source of true religion and factual sciences is the same, and contemporary Turkish Islamic scholar Said Nursi also states that there can be no contention between true religion and factual sciences. He labels the expression ‘*This fact contradicts religion*’ as a ‘*foolish word*’. He explains “A person who views a matter whose truth is certified by indisputable evidence being opposite of true and factual religion as a possibility and fears that this contradiction might be valid is not sane.”⁶ He maintains that true religion and factual sciences must be allies working together and not foes working against each other. This is because all sciences originate from the holy names All-Wise (al-Hakim) and All-Knowing (al-Alim) while holy scriptures come from the attribute Speech (al-Kelam); and the Divine unity cannot allow two-headedness. If there appears to be a contradiction, the two must reconcile by making sure that the scientific fact is indeed a fact and that the scripture is interpreted correctly. If there appears to be a contradiction between authentic narrations and factual sciences, the mind is to be taken as the base and the narration is to be interpreted: “It is among the established methods of usul, Islamic sciences and jurisprudence, that if reason (*aql*), and narration (*naql*) contradict one another, reason is taken as the base while narration is interpreted on that basis. But, that reason should truly be reason.”⁷ This is because reason is a valid criterion and a uniting reference for all humankind, and authentic narrations cannot be understood or applied in a way that commonsense cannot accept.

On a broader perspective, the science of biology is based on life, and yet life is itself a mystery. Charles Darwin postulated that life originated in shallow bodies of water, called the ‘primordial soup,’ where simple chemicals began to react spontaneously under the activation

⁶ Bediuzzaman Said Nursi. *Muhakemat* (Rational Arguments), Istanbul: Envar Neşriyat, 1998, 71. Can be accessed at <http://www.nursistudies.com>.

⁷ Ibid.

⁵ A. Einstein and L. Infield. *The Evolution of Physics*, ed. by C. P. Snow, Cambridge University Press, 1938, reprint, Touchstone, 1967.

of heat, light, and electricity from lightning storms and produce organic compounds called amino acids – the chemical precursors of life. In time, these amino acids mysteriously assembled themselves into complex molecules, and eventually life evolved in this chemical soup. The formation of amino acids in the labs or in the environment is easy, but there is a long gap between amino acids and the most primitive form of life since an amino acid contains less than 100 atoms, but the simplest bacterium contains about 100 billion atoms organized in a very specific form. It is further theorized without any scientific evidence that these simple amino acids spontaneously organized themselves into more complex molecules that began to self-replicate. And it is claimed that these molecules served as the original spark of life for animate beings on Earth, from the simplest bacteria to complex human beings. But no proof is presented for this claim of chemistry randomly turning into biology. The claim that chemicals randomly organized themselves into a self-replicating molecule is like a claim of magic, which has no relevance to science. The view that life is a form of chemistry is really ideological, not scientific, since no transition from chemistry to biology is ever observed in nature or in lab environments.

This warm pond theory of life, which resembles more a fairy-tale story for science fiction than a fact-based scientific theory, lacks supporting evidence. So, it is no surprise that it did not satisfy the researchers working on life. Discovering some clay that contains some metal particles, glass pieces and drops of crude oil, for example, is far from explaining how a smart phone, complete with its software and microprocessor, has first appeared or evolved. The assembly and operation of a smart phone fully complies with the laws of nature. But the blind, ignorant and purposeless laws of nature or the causal effects cannot invent any smart phone even in a trillion years.

Some private companies have been trying to build synthetic life from scratch, starting with a single cell built from chemicals. They are hopeful that they will eventually manage to build an artificial DNA and form a working genetic system by adding nucleotides, which are the building blocks of DNA, in the correct proportions into a container. Once they put all the ingredients together, they hope that evolution will take over with its magical power, and life will emerge. Then what is left for them is simply to figure out what happened. However, all target dates set for the creation of artificial life have passed and all such attempts so far have failed. The future outlook does not look bright, either. The biggest obstacle before the scientific progress on life is the insistence on reductionist approach and the outright rejection of the emergence idea since it does not fit into the materialistic worldview. Also, evolution theory

posits that life is chemical reactions. Yet, although all sorts of controlled or uncontrolled chemical reactions occur all over the earth, no chemical reaction has ever produced life.

The surface of the earth today is much more habitable to life compared to the hostile environment of early Earth 3.5 billion years ago when life is thought to have started. Yet, it is interesting that there is no observation of an animate thing emerging from inanimate matter. The suggestion that first there appeared 'replicating molecules' on the primordial Earth that got the machinery going and then some of those molecules started to interact does not seem plausible and thus is baseless since no such self-replicating molecule has ever been observed to emerge in the inanimate world despite the much more favorable conditions on Earth today.

In his book *A Guide for the Perplexed*, E. F. Schumacher points out the inadequacies of material determinism and the scientific worldview as a map of reality. He also asserts that existence consists of four qualitatively different levels of being: minerals, plants, animals and humans. He points out that only the mineral level is fully external and visible, and thus fully knowable by modern science. The other three levels include progressively more internal and invisible qualities that are not fully accessible to scientific observations through our external five senses. He argues that minerals are inanimate, plants have the added property of life, animals have the added property of consciousness, and humans have the added property of self-awareness. He claims that the transition between those four levels of beings cannot be attributed to any material causes:

To say that life is nothing but a property of certain peculiar combination of atoms is like saying that Shakespeare's Hamlet is nothing but a property of a peculiar combination of letters. The truth is that the peculiar combination of letters is nothing but a property of Shakespeare's Hamlet. The French or German versions of the play 'own' different combinations of letters.⁸

Besides, what is the likelihood of a large pile of letters to self-align into meaningful books even if a billion years have passed? Likewise, what is the likelihood of a large pile of atoms to self-align into wondrous live beings under the influence of random natural causes that have no purpose, will, knowledge and skill even if a billion years is waited?

It is also worth mentioning that the DNA molecules in the human genome involve about 3 billion base pairs. This means, each of the two strands of DNA in the human genome contains

⁸ E. M. Schumacher, *A Guide for the Perplexed*, New York: Harper & Row, 1977, 19.

3 billion letters. A large volume of printed book has about 3 million letters. Therefore, if books were written using the molecular letters of A, C, G and T on DNA instead of ordinary letters of the same font size, it would take 1000 large books to contain the letters on a DNA strand of the human genome in a cell. Considering that 50 million new cells are created in the human body per second and each cell contains a complete set of genomes, the magnitude of the 100-billion large books long coding and compiling that quietly takes place in the human body is truly mind boggling. If we ask, how does it happen? We will get the simple answer: Evolution does it. Period. And some call this black curtain science.

In both Chapters 4 and 6 the author talks about the anthropic principle – the notion that life is the focal point of existence and that without life there would be no known existence. The center stage of the universe belongs to life. The highest form of life is conscious life, and humans owe their supremacy in creation to having the highest level of consciousness. To meticulous observers, it appears that the laws of nature are precision-tuned for the universe to be hospitable to life. From the force of gravity to the universal constants, there are over 200 physical parameters set at such precise values that if one of them deviated by a fraction of one percent in value, the universe wouldn't be bio-habitable. It looks as if from subatomic particles to galaxies, everything is designed for life, especially conscious life.

The observation of all the right parameters having the 'just right' values also forms the logical basis of the viewpoint intelligent design, which reflects the notion that there must be a mysterious grand designer with purpose, knowledge and power behind creation. To counter the theory of intelligent design, which cannot simply be refuted by the baseless claim of blind coincidence, the multiverse theory, also called the theory of parallel universes, is devised. It posits that an infinitely large number of universes exist parallel to each other, each with a different set of physical laws and constants, so that statistically it is possible for the set of conditions to happen to be 'just right' for life in some of the 'lucky' universes.

The multiverse theory attempts to evade one possible intelligent designer by jumping into an ocean of chances and embracing a cosmic lottery as a lifesaver. But in so doing, it invents an infinite number of mysterious universe-generators with no observational basis and plausible evidence. If physical laws and constants changed over time, the maturing of conditions conducive to life probably would have been attributed to an evolutionary process over billions of years, and there would be no necessity to invent the theory of parallel universes. This also shows the tight grip of materialistic worldview on sciences.

Having the right set of physical laws (or the laws of nature) and the precise values of

physical constants is necessary for the emergence of life, but they are far from being sufficient. There is no indication that life stems from the laws of nature, and the existence of life cannot be derivable from the laws of nature that are supposed to govern all natural phenomena. When developed, even the comprehensive 'theory of everything' is not likely to offer a plausible explanation for life (and consciousness). And life will continue to remain largely a mystery since physicists don't have the slightest idea on how life (and consciousness) relates to physical laws. In his book *A Different Universe*, 1998 Physics Nobel recipient Robert Laughlin argues that unknowability of living things may actually be a physical phenomenon:

The pig-headed response of the science establishment to the emergent principles potentially present in life is, of course, a glaring symptom of its addiction to reductionist beliefs – happily abetted by the pharmaceutical industry, which greatly appreciates having minutiae relevant to its business worked out at taxpayer expense. The rejection of emergence is justified as defending science from mysticism. The ostensible scientific view is that life is chemical reactions, and that the bold, manful thing to do is identify and manipulate them with stupendous amounts of money and supercomputers. The corresponding mystical view is that life is a beautifully unknowable thing that can only be screwed up by humans with all their money and computer cycles. Between these extremes we have the profoundly important, but poorly understood, idea that the unknowability of living things may actually be a physical phenomenon. This does not make life any less wonderful, but simply identifies how its inaccessibility could be fully compatible with reductionist law. Unknowability is something we see all the time in the inanimate world, and it is actually not mysterious at all. Other, more primitive, systems exhibiting it have evaded computer solution up until now, and some of us are confident that they always will. Whether similar effects occur in biology remains to be seen. What is certainly true, however, is that arrogantly dismissing the possibility will lead to an endless and unimaginably expensive quagmire of bad experiments.⁹

Given the weak foundation of the ideological part of the evolution theory, there is no need to take it as truth and try to reconcile it with belief. A believer ideologically can simply subscribe to the creation or intelligent design theory and still be among the best researchers in life sciences.

⁹ Laughlin, *A Different Universe*, 173.

The author concludes the book in Chapter 7 with the messages ‘we cannot ignore science’ and ‘science, at least the parts that one must regard as established, must be accepted and upheld by all, believers and non-believers, particularly educated people.’ Sciences that are based on certified facts can prevent nonfactual interpretations in religion while religion can shed light to sciences to progress in the right direction. As expressed by Albert Einstein in his famous quote ‘Science without religion is lame, and religion without science is blind,’ denying one another is harmful to both religion and sciences. For example, if modern medicine subscribed to the notion that every being is in its highest creation, rather than the notion that every being is the outcomes of a chain of random events, it would not fall into the mistake of searching for a baby food superior to mother’s milk or viewing menopause as an illness and attempting to treat it with estrogen supplements, with apparent adverse results. Scientists would rise up and view creation from the perspective of the creator, like Einstein did, and would produce innovative theories about how the universe should be running.

In conclusion, the book is very informative and enjoyable to read, but the arguments about the theory of evolution must be taken with a grain of salt. The main message conveyed in the book is that confirmed scientific facts and true religious messages cannot be in contradiction, and a pious person should not hesitate to undertake scientific studies. In fact, with proper point of view, studying science and learning the intricacies of creation can turn into a religious experience by contemplating the knowledge, power and the art of the Creator.

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J. Baird Callicott and James McRae (eds.),
Japanese Environmental Philosophy,
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Japanese Environmental Philosophy, edited by John Baird Callicott and James McRae, examines the Japanese worldview from several perspectives of Japanese culture and thought. Callicott has been a pioneer of this field since he taught the world’s first environmental ethics course in 1971. His concerns for a traditional conception of nature include both Western and Eastern cultures. In 2009, one of his books, *Earth’s Insights: A Multicultural Survey of Ecological Ethics from the Mediterranean Basin to the Australian Outback*, was translated to Japanese by Tomosaburō Yamauchi, who offered the original idea of *Japanese Environmental Philosophy* as noted in the Introduction (p. 1). Yamauchi also contributes to the volume as the author of chapter 9.

The other coeditor, James McRae, is an expert in Japanese philosophy and ethics, and he authors chapter 3. Callicott and McRae already worked together as coeditors with *Environmental Philosophy in Asian Traditions of Thought* in 2014. The previous collaboration covered three Asian countries: India, China, and Japan. This second collaboration, however, focuses solely on Japan and provides further, profound insight and a diversified analysis. This book is enriched by the multiplicity of Japanese culture and thought, much like the interconnectedness suggested by the metaphor of “Indra’s Net,” so it is also quite useful for students of Japanese studies. This volume contains contributions from 15 authors who utilize a variety of rich resources: from traditional Shintoism to Confucianism and Zen Buddhism; from Japanese folk dance and Japanese gardens to contemporary civil engineering; from Kūkai and Dōgen to Nishida and Watsuji; and from Plato to Heidegger and Whitehead.

The first part of the book, “Nature in the Japanese Tradition of Thought,” is devoted to demonstrating the concept of nature in Japan. Augustin Berque addresses the subject of nature in chapter 1, “Thinking the Ambient: On the Possibility of Shizengaku (Naturing Science).” Modern Western science assumes that the human being is always the subject and nature the object. However, in the Japanese linguistic constitution, the subject is not limited to the human. Berque starts his consideration with haiku (a form of Japanese seventeen-syllable poetry) and ends with the biological theory of Kinji Imanishi (1902–1992), finding a clue to overcoming anthropocentrism.