

# RELIGIOUS LITERALISM AND SCIENCE-RELATED ISSUES IN CONTEMPORARY ISLAM

by *Nidhal Guessoum*

*Abstract.* The complex relations between Islam and modern science have so far mostly been examined by thinkers at the conceptual level. The wider interaction of religious scholars and preachers with the general public on science issues is an unexplored area that is worthy of examination, for it often is characterized by a literalistic approach. I first briefly review literalism in its various forms. The classical Islamic jurisprudential school of Zahirism, widely regarded as bearing the flag of juristic literalism, is also briefly presented. I then address specific science-related issues currently being discussed in literalistic ways by many religious scholars and preachers in their general-public discourse. I focus on the practical case of the determination of crescent-based Islamic months and holy occasions, the conceptual issue of evolution (biological and human), and the rule for the consumption of meat by slaughter of animals. In the last part of the essay I propose a constructive alternative to the literalistic mode: the Maqasidi (objectives-based) approach. This rather old method has seen some revival lately, mainly among Islamic jurists concerned with solving the new issues of modern times, especially for Muslims living in the West, but this approach has not yet been applied to science-related issues. I present the main ideas of this method and show their relevance and usefulness to science-related topics.

*Keywords:* evolution; Islam; (scriptural) literalism; science

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There are two types of encounter between modern science and religion: an elite-level, academic discourse on how to mesh these two human fields of knowledge and activity, and a more general public discourse produced by religious preachers and other more or less educated participants. The first type of discourse tends to be more conceptual. It generally focuses on philosophical aspects of the science–religion/Islam encounter. It addresses the foundational principles of each field and attempts to find an approach for constructing a correct relationship between the two. In doing so, scholars

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invariably build upon and reflect their own religious and philosophical stands—liberal, conservative, rational, mystical, and so forth. These attempts, and the religious inclinations they exhibit, are exemplified in the science-Islam domain by the works of the following thinkers, whose positions we can very succinctly summarize as follows:

- Seyyed Hossein Nasr: The “*scientia sacra*” philosophy—a mystical view of the world, with nature seen as sacred and the universe a theophany of God (Nasr 1982; 1989, 132; see also Kalin 2001).
- Muzaffar Iqbal: Modern science is an unprecedented corruption of humans’ historically theistic approach to understanding and interacting with the world (Iqbal 2002; 2007).
- Ziauddin Sardar: Science should be “Islamic,” that is, an effort to benefit humankind more than an effort to construct a worldview (Sardar 1989; 2006).
- Mehdi Golshani: Islam’s principles allow one to construct a harmonious relationship with modern science along the same philosophical lines as the Western “theistic science” proposals (Golshani 2003).
- Mohammad Abdus Salam: Science is universal, objective, and value neutral; there should be no attempts to construct Islamic or Chinese or Indian variants of it (Lai 1987).
- Pervez Hoodbhoy: Thinkers who have indulged in this discourse on the science-Islam interface have exhibited ignorance of modern science, making their works irrelevant at best; science should be correctly mastered first, and religion can be practiced independently from science (Hoodbhoy 1991).
- Taner Edis: Secularism—separation of the spheres of the religious and of objective knowledge—is the key to progress and to nonschizophrenic existence (Edis 2007).

This first type of discourse and various critical assessments of parts or all of it have been the focus of a number of works in the science-Islam field. (For a critical review see Guessoum 2009.)

The second level of encounter between modern science and religion, the one that is experienced in the everyday public arena (schools, media venues, bookstores), is much more widespread and perhaps more important, because it influences and conditions whole generations of Muslims before they reach a stage where they can appreciate the first type of discourse. General-public discussions on science and religion usually are ignited by scientific discoveries and technological developments (Big Bang theory, Darwinian evolution, cloning, stem-cell research) and often are addressed to and by religious preachers. One source of the problem I address here—the fallacy of that discourse—is the very weak reliance on scientists during public discussions of such problems, coupled with the

superficial and often flawed understanding of them displayed by the religious preachers and other participants. Unfortunately, unlike the situation in conservative Protestant milieus,<sup>1</sup> there are (to my knowledge) no scientific studies of the extent of literalism and its effect on public discourse in the Muslim world. I therefore rely on firsthand experience and knowledge of specific examples, such as the determination of Islamic/holy months, as I show in later sections.

Interestingly, there has not been much discussion of this second type of discourse<sup>2</sup> and of the methodology underlying many of the “answers” that commonly are given to such issues, one that I broadly identify here as “religious literalism.” There are several possible reasons for the dearth of academic treatment of this phenomenon. For one thing, that type of discourse tends to take place at the general-public level rather than in venues where scholars spend their time (universities, conferences, journals). Another reason is the surprising lack of literature on Islamic literalism. Third, although it is a common stereotype that literalism, orthodoxy, and fundamentalism are general characteristics of uneducated and unintelligent people, there is little truth in this depiction, whether among Muslim or Christian groups (Crapanzano 2000).<sup>3</sup> In fact, it seems that increased literacy among the general populations in modern times probably is a causal factor in the increasing popularity of literal interpretations.

My aim in this article is to show that on several important topics of a scientific nature and of relevance to the Muslim society, the dominant public opinions tend to be based on a literalistic reading and understanding of the scriptures (Qur’an and Hadith<sup>4</sup>). I first briefly review the concept of literalism in both the general literature of religion (extending beyond Islam) and the specific Muslim culture (classical and contemporary). I then bring up the main examples that support my thesis (attempts to solve the holy-month determination problem, the thorny issue of biological and human evolution, and so forth). In the process, I explain that this literalistic approach is not only (consciously or unconsciously) invoked on topics related to science but also extends to many other socially important issues, such as the necessity of slaughtering (or not) animals for meat consumption.

#### DIFFERENT LEVELS OF LITERALISM

Literalism can take various forms of sophistication, or lack thereof. In its basic form, literalism is defined as understanding a religious text directly from the lexical meaning of its words. An example of this would be the insistence by many Muslims on the necessity of visually seeing the new lunar crescent before declaring the start of a month, as Prophet Muhammad did and instructed his companions to do. In its most extreme form, literalism would insist not only on taking the most direct meaning of a statement but also on denying any possible connotation that may lie under the text’s surface. One example of this attitude among Muslims is the claim

that angels actually “write down” people’s deeds for the Judgment Day. This view, moreover, considers allegorical, figurative, and metaphorical interpretations as attempts to evade or twist the true meaning of scripture (see Jackson 2006 for an overview).

More sophisticated forms of literalism are much more prevalent today, especially in the Muslim culture. In an excellent review of literalism and its influence on classical and contemporary Islamic jurisprudence, Sherman A. Jackson distinguishes between “literalism,” “juristic empiricism,” and “juristic induction.” The first is what I briefly described above. The second insists on the primacy of any religious text and rejects any subjective (a given scholar’s) interpretation; it is defined as the requirement that rulings be directly drawn from textual religious sources, not on “principles” that scholars construct. The third, juristic induction, is a methodology that starts from the literal meaning of a number of religious texts and then extracts from the aggregate a more general understanding that can then be applied to various cases. For juristic induction, the whole is greater than the sum of its parts, whereas for basic literalism, no summation of the “parts” is even considered useful, and for juristic empiricism, no ruling can exist without a direct link to a specific religious source, the text being read literally.

To illustrate these distinctions, Jackson offers the series of commands (that someone may give to, let us say, a servant): “Open the window.” “Fetch a fan.” “Turn off the lights.” “Pour a glass of water.” Literalism would require the exact understanding of each statement as per its textual meaning and thus the implementation of each statement. Juristic empiricism would not only require that each action be based on an existing text to that effect but also exclude any attempt to extract a larger idea that the person is trying to communicate or is basing his/her commands on. Juristic induction would interpret the commands as expressions of the discomfort of the person in a hot environment, the inference being made on the literal understanding of each statement, but the conclusion drawn from the series of statements can then be more general (“Cool down the room”) and go beyond the commands given (perhaps use an air conditioner).

#### ARGUMENTS FOR AND AGAINST LITERALISM

It may surprise some to learn that literalism was not the standard practice of Jewish, Christian, and Muslim scholars in premodern times. Karen Armstrong points out that “some rationalists and mystics had gone out of their way to depart from a literal meaning of the Bible and the Koran in favor of a deliberately symbolic interpretation” (Armstrong 1994, 292). She also recalls that the literal understanding of the Bible was one of the major themes of the Protestant Reformation, for that was supposed to enable the commoners to know God (as a personal deity) directly and by themselves

and to live God's will instead of relying on clerical authority and papal ruling. According to Hans Frei, "the affirmation that the literal or grammatical sense is the Bible's true sense became programmatic for the traditions of Lutheran and Calvinistic interpretation" (1974, 37). With the Reformation, Karen Armstrong writes, "Protestants and Catholics both had begun to put their faith in an entirely literal understanding of scripture" (Armstrong 1994, 290; see also Harrison 1998, 107–20). One finds clear evidence for this in the writings of Martin Luther<sup>5</sup> and John Calvin.<sup>6</sup>

In relation to science issues, Armstrong dates the strong emergence of modern-day Christian, or, more precisely, Protestant, literalism to the Scopes Trial,<sup>7</sup> before which "many had inclined toward biblical literalism, but only a small minority embraced the new Creation Science"; after the trial, Christian fundamentalists became "militantly literalistic, and Creationism became de rigueur" (2004, 44).

There are significant differences between the natures of the Christian and the Islamic scriptures, however. For Muslims, the Qur'an is the verbatim word of God, revealed to Prophet Muhammad and reviewed with him by the Archangel Gabriel. The hadiths are of two kinds: *qudsi* (divine), nonliterally revealed pronouncements made by Allah to the Prophet, and *nabawi* (prophetic), utterances and actions made by the Messenger in various instances; these acts usually are considered to be divinely guided but subject to human factors (of expression or judgment). For Christians, except for extreme fundamentalists, the Bible is a collection of writings by individuals who are assumed to have been divinely inspired and perhaps guided in writing recollections of stories, practices, and injunctions. One would thus think that the Islamic scriptures more easily and directly lend themselves to literalistic readings because they are more closely and tightly linked to God. But Rafey Habib insists that in the Islamic culture "literalism . . . has no grounding and no sanction in the sacred texts of Islam . . . the Qur'an itself, as well as the various apparatuses of Islamic interpretation (hadith, etc.) explicitly acknowledge their own use of metaphor and figurative speech" (Habib 2006).

In defense of literalism, advocates state that because there can only be one truth, there can be only one true understanding of the fundamental religious sources. They argue that in common life, authors who wish to communicate specific ideas do not deliberately put ambiguous meanings into their writings, and that is why, as the nineteenth-century Protestant theologian T. H. Horne put it, "neither [an author's] readers, nor those who hear him, affix to [the statement] any other than the true and obvious sense" (Ruthven 2007, 42). They also insist that only such simple, uniform, and unified readings can provide moral guidance and that any interpretative ways only open the door to everyone substituting his or her own view, which invariably is based on or influenced by personal biases. Furthermore, fundamentalists often claim that, contrary to what critics say,

literalism always was the normal approach to scriptures and religious sources (texts or orally transmitted traditions). They insist on one true, original meaning of the religious text, a perfect and correct understanding that they describe as timeless and transcending history. In the Islamic context, these proponents of literalism advocate an original (salafi<sup>8</sup>) understanding and implementation of Islam during its earliest times, those of the Prophet and of his companions. Habib comments: “The fundamentalists posit a primordial—and mythical—literal meaning of the Qur’an which has never in fact been articulated” (Habib 2006). It also is well known that the hadiths came to constitute a primary resource for the interpretation of the Qur’an, because it soon became apparent that many of its passages were not self-explanatory.

Critics of literalism have produced a series of strong counterarguments. First, they insist, there is rarely one true understanding of a religious text. Indeed, literalists themselves found contradictions and anomalies in the Bible when they tried to subject it to their first-degree approach. Moreover, literalists often disagree with each other on the correct meaning of one statement or another (Bartkowski 1996).

In my view, the most potent critique of literalism is the demonstration by several scholars, among them Paul Flesher (2005), that literalism itself requires a code of reading and, hence, interpretation. Flesher explains that reading is a learned skill and that what children learn in schools is the code of converting words into specific sounds, images, and ideas. Most of the learning consists of exercises of either memorization or use of a code book called dictionary and another called grammar or syntax book, which defines the rules of combining words in sentences. Reading, in its literal (textual, lexical) sense, is an exercise in unconscious application of rules and codes. Flesher argues that biblical literalism is a coded exercise taught in Sunday school lessons and church sermons. He cites the code book produced by Cyrus Scofield for use of the Bible, whereby cross-references and such are made easy for the reader to follow. He concludes: “So literalism’s success derives not from a single meaning inherent in Scripture, but from its practitioners’ knowledge of its theological code. The explicit denial of this interpretive code . . . gives the theology power because it treats the theology as God-given revelation” (Flesher 2005).

Jeremy Patrick identifies problems relating to the literal reading/code of the scripture:

. . . who has the ultimate authority to pronounce what the language means, which tertiary texts are considered canonical, and the effects of an inconsistency on the ultimate authority of the document. . . . The problem with biblical literalism, then, is clear: once each side has found biblical support for its cause, the debate cannot be resolved. The only rational way to satisfactorily conclude such a debate is to interpret the principles contained behind the literal passages, and this deviates from the command of literalism itself. (Patrick 2001, 24)

Modernists and rationalists see in literalism an assault on reason, its use, and its place in the construction of any argument that relates to any extent to the religious life of society. As Jackson writes (2006, 1470), “literalism came to represent the antithesis of both modernity and reason. . . . Similarly, the idea that science, history, church authority, *ijmâ‘* (unanimous consensus [in Islam]) or social reality might suggest or compel non-literal renderings is regarded [by traditionalists] with suspicion if not contempt.”

#### LITERALISM IN ISLAMIC JURISPRUDENCE

The Zahirī school, a school of Islamic jurisprudence, is commonly considered to be the paramount literalist school. However, Jackson insists that Zahirīyya is not more literalistic in its juristic reasoning than the standard Muslim schools, and that all schools strongly adhere to juristic empiricism, which he refers to as a “hegemonic principle” in Islamic jurisprudence.

The name Zahirīyya derives from *zahir*, meaning apparent or evident, although it is universally referred to as “literalistic.” In a long entry on “al-Zahirīyya” in the *Encyclopedia of Islam*, Abdel-Magid Turki states that “it relies exclusively on the literal (*zahir*) sense of the Kur’an and of [the Prophet’s] Tradition” (Turki 2008). In his entry on “Ibn Hazm” (the Andalusian de facto founder of Zahirism<sup>9</sup>) in the *Encyclopedia of Islam*, Roger Arnaldez likewise pins the literalism label on the leader of Zahirism: “As far as the Kur’an is concerned, Ibn Hazm’s interpretation is always a literal one” (Arnaldez 2008).

Zahirism’s roots are in two important principles: (1) The Arabic language is of utmost, quasireligious importance; and (2) Religious, juristic rulings must be codified in such a way as to prevent biased, subjective whims from playing a role in reaching conclusions. Consequently, Zahirism distinguishes itself as a juristic school in its total rejection of *Qiyas* (reasoning by analogy) and *Ra’y* (scholarly opinion). Ibn Hazm dismisses *Qiyas*, in particular, on grounds of the vagueness of the idea of analogy and of the arbitrariness of its application (Why is analogy claimed in some cases and not in others?), instead relying solely on “sacred sources”—the Qur’an, the Prophet’s Tradition, and the consensus of the Companions (Turki 2008).

Zahirism thus refuses to infer any general principle that cannot be directly read in a specific and univocal sacred text. Instead it applies rulings as they appear from scriptures. When the Tradition prohibits the use of gold and silver vessels for drinking, Zahiris state that eating from them is permitted because this specific use is not mentioned in the prohibition. Likewise, when the Qur’an describes the pleasures of Paradise, it mentions eating, drinking, having sexual relations, and wearing beautiful clothes. Zahiris insist that all of these are literally true, while philosophers and liberal theologians argue that they should be understood metaphorically.

In the Islamic tradition, despite the existence of an equally strong inductive approach to juristic problems, as we shall see, the general public

literature and discourse are largely empiricistic, if not literalistic, in all areas of concern to the Muslim individual and society, including on questions relating to science.

Yusuf Al-Qaradawi refers to the renewed literalist trend as “neo-Zahirism” and characterizes it with the following features: (1) literal understanding and interpretation of the Texts; (2) rejection of the use of reason in justifying any Shari’ah rules; (3) systematic push for hard rulings; (4) arrogance in considering the literalist camp’s views as correct, in exclusion to all others; (5) lack of concern about eliciting discords; (6) aggressiveness toward all who disagree with that camp’s positions to the point of insulting and declaring opponents as heretics. He also gives a few examples of this trend, including the prohibition of photography (Al-Qaradawi 2006, 17).

#### SCIENCE-RELATED ISSUES IN TODAY’S MUSLIM SOCIETY

1. *Islamic Holy Months and Calendar.* Two socioreligious requirements led to the nature and format of the Islamic calendar: (1) the existence, over a given year, of religious holidays that relate to lunar phases, and (2) the specific intention of and injunction by Prophet Muhammad to have the Muslim nation distinguish itself in many ways from the other dominant religions, Christianity and Judaism. That is why the Islamic calendar is based on the lunar crescent, which determines the start of each month. Furthermore, the Qur’an explicitly outlawed the ancient practice of adding an intercalation month (*al-nasi*), thus making the lunar year shift through the seasons and the solar year.

No other constraints are placed by the Qur’an or the Prophet’s Tradition on the construction of the Islamic calendar. In fact, the Qur’an does not specify any rule or method for establishing the start of a month, be it “holy” (Ramadan, the month of fasting; Zul-Hijjah, the month of Hajj, the pilgrimage to Mecca) or “regular.” It simply says: “They ask you [Muhammad] concerning the new crescents. Say: They are but signs to mark fixed periods of time for men and for Hajj [pilgrimage]” (2:189). Indeed, the new thin crescent (*bilal*) that appears at the very beginning of the lunar month had been and continued to be used as the signal for the start of a new month. The Prophet, however, gave more explicit instructions for the determination of the start of a month. There are several hadiths relating to this, two of which summarize the rule in letter and in spirit:

1. “We are unlettered/illiterate people who can neither write nor count. The month is thus and thus and thus (showing his ten fingers three times) or thus and thus and thus, folding his thumb when he said it the third time (i.e. either 30 or 29 days). Fast (O Muslims) when you see the crescent, and end your (month of) fast when you see the (next) crescent. But if it is overcast (and thus can’t see the new crescent), then complete thirty days in the count [of the month]” (a

famous hadith related by Al-Bukhari and Muslim, the two highest classical authorities on hadiths).

2. "Do not fast unless you see the crescent (of Ramadan), and do not end (the month of) fasting till you see the (next) crescent, but if the sky is overcast, then act on estimation."

The second hadith, with its "Do not" injunction," easily lends itself to a literalistic understanding of the rule.

It soon became clear, however, that the use of a calendar is important, at least for socioeconomic purposes. From its earliest times, therefore, the Islamic society adopted for civil applications a crescent-based calendar. The first, and longest used, Islamic calendar was the "arithmetic," or *hisabi* (calculational), calendar, which alternates months of 30 and 29 days and corrects by one day on the twelfth month in leap years. This and other such calendars were used for many centuries, though mostly for civil purposes, not for religious ones. The crescent-based method for starting months was adopted because it was easy—or at least this is how it seemed then, when knowledge of astronomy and mathematics was minimal or nonexistent ("We are unlettered/illiterate people who can neither write nor count"). It was logical to adopt a method that was natural and clear to all, even if it soon was realized that it did not allow for advance planning (even over several months, let alone years).

Indeed, the lunar calendar, based on the crescents or phases of the moon, seems to be a natural and simple one. It allows everyone to know, by merely looking at the shape of the moon, which night of the month it is. But this apparent simplicity hides a serious complication. Although the lunar month alternates between 29 and 30 days (its average length being 29 days, 12 hours, 44 minutes, and 3 seconds), that time period actually varies between two very different values, from 29.27 to 29.83 days. Today this complication poses no problem, because we have sophisticated models of celestial mechanics as well as computer programs that allow us to calculate these periods very precisely at all times. The serious problem today lies in the insistence by many Muslims, especially the preachers, upon the literalist condition of visual observation of the new crescent as *the* definition for the start of the month, which introduces much greater complications. We continue to witness unacceptable differences in the start of the Islamic months from one country to another and sometimes within the same country, with newspapers carrying different Islamic calendar dates on a given day. Moreover, recent studies (such as Guessoum and Meziane 2001) have shown that the rate of error in the official determination of religious months during the past half-century has sometimes reached 90 percent!

The insistence on visual observation of the crescent on the "night of doubt" by "trustworthy" or "honest" witnesses, as the classical jurisprudence requires, not only introduces large human errors but also eliminates

the possibility of constructing a long-term calendar, whether that condition of visual observation is applied for the “religious months” only or for all months of the year. Even the acceptance by many conservatives that scientific calculations be used for negating erroneous claims of sighting is not a reasonable solution; this still prevents any determination of the start of a month ahead of time and therefore the construction of any calendar.

Here are a few examples of the literalistic positions being adopted nowadays by religious scholars, authorities, and even Muslim astronomers:

- In October 2007, Shaikh Saleh bin Muhammad al-Luhaidan, then chair of the Higher Judicial Council in Saudi Arabia, declared that the Kingdom “remained steadfast in its adoption of visual crescent sighting exclusively, according to the Prophet’s Tradition” (*Al-Riyadh* 2007). He added: “The Prophet said that we are a nation which does not write or count, and by that he means that in these divinely ordained rites, it does not abide by any calculations or writings, but rather only by what God Exalted ordained for the determination of the times of worship . . . moreover, astronomers are not required to be pious and sincere followers of the religion, whereas sighting testimonies require of people to be trustworthy, honest, and capable of conducting the observations. . . .”
- Sheikh Muhammad ibn Saalih Al-Uthaimeen, one of the most influential Saudi scholars of recent times, issued the following fatwa (religious decree): “With regards to the Qur’an, Allah Exalted says: *The month of Ramadan in which was revealed the Qur’an, a guidance for mankind and clear proofs for guidance, and the criterion (between right and wrong). So whoever witnesses the month should fast it* [2:185]. . . the sentence ‘*Whoever witnesses the month should fast it*’ implies that whoever does not witness it does not fast it. . . . And the Prophet said: ‘If you sight the crescent of Ramadan, then fast, and if you sight the next crescent, then end the fast. And if it is obscured from you, then complete thirty days’. He said: ‘If you sight it’, he therefore linked the ruling to the sighting, and if a ruling is linked to an effective cause, then that ruling is annulled in the absence of that cause” (Shaikh 2007, 61–62).

To be fair, other more progressive voices and intelligent efforts have appeared on the scene in recent times. In particular, Sheikh Ahmad Muhammad Shakir (1892–1958), an Egyptian scholar mainly of hadith but also of Fiqh (jurisprudence), defended the idea of adopting a fully computational Islamic calendar. Among Muslim astronomers, special mention should be made of Mohammad Ilyas, a contemporary Malaysian astronomer who, starting with a pioneering idea, the “lunar date line,” made attempts in 1984, 1993, and 1997 to construct crescent visibility criteria

and crescent-based calendars, both regional and global. (See Guessoum, Al-Atbi, and Meziane 1997; Guessoum and Meziane 2001.)

To sum up, the problem of determining the start of lunar months will not be solved if Muslims continue to insist on visual observation of the new crescent during the “night of doubt,” a practice largely based on a literalist reading and understanding of one or two hadiths and not the Qur’an, as I have emphasized. These prophetic injunctions are easy to understand in their spirit, for the Prophet himself explained that the use of visual methods was based on the fact that Muslims were *then* “unlettered/illiterate people who could neither write nor count.” Once this literal barrier is removed, the solution will be clear: Construct a calendar, which by definition determines the start of all months well in advance, and ensure that it concords with the visibility of the new crescent. This ensuring cannot reach 100 percent, but the propositions must seek to attain the highest possible levels of confidence and certainty. Several such calendars have been proposed in recent times (I review them in Guessoum 2007), and this remains a topic of scholarly discussion and research.

This solution, although imperfect, will be much better than the current standards, and it will allow Muslims to plan for their religious holidays in an organized manner. Companies, ministries, and Hajj travel agencies year after year lose millions of dirhams/riyals/dinars/dollars because of last-minute changes in holiday dates, hotel and flight reservations. Such changes often occur when people are, as per the tradition, invited to “seek” the crescent on the “night of doubt.”

2. *Evolution in Today’s Muslim Culture.* The idea of biological evolution constitutes a major cultural blockage in the Muslim world today. A large majority of Muslims do not distinguish between the facts of evolution (fossil record, anatomical and genetic evidence) and the theory/ies that describe and explain these observed facts. A recent survey of Muslims in six countries—Egypt, Indonesia, Kazakhstan, Malaysia, Pakistan, and Turkey—showed that, except for Kazakhstan, Muslims in these countries expressed negative views toward evolution, with roughly 60 to 70 percent of respondents saying either “Could not possibly be true” or “Probably false” and only 10 to 20 percent saying that evolution was “True or Probably true” (Hameed 2008).

Even highly educated Muslims expound a similarly negative position toward evolution. In late 2007 I conducted a survey of about 100 professors and 100 students at my university, and I found that fewer than 15 percent of Muslim respondents considered evolution as “strongly confirmed by evidence.” The rest said either that it is “only an unproven theory, and I don’t believe in it” or that “it is correct, except for humans.”

Indeed, the fundamental problem is Muslims’ wide refusal to consider the evolution of humans from prior species. In my survey only 10 percent of Muslim students and professors chose the answer “It is now a fact that

humans evolved from earlier species” on the question regarding human evolution. This rejection is based on a literalistic reading and understanding of the sacred texts, as I show below. Adam is the central issue for Muslims with regard to evolution, at least today. Many contemporary religious scholars find it so impossible to conceive of a pre-Adam species or even of a possible multiplicity of Adams, lineages that ended up disappearing (like Neanderthals and Java men), that they reject the theory of evolution wholesale for that reason.

Muslims did not always reject evolution. In previous times, up to the modern era (early twentieth century), they by and large accepted biological evolution and even welcomed it as long as it did not present itself in purely materialistic, atheistic garb, even though the question of human evolution often constituted a sore point. A number of modern Muslim scholars, thinkers, and writers (such as Jamal al-Din al-Afghani, Abu al-Majid al-Isfahani, Hussein al-Jisr, Mustafa al-Mansuri, and Mohammad Iqbal) have adopted various viewpoints largely accommodating the Darwinian theory, although usually with a theistic interpretation (see Abdul Majid 2002, Maréchal, Dassetto, and Muraille 2009,<sup>10</sup> and particularly Guessoum 2009 for a full review, historical and theological).

The literalist mindset has led to a simplistic conception of the creation of humanity, and sometimes of animals, a conception that insists that humans and animals were created in roughly the forms they presently have, that they have undergone little or no evolution. (A somewhat more intelligent variant of this is the “microevolution” standpoint, which accepts the evolution of species as species but no transformation from one into another.) Creationism is a literalistic religious movement. It is strong in the United States and in the Muslim world; it is virtually nonexistent elsewhere. However, unlike the situation in America, where creationism is widespread in the general religious public and where only a tiny fraction of the highly educated segment of society holds such views, in the Muslim world creationism is equally present among the elite and the less educated public.

Now, this creationist attitude can be directly linked to people’s literalist reading and understanding of the Qur’an and especially of the hadiths. In the story of the creation of Adam, which comes in only a handful of scattered verses in the Qur’an, we read:

And when your Lord said to the angels: Lo! I am going to create a mortal out of clay from black mud fashioned in shape. So when I have made him complete and breathed into him of My spirit, fall down, prostrating yourselves to him. So the angels fell prostrate, all of them together. (15:28–30)

O people! be careful of [your duty to] your Lord, Who created you from a single being and created its mate of the same [kind] and spread from these two, many men and women. . . . (4:1)

And We said: O Adam! Dwell you and your wife in the garden and eat from it aplenty wherever you wish, and do not approach this tree, for then you will be of the unjust. (2:35)

Then Satan began to whisper suggestions to them that he might manifest unto them that which was hidden from them of their shame, and he said: Your Lord forbade you from this tree only lest ye should become angels or immortals. And he swore to them both that he was their sincere adviser. So by deceit he brought about their fall: when they tasted of the tree, their shame became manifest to them, and they began to cover themselves with the leaves of the garden. And their Lord called unto them: "Did I not forbid you that tree, and tell you that Satan was an avowed enemy unto you?" They said: Our Lord, we have wronged ourselves, if Thou forgive us not and have not mercy on us, surely we are of the lost. He said: Get down, some of you [will be] the enemies of others, and there is for you in the earth an abode and a provision for a time. O children of Adam, We have indeed sent down to you clothing to cover your shame, and [clothing] for beauty and clothing that guards [against evil], that is the best. This is communication of Allah that they may be mindful. (7:20–26)

A number of observers have remarked that one can easily read some human evolutionary aspects in the various episodes of the Adam story related in the above verses (and others such as 38:71–72; 71:14). Others have noted that some verses can be interpreted to support the general biological evolutionary scenario as well (21:30; 24:45).

The literalist approach, as it is developed by its advocates (for example, Al Mujahid 2001), relies more heavily on hadiths, which tend to add more literal descriptions to the above Qur'anic verses:

The Prophet said, "Allah created Adam in his complete shape and form (directly), sixty cubits (about 30 meters) in height. . . ." (Al-Bukhari's collection, Volume 8, Book 74, Number 246).

Ibn Abbas and a group of companions of the Prophet (PBUH) narrated that after Iblis (Satan) was sent out of Paradise and Adam was accommodated therein, Adam was alone and did not have a partner from whom he could get comfort. He slept for some time, and when he woke up, he saw a woman whom Allah had created from his ribs. So he asked her, 'Who are you?' She replied, 'A woman.' He asked: 'Why have you been created?' She said: 'So that you may find tranquility in me.' The angels, trying to find out the extent of his knowledge, asked him: 'What is her name, O Adam?' He replied, 'Eve' (*Hawwa*). They asked, 'Why was she so named?' He replied, 'Because she was created from something living.' (*hay*)" (Al-Mujahid 2001, 89–90)

These hadiths present us with serious challenges if we try to fit them within our scientifically correct view of creation (of humans or of life more generally). The only solution is to advocate a metaphorical reading of these statements, assuming of course that they were indeed uttered by the Prophet. (The Islamic tradition universally considers the Al-Bukhari collection as the most genuine and reliable volume of hadiths ever assembled.) One must then take the allegorical route, which is in fact a rather common approach adopted by Muslim scholars whenever a contradiction is (apparently) found between the foundational texts or between the scriptures and reason.

3. *Animal Slaughter for Consumption.* The effects of the literalist approach on religious issues can be found in many areas of social life. Some cases are more directly related to science than others. In addition to the two topics I have discussed at some length above, I now briefly bring up another that is a step or two away from what usually is considered as science fields, but it is often considered a case of literalism and rebutted, at least partially, with scientific arguments.

The Islamic Shari'ah (Law) stipulates that for their meat to be lawfully consumed by Muslims, animals must be slaughtered in the name of Allah; all other methods of killing are prohibited, in principle. On this the Islamic Law has relied on a few Qur'anic verses as well as on a host of hadiths. The following are the main Qur'anic verses:

He hath only forbidden you dead meat, blood, the flesh of swine, and that on which any other name hath been invoked besides that of Allah. But if one is forced by necessity, without wilful disobedience, nor transgressing due limits, then he is guiltless, for Allah is Oft-forgiving Most Merciful. (2:173)

And eat not (of meats) which Allah's name hath not been pronounced on; that would be impiety. . . . (6:121)

In recent years, and especially with the appearance of mad cow disease, Muslim jurists have added emphasis on the way the animals are fed, for their consumption (after slaughter) to be *halal* (permissible). Regarding the Islamic tradition's requirement that the name of Allah be proclaimed ("In the Name of Allah, God is Great") at the moment of slaughtering, some more moderate scholars (such as Sheikh Yusuf Al-Qaradawi) have stated that making that divine-name pronouncement just before eating the meat is equally valid (IslamOnline 2003a; Al-Qaradawi 1994). Al-Qaradawi also argues (and offers religious justification on the basis of verse 5:5<sup>11</sup>) that the meat of the animals of Christians and Jews is considered lawful for consumption by Muslims, though others (for example, Shah n.d.) have rather convincingly argued that the hadith giving this permission assumed that Christians and Jews are slaughtering (that is, draining the blood of) their animals. Furthermore, especially in the West, Muslims have started to ask about the lawfulness of using new techniques, such as anesthetizing animals (IslamOnline 2003b) or stunning them by electric shocks (IslamOnline 2003c) before slaughter, both of which have been deemed acceptable or even advisable (by Sheikh Al-Qaradawi and the Islamic Fiqh Council of the Muslim World League, respectively) in order to minimize an animal's suffering during the slaughter, as long as those techniques do not kill the animal before the slaughter.

Other Muslim jurists have made it an absolute must for animals to be slaughtered in the Islamic way for their meat to be *halal* for consumption. This is the position of the famous Pakistani scholar Abul A'la al-Mawdudi ([1972] 2006). Those who disagree consider this a clear case of literalism.

Indeed, modernist Muslim authors have started to challenge the general agreement on the religious necessity of animal slaughter. Haoues Seniguer (2007; 2008) argues, at least partially on scientific grounds, that one of the main reasons for the Islamic rules (prohibition of the consumption of blood and of any animal still containing blood, that is, killed by a blow, as well as the requirement of slaughtering, that is, draining of blood) is to get rid of all bacteria and viruses in the animal. This higher goal could not be explained to people at the time of Prophet Muhammad, but the principle was revealed to him, although he himself could not understand the scientific reasons behind it. Now, says Seniguer, we can achieve the same goals with more sophisticated and efficient techniques, so that the meat one buys at the supermarket is at least as good, if not healthier, than the meat of an animal killed in the traditional way. The author asks on what grounds one could, from a literal reading of the Qur'an, declare as lawful the meat from an animal killed by a dog<sup>12</sup> but prohibit the meat from an animal killed at the slaughterhouse, not in the Islamic way but under full veterinary supervision. Furthermore, Seniguer (2008) highlights the fact that the Qur'an insists in two successive verses, 5:4 and 5:5, that all good food has been allowed for Muslims. Tareq Oubrou (2000) makes practically the same point when he asks why Islam refuses the consumption of meat that has not been cleansed of its blood. His answer: Because the blood contains unhealthy germs. Hence, he concludes, if one is assured that a butcher is honest and has followed hygienic rules producing the same result as the Islamic objectives, the meat should be acceptable (Bowen 2005, 326–46).

However, Muslim jurists insist that the main argument for slaughtering is not medical but rather theological. The taking of an animal's life must be done in the name of Allah, whether by slaughtering (the method prescribed by the Prophet) or by shots (bullets or arrows) and retrieval by dogs. (See Shah's extensive review of the subject and of the different opinions adopted by scholars, both classical and modern.) The counterargument is that the taking of the lives of fish, big or small, is exempted from both the slaughter method and from the uttering of God's name at the time of killing.

This issue is interesting both because it may be a case of literalism and because it raises theological and scientific (medical) issues and arguments.

#### THE MAQASIDI (OBJECTIVES-BASED) APPROACH AS A THEORETICAL AND PRACTICAL SOLUTION

Recalling that the early development of Fiqh (Islamic jurisprudence) followed in the footsteps of the collecting of hadiths and the construction of the Islamic foundational and normative corpus, it is easy to understand that the early Fiqh methodology was empiricist (looking for direct textual references) and deductive and that the reasoning was analogical at best. In fact, even analogy was often criticized for its lack of rigor. Indeed, a jurist

(faqeeh) could always select the text that suited him and proceed with deduction and/or analogy from it.

Higher principles and objectives were only slowly extracted and set forth as normative in the treatment of novel legal cases. First, grand principles were set for the very existence of Shari'ah (Justice and Happiness among humans) or even Revelation (Worship of God). Then general objectives of Shari'ah were extracted: the preservation of religion, life, reason (or intellect), lineage, and money (or property), as established by Al-Ghazali (d. 1111) in particular and later accepted by most scholars. Then, in a revolutionary step, Abu Ishaq Al-Shatibi (d. 1388)<sup>13</sup> realized that, instead of the deductive approach, one needed to proceed by induction: Start from the text (and, some scholars insist, from the practice/tradition of the people) and extract more general principles that transcend both the text and the past practices; from those principles, one could then reason and address any new case. The most general principle Al-Shatibi extracted was that Shari'ah simply aimed at achieving human good or benefit. He and others realized that this general principle, as well as the five preservation "laws" or objectives, are so general that they are universal, that is, they go beyond Islam and are accepted by all cultures.

The first main principle that Al-Shatibi insisted on is *masalih* (benefits to people), to which he added the subcategory of *masalih mursala* (benefits for which no direct textual basis can be exhibited). His most famous and influential<sup>14</sup> work is *Al-Muwafaqat fi Usul al-Shari'ah* (The Congruences in the Sources of Islamic Law), where he expounded the theory of *Maqasid Al-Shari'ah*. This theory does not seem to have had any major impact on the scholarship or implementation of Islamic law until the twentieth century, when it was picked up and re-presented with some improvements by the late great Tunisian scholar Mohamed Taher ben Achour (d. 1973), by the contemporary Pakistani Islamic Law expert Muhammad Khalid Masud, and to a lesser extent by the Moroccan scholar 'Allal al-Fasi (d. 1973). Modern-day Muslim reformers from Rachid Rida to Tariq Ramadan also have found it a great source of renewal of legal rulings and practices. Jackson explains:

For al-Shâtîbî, a text's weight was to be based neither on its substance nor its authenticity alone but on its relationship to a universe of meanings and values that were inductively extrapolated from an *aggregate* of texts. . . . Al-Ghazâlî, for example, makes a point of clarifying that the *maqâsid* are known "not on the basis of any single proof-text (*dalîl*) nor on the basis of any specific principle but on the cumulative strength of proofs too many to enumerate." (Jackson 2006, citing Al-Ghazali's "Al-Mustasfa min 'Ilm al-Usul")

Scholars such as R. M. Gleave (2008) see the theory of *Maqasid* as having roots in the Islamic rational theology and law that was produced by the Mu'tazila, since one of the prime principles of this school, namely divine justice (after divine unity), necessarily implies divine goodness in the laws

that God would institute for humans. Furthermore, the earlier development and establishment of *qiyas* (juristic analogy) and *istihsan* and *istislah* (rulings that are based not on sacred texts but rather on some clearly discerned benefit to the individual or community) as principal methods and principles of Islamic jurisprudence paved the way for the development of the *Maqasid* theory.

The advocates of this theory find support for it in the Qur'an,<sup>15</sup> in the Prophet's Tradition,<sup>16</sup> in the Companions' understanding of the Law, and in the scholarship of jurists throughout the history of Islam (Hamiche 2005, 30–35). Ibn al-Qayyim (1292–1350) wrote: "The Qur'an and the Prophet's Sunna are replete with justifications of the rules with benefits and wisdom. . . . If those references amounted to one or two hundred, I would have cited them, but in fact they number over a thousand in different manners" (Arraysuni 2005). Ahmed Arraysuni, one of today's experts on Al-Shatibi and the Maqasidi approach, writes: "The Prophet's companions were the first to state—nay, to unanimously hold—that the main goal of Shari'ah is *maslaha* (benefit), and that its rulings are always for some benefit they produce or some harm they prevent." He quotes Al-Shatibi, who declared: "The companions knew the objectives of the Law and achieved them, and they established its bases and principles, and their thoughts were made clear by its signs, and they worked hard in fulfilling its principles and its goals" (Arraysuni 2005).

Al-Shatibi was the first to put the theory on firm conceptual and methodological grounds. He developed a model of Islamic Law consisting of three concentric circles: (1) the essential laws (*daruriyyat*), which preserve basic interests; (2) the practices that are complementary but "needed" (*hajiyyat*) in order to facilitate the implementation of the "essentials"; and (3) the (cultural) elements that are neither necessary nor really needed but help improve, or "embellish" (*tahsiniyyat*), the benefits already enjoyed by the believers.

Masud, an expert on Al-Shatibi and the Maqasidi (objectives-based) legal construction, goes further. He states that Al-Shatibi "assimilated into Shari'ah" laws and practices simply "on account of public convenience." As an example he mentions *mudaraba*, the commercial practice by which Meccans deposited capital with traders who traveled to the north and south of Arabia on the agreement that upon their return the traders would share the profit with the depositors. According to Masud, "The strict rulings of *shari'a* would not allow such transactions due to the risk, uncertainty, and speculation involved" (he refers to verse 2:12). However, "The jurist law assimilated the practice into its system so successfully that the Islamists today present it as the Islamic mode of finance and as a feasible alternative to the capitalist and socialist models." In short, he concludes, "al-Shatibi finds the normative basis of *shari'a* deeply rooted in human reason and social practices and standards" (Masud 2001).

More recently, some Muslim scholars and commentators have argued that the general principles we find in the scripture or in the traditions of Fiqh often have equivalents in European social norms or law as well as on the latter's ethical dimension. They argue that this common ground should be used as the starting point for "rethinking normativity" (Bowen 2005, 342). However, this social and ethical basis of norms and even the looser objectives approach are rejected by other scholars, especially those of the traditional Muslim world, as "too radical a departure from the traditions of Islamic jurisprudence" (Bowen 2005, 342).

The principles of Maqasid are treated in some detail by various authors (Ben Achour [1946] 2001; Habib [1427H] 2007). The objectives generally are divided into the following categories: general ("global") and "partial" (Habib [1427H] 2007, 299–301), main ("original") and derived ("following") (pp. 292–96), worldly and afterworldly (pp. 289–91), "final" and "intermediate" (or "transitory") (pp. 297–98), and "definite" and "apparent" (Ben Achour [1946] 2001, 231–39).

Some scholars have reviewed the general principles of the Maqasid theory, including its five main "preservation laws," and made some useful additions or comments. They have questioned the limitation to five of the main principles/laws (Atiyah 2003, 91–105). They have looked at the areas of application of those laws and sought to extend them. For instance, the preservation of reason usually has been explained as a necessary means for making sound religious judgments (of worship by laymen and of rulings by jurists) and is exemplified in Islam's insistence on education, which trains the mind to make sound judgments, and on the prohibition of intoxicants (wine, liquors, and drugs), which cloud one's mental ability. Some scholars have found modern areas of application of these principles, such as freedom of expression, human rights, political action, and even scientific research and development (Al-Jundi 2003, 253–54; Atiyah 2003, 80–87, citing Al-Hasani 1995 and Al-Qaradawi 1990). The principles of preservation of life and lineage have been invoked in such matters as in vitro fertilization, cloning (no for human cases, yes for other organisms and animals), euthanasia, and organ transfer (Al-Jundi 2003, 71–74). More important, new principles have been proposed that put greater emphasis on the social dimension of Islam: tolerance, equality, and freedom (Ben Achour [1946] 2001, 249–410; Atiyah 2003, 79), and new approaches have been proposed to take greater account of modern disciplines, including the social and physical sciences (Sano 2000).

This objectivist approach clearly can help resolve some important science-related issues in Islam, particularly practical ones such as the calendar problem (or determination of holy months) and the animal slaughter or consumption issue. Indeed, instead of narrow-mindedly insisting on the literal application of the hadiths that instructed early Muslims to declare the start and end of Ramadan (fasting) by visually observing the first cres-

cent of the month, one appeals to the greater objective of ascertaining the start of the new lunar (either conjunction-based or crescent-based) month and using all of the scientific means at one's disposal, which can only help plan for the month in advance while also ridding Muslims of much confusion and disagreement.

This same general approach can have some indirect impact on the more conceptual issues, such as the question of evolution—first, by stepping above the literalist approach, thus producing a mindset and a general methodology that urges people to look at the issues in a more conciliatory way toward science, and, second, by insisting on the “preservation” or “embellishment” of reason and intellect and thus giving the latter more weight in considering such topics.

In anticipation of such a major role of reason and intellect, Al-Shatibi addressed the question of what one should do if reason saw benefit in some action but the Islamic law had not decreed it. He argued that one should refer that benefit to the general principles and objectives of Shari‘ah and see if one finds accord or discord therein. This is a sound general approach for our science-related issues and more global purposes.

#### SUMMARY AND CONCLUSION

The first issue I highlighted in this essay is the reemergence of religious literalism as a trend among today's Muslims, the general public as well as most of the elite, and the increasing dominance among Muslim jurists of what Jackson calls an “addiction to juristic empiricism.” Most notable is the preponderance of the literalist stand among preachers and populist scholars.

Other Islamic Law scholars, especially Al-Shatibi, have developed an objectives-based approach, the *Maqasidi* approach, which has sought to find normativity in higher principles inducted from the foundational texts as well as from the social practice and understanding of Shari‘ah. As Masud notes, “Muslim jurists in the past were quite aware of the constant need to reconcile contradictions between social and legal norms. They continuously adjusted laws to bring them in line with the customs and norms of the people” (Masud 2001, 5).

The *Maqasidi* approach seems to be making a timely and important, if perhaps modest and slow, comeback on the public scene, with Muslim scholars from the traditional lands of Islam as well as from the West bringing it back for solving contemporary problems of Muslim society. Contemporary jurists have attempted to apply this approach to novel cases such as in-vitro fertilization (Kasule 2005) and the performance of Islamic rituals (prayers, fasting) by astronauts aboard the space station.<sup>17</sup>

In this article, I have emphasized the problems raised by the literalist approach when applied in science-related issues, both practical and conceptual. I treated two cases in some detail: (1) the determination of Islamic

holy months, for which I stressed the need to construct an Islamic calendar and hence adopt an objectives-based approach, and (2) the question of biological and human evolution, for which it is clear that a literalist understanding of the sacred texts, especially the hadiths, leads to a serious disagreement with modern science, whereas a more informed and allegorical reading allows for more harmony between Islam and modern science. I also briefly examined an issue that is often viewed through the literalism-objectivism prism, the question of the consumption of meat of animals after slaughter (or not), and highlighted the science and the theological arguments that lead jurists to adopt one approach or the other.

There is one major exception to the strong literalist trend that has become dominant in the Islamic discourse these days. That exception is the cultural phenomenon of I'jaz, the claim that there is "abundant miraculous scientific content in the Qur'an," a claim that has translated into major and varied productions such as books, lectures, videos, websites, and conferences. I address this phenomenon (and its ills) along with its historical and cultural roots elsewhere (Guessoum 2008; 2009). Suffice it to say that in this field, Qur'anic verses and even hadiths are interpreted to the point of gross distortion, often by the same people who on juristic issues cling to literal and textual argumentation.

#### NOTES

1. In the study "Conservative Protestantism and Public Opinion toward Science" (Ellison and Musick 1995) the data from the 1988 General U.S. Social Survey were analyzed. It was shown that 34 percent of respondents could be labeled "literalists," having agreed with the statement "The Bible is the actual word of God and is to be taken literally, word for word." Literalists were twice as likely as others to show negative views toward science, as in "Science pries into inappropriate areas" and "Science breaks down ideas of right and wrong."

2. One exception is the recent chapter by Farid El Asri (2009) in the book edited by Brigitte Maréchal, Felice Dassetto, and Philippe Muraille (2009). El Asri presents a bibliography of Islamic books dealing with the question of human evolution targeting and available to "general public" Muslim readers in Belgium and France.

3. "Literalism in the United States is far more widespread than most realize or are even prepared to accept," writes Crapanzano (2000, 84). The same could be said about the Muslim world today.

4. The Hadith is the body of "hadiths" (*ahadith* in Arabic), which refer to the Prophet Muhammad's statements and actions as transmitted by his companions and those who followed them. During the first two centuries of Islam, the Hadith was the subject of intense research to collect and assess the veracity of every statement that came down. The large number of hadiths that came to be considered as genuine (*sahih*) occupy a high place in the Islamic tradition, a place second only to the Qur'an in the Islamic corpus.

5. Luther had stated that the literal sense is "the highest, best, strongest, in short the whole substance nature and foundation of the holy scripture" (1970, 39).

6. "Scripture, they say, is fertile and thus bears multiple meanings. But I deny that its fertility consists in the various meanings which anyone may fasten to it at his pleasure. Let us know, then, that the true meaning of Scripture is the natural and simple one, and let us embrace and hold it resolutely. Let us not merely neglect as doubtful, but boldly set aside as deadly corruptions those pretended expositions that lead us away from the literal sense" (Calvin 1964, 84f.).

7. The Scopes trial, conducted in 1925 in Tennessee, tried a teacher who had violated the law that prohibited the teaching of the theory of evolution.

8. Salafism refers to the Islamic movement that considers the early generations of Muslims (Salaf, the Prophet's companions and their immediate descendants) as exemplary models in the understanding and implementation of Islam.

9. Although originally founded by Dawud ibn Khalaf (d. 884), none of whose works survive to the present, the Zahiri school can be considered the product of the mind of Abu Muhammad Ali ibn Ahmad Ibn Hazm (994–1064), a jurist, theologian, historian, philosopher, and poet. Roger Arnaldez describes him as “one of the greatest thinkers of Arabo-Muslim civilization, who codified the Zahiri doctrine and applied its method to all the Kur’anic sciences” (Arnaldez 2008).

10. Maréchal, Dassetto, and Muraille’s book is an edited volume of several contributions, including a few on Islamic views of evolution. Of particular interest are Zakaria Seddiqui’s exegetical review of the Qur’anic verses relevant to the topic, Tareq Oubrou’s attempt to present an Islamic viewpoint both true to the spirit and letter of the Qur’an and accommodating to evolution (though not unconditionally), the two reviews of Turkish creationism by Jean-Marc Balhan and Philippe van den Bosch de Aguilar (separately), and Farid Asri’s examination of the educational situation with regard to human evolution. It is interesting that none of these works addresses the problematic hadiths that present a clear literalistic viewpoint and challenge.

11. “This day are (all) good things made lawful for you. The food of those who have received the Scripture is lawful for you, and your food is lawful for them.”

12. “They ask thee (O Muhammad) what is made lawful for them. Say: (all) good things are made lawful for you. And those beasts and birds of prey which ye have trained as hounds are trained, ye teach them that which Allah taught you; so eat of that which they catch for you and mention Allah’s name upon it, and observe your duty to Allah. Lo! Allah is swift to take account” (5:4).

13. Abu Ishaq al-Shatibi was an Andalusian Islamic scholar known mainly for his high expertise of Fiqh (jurisprudence) in the Maliki *madhhab* (juristic school), though he also wrote in other fields of religious scholarship, including theology. He revolutionized the whole approach to Islamic Law by systematizing the *Maqasidi* (objectives-based) approach, for which earlier ideas had been developed by Al-Juwainiy and Ibn al-Qayyim, in particular.

14. Rachid Rida described the book as “unequaled in its field” and referred to Al-Shatibi as “among the greatest reformers of Islam” (Hamuda 2005).

15. “And We have sent you but as a mercy to the worlds” (21:107); “I [the prophet] only desire (your) betterment to the best of my power” (11:88); “Take alms out of their property, so that you do cleanse them and purify them thereby” (9:103).

16. The prophet refrained from rebuilding the Kaaba so as not to confuse and provoke the Arab tribes. He also prevented his companions from stopping a man who started urinating in the mosque.

17. The document “A Guideline for Performing Ibadah at the International Space Station (ISS),” prepared by the Department of Islamic Development in Malaysia as a reference for the Muslim astronaut in performing rituals on board the ISS, purports to “guide on how to fulfill the *al-maqasid al-shari’ah* in any situation”; it soon, however, turns into a literalistic description of rules (for washing up, for cleansing oneself, for determining the direction of qibla, for determining the prayer time, for praying, for fasting, for caring for the deceased) in a recipe-like, step-by-step rule book (<http://www.scribd.com/doc/6652891/A-Guideline-Ibadah-at-Iss>). See also Fischer 2008.

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