

ON ISLAM AND EVOLUTIONARY THEORY

Samsul Ma'arif Mujiharto

Gadjah Mada University, INDONESIA

บทคัดย่อ

บทความนี้มีจุดมุ่งหมายเพื่อสำรวจทัศนะของนักชีววิทยามุสลิมชาวอินโดนีเซียเกี่ยวกับทฤษฎีวิวัฒนาการ โดยอาศัยมโนทัศน์แห่ง “ความเป็นเหตุผล” และ “พันธกิจทางศาสนา” ของสเทนมาร์ค นอกจากนี้ยังต้องการแสดงให้เห็นว่าแง่มุมทั้งสองนั้นเชื่อมโยงกันอย่างไร และว่าความเป็นเหตุผลมีความหมายต่อพันธกิจทางศาสนาอย่างไร บทความนี้เริ่มต้นด้วยข้อสังเกตทั่วไปในประวัติศาสตร์เกี่ยวกับการพบกันระหว่างทฤษฎีวิวัฒนาการกับศาสนาอิสลาม และสำรวจมุมมองต่างๆ ของนักชีววิทยามุสลิมชาวอินโดนีเซียที่มีต่อทฤษฎีวิวัฒนาการ มีการสัมภาษณ์นักชีววิทยามุสลิม ๓ คน จาก ๓ มหาวิทยาลัยในประเทศอินโดนีเซีย เพื่อที่จะทราบถึงชนิดของความเป็นเหตุผลที่พวกเขาเหล่านั้นนำมาใช้และเพื่อที่จะทราบว่า ความเป็นเหตุผลมีอิทธิพลต่อพันธกิจทางศาสนาของพวกเขาอย่างไร ข้อค้นพบในบทความนี้ชี้ให้เห็นว่า (๑) คำตอบที่คลุมเครือต่อเรื่องวิวัฒนาการในสังคมมุสลิมเป็นเพราะคัมภีร์อัลกุรอานไม่ได้ระบุให้เด่นชัดเกี่ยวกับเรื่องราวการสร้างมนุษย์ยุคแรก และ (๒) ดังนั้น จึงมีผลทำให้คำตอบของบรรดานักชีววิทยามุสลิมชาวอินโดนีเซียที่มีต่อทฤษฎีวิวัฒนาการนั้นพลอยไม่ชัดเจนไปด้วย

Abstract

The paper aims to explore Indonesian Muslim biologists' views on the evolutionary theory. Employing Stenmark's concepts of “rationality” and “religious commitment”, this study wishes to show how these two aspects are interconnected, and how a certain rationality primarily constitutes a certain religious commitment. The research involves both library and field research. The library research is to get a general overview on the

relation of evolution and Islam (and Muslim) in the past. While a small scale, in-depth, and qualitative field research project is intended to portray the views of Muslim biologists in Indonesia on the theory. Interviews that include three Muslim biologists from three universities in Indonesia are also conducted to explore what kind of rationality they have and how this rationality influences their religious commitments. The findings report that: 1). The ambiguous responses to evolution in Muslim society are because Koran does not explicitly deal with the first-human creation story. 2). The various responses of Indonesian Muslim biologists to the theory along with their variety of understandings of the rationality and its relation to the religious commitment is also due to this ambiguity.

Evolution at the “Crossroads”

Evolution Theory, (heretofore abbreviated with ET) has had great impact not only on the natural sciences but also disciplines such as Sociology, Psychology, and Philosophy. In the field of religion, it has also created great controversy as it came to question the role and existence of God. Since the publication of the *Origin of Species*, some have taken the position that there is no real conflict between the creation story in Genesis and the theory that all life forms including humans evolved gradually. Yet others have considered evolutionary theory a challenge to religion and a “godless philosophy”, based on the principles of regularity and predictability that in some extents opposed the great role of God in creation.

In Muslim world, especially among modern Muslim thinkers, an argument from design is extremely popular. Yet there have been approaches that minimize the challenge of evolution to Islam. In the early 20th century Muhammad Iqbal, in his *Reconstruction of Religious Thoughts in Islam*, concluded that God is a “skilled worker” in the sense that He actively engages in a dynamic, sustainable, and unfinished creation. Consequently, gradual evolution is a sign of God’s creativity and God’s partnership in the creation. Iqbal, however, disagrees with Darwin due to his materialistic interpretation of evolution. Indeed, he continues his argument; the Koran uses the words ‘bashar’ or ‘insan’, not ‘adam’ to reserve for a man with special capacity. So, it is clearly mentioned that the word ‘adam’

is used more as a concept than the name of a concrete individual human¹. The issue seems to hinge on how we understand the idea of scientific fact?

Scientific understanding seeks support in facts and theories that can explain the process on first-human creation in a coherent manner. The evolution theory, in this context, is both a fact and a theory. It is an incontrovertible fact that organisms have changed, or evolved, during the history of life on earth. In this sense, the theory of evolution could never be religiously neutral. It may or may not contain declarations concerning the divine, but it cannot avoid making implications concerning that domain. This “hidden-metaphysical-philosophy” implicit in modern science brings the idea of theory into the issue of the relationship of science and religion.

Thus, though science and religion occupy different domains and speak to different issues, it is the role of theory that shows itself as the major problem in both. Science and religion, like other human endeavors, are spaces in which we create our stories about the world that are not necessarily coherent but fulfill different and equally important functions for human life. If the creation stories were taken literally, as *logos*², people would lose the depth and the power of *mythos* to answer the abstract-existential questions³. Both *logos* and *mythos* participate – and, sometimes compete⁴ – to encompass creation⁵. This is why we could say that the issue of creation is at the crossroads between science and religion.

The Evolution in Muslim World and Its Ambiguities

Along with my research I found at least three models of arguments responding to the theory. Interestingly, some Muslim scholars often use the same model of argument but they ambiguously come to a different conclusion. Noted at least there are two things that cause this ambiguity. *Firstly*, it is because the Koran is not a “book of science” or a “book of philosophy” that deals in detail about the creation story of the first human being. The Koran only says that human beings are made of certain things and there is no further explanation of “how” the creation was actually done⁶. This “mystery of how” consequently opens up the variety of interpretations. *Secondly*, there are different levels of understanding of evolution among the thinkers of evolution that even become more complicated

by their different political, social and cultural viewpoints. These two causes significantly contribute in shifting the models of argument, they are: philosophical-metaphysical, literal, and literal-scientific arguments.

1. Philosophical-Metaphysical Argument

This model refers to the so-called metaphysics in philosophy that talks more about what is behind “physics”. As this model uses a philosophical approach it accordingly does not deal directly with the substantial issues of ET, which depends upon empirical data. This model is usually based on Sufistic thought that is generally evolutionary in terms of exposing the evolutionary stages in the human soul, which progress from the lower to higher level through certain spiritual trainings. Of course, this Sufistic evolutionary view does not “match” directly with Darwinian evolution because it focuses more on the spiritual world. However I still put on the board, as some metaphysical views are congruous with epistemological views.

The first figure in this group is Abu Bakr Muhammad Ibn 'Arabi (1165-1240). In his '*Uqlatu al-ustawfiz*' he stated that there were many Adams before Adam⁷ and the creation is not always based on the *creatio ex nihilo* principle⁸.

God showed me, when I was asleep, that I was circumambulating the Ka'ba with some people whose faces I don't recognize. These people recited two verses of poetry, one of which stayed in my mind and the other.

“We have been circumambulating, like you circumambulate, for many a year,

In this Holy House, all us together, collectively”,

The other verse escaped me, and I wondered about that. Then one of them addressed me and gave me his name, which I did not know. He said: “I am one of your ancestors”. So I asked him: “How long is it since you died?” He said: “About 40,000 years ago”. So I said: “But Adam didn't live that long ago”, to which he replied: “Which Adam are you talking about? The one nearest to

you or another one?” Then I remembered the hadith of the Prophet that God (Allah) has created 100.000 Adams, and I said to myself: Perhaps this ancestor who says that I am related to him is one of them (i.e. one of Adams)”.

History is ignorant of this (the different Adams) just as it is ignorant of the fact that the world is undoubtedly originated. The world cannot have the position of the Ancient: that would mean the negotiation of priority, for it is acted-upon by God who has given it existence out of nothing⁹.

He also presupposed the concept of the “perfect human” that differs from the “animal human” which is characterized by brutality. All people through certain spiritual exercise have equal chance to be a perfect human, but of those who fail to achieve that level would be considered equal to “animal human”. Meanwhile, to achieve the level of “perfect man”, a person is obligated to worship the Lord and follow all religious teachings and glorify Him and do everything in order to develop an intimate connection with Him¹⁰.

The second major figure of this group is Jalaluddin Rumi who stated that evolution is the act of God that progresses the human being from “animality” to “humanity”. In his *Masnawi-ye Ma’nawi* as quoted by T.O. Shanavas he said:

“He came first to the inorganic realm and from there stepped over the vegetable kingdom. Living long as a plant, he has no memory of his struggles in the organic realm. Similarly rising from the plant to animal life he forgets his plant life, retaining only an attraction for it which he feels especially in the spring, ignorant of the secret and cause of his attraction like the infant at the breast who knows not why he is attracted to the mother. . . Then the creator draws him from animality to humanity. So he went from realm to realm until he became rational, wise and strong. As he has forgotten his former types of reason (every stage being governed by a particular type of reason) so he shall pass beyond his present reason. When he gets rid of this coveted intellect, he shall see a thousand

other types of reason”.

“I died from the inorganic realm and became a plant; then I died from plant life and became a man, so why should I be afraid of anything less through another death? In the next step I shall die from humanity to develop wings like angels. Then again I shall sacrifice my angelic self and become that which cannot enter imagination. Then I become non-existent when the divine organ strikes the note. “We are return unto Him””.

He also points out that creation is like a journey that a human needs to experience from the “physical existence” to “metaphysical existence” phase and eventually they would return to God as the main source of creation. God is an extraordinary charm that attracts all beings to approach Him¹¹.

Meanwhile, using the same model of argument, Afghani rejected the theory. For example, as cited by Aly Remtulla, he wrote: “*It would be possible that after centuries of the passage a Mosquito could become an elephant, an elephant could become a mosquito*”¹². This statement is easily understood but does not match with Darwinian evolution due to its simplistic use of the term “changing”, and not “evolving”. Afghani, by stressing the impossibility of self-existence of the universe, wants to emphasize that God is the only creator of the universe¹³. In his *al-Radd ala al-Dhahriyyin* (Against Materialism) Afghani also criticizes the materialist philosophy that reduce humans to animality¹⁴. Consequently, evolution theory is so in line with this materialistic philosophy that should be rejected.

The next figure is Sayyed Hosein Nasr who criticizes ET because by means of historicism, utopianism and secular ideas, the evolutionists seek to replace immortality with transitory existence. ET in this case could be a potential aspect that alienate humans from nature because:

“The theory of evolution did not provide an organic view for the physical sciences but provided a way of reducing the higher to lower, a magical formula to apply everywhere in order to explain things without recourse to

any higher principle causes. It also went hand in hand with a prevalent historicism which is a parody of the Christian philosophy of history, but which nevertheless could only take place in the Christian world where the truth itself had become incarnated in time and history”¹⁵.

Metaphysically speaking, species in the view of Nasr does not consist of matter only and it is impossible to physically and gradually grow. The metaphysical views could not accept the possibility of physical evolution from the simpler (lower) to the more complex (higher) one¹⁶. The only possible evolution is before matter (the soft life). Through secularization, the evolution theory is cut off from its metaphysical basis¹⁷.

2. Literal Argument

This model develops interpretations based “only” on a literal reading of the verses of the Koran. Literalism definitely closes the possibility of interpretations based on anything outside of the Koran. Fazlur Rahman¹⁸, for example, successfully compiled the creation verses and systematized them as follows: “He (God), created Adam from clay, which created an extract, *sulala* (cement reproduction). When inserted into the womb it cements the creative process. However, human beings are differentiated from other creatures, because God breathed His spirits into humans”.

In addition, Syahin in his *Adam Qishah Abi al-Khaliqah baina al-Usthurah of al-Haqiqah*, uses the same model to unveil the mystery of the first human creation and surrounding issues. The compilation contains verse-by-verse literal interpretations. Employing this model Syahin remains committed to a so-called “safe position”, because he does not confront the tensions between the Koran and evolution.

In his view, Shad: 71-85 is the first verse to explicitly deal with the creation story¹⁹. The story is as follows: 1) God informed to the angels that He would create basyar. 2) God created basyar and commands the angels and devils to worship basyar. Responding to the command, the angels obey but the devils do not because they consider themselves superior to basyar, as basyar are made of mere dust while they made of fire.

In unveiling the mystery of Adam, Sahim clarifies three terms that

are widely misunderstood: *basyar*, *insan*, dan *Adam*. *Basyar* is originally taken from *ba-sya-ra* that refers to certain creature made of dust²⁰. The word *basyar* has four meanings; empirically seeable creature (*al-dhahir 'alaa kulli al-kaainaat*), creature in general (*al-makhlūq bi ithlaaq*), non-special creature (*al-makhlūq ghoiru mutamayyiz*), and special creature (*al-makhlūq mutamayyiz*)²¹. Of those meanings the first is the most substantive one. Interestingly, Syahin acknowledges the “perfecting process” (*thariq al-istikmal*) to open the possibility of the evolutionary process²². Initially, *basyar* could not see, listen and even understand but then *basyar* gradually found the signing language and finally oral and written language that implies their capacity improvement in seeing, listening and even understanding.

The second word; *insan* (*khalāqa al-insan*) is mentioned in 35 verses²³. Unfortunately, Syahin does not completely define *insan*. We could, however differentiate *insan* from *basyar* from his comparative explanation. *Basyar* refers to all two-footed creatures able to stand upright and *insan* refers to a *basyar* who possesses knowledge and obedience to God²⁴. Thus, Adam is the first *insan* and is also known as “the father of *insan*” (*abu al-insan*), not “the father of *basyar*” (*abu al-basyar*). Consequently, all *insans* are *basyars* but not all *basyars* are *insans*.

3. Literal-scientific Argument

Compared to the previous two models of arguments, this argument is often the clearest because it is contextually more related to Darwin’s theory of evolution. For those who reject ET, they emphasize the weaknesses of ET and interpret the Koran as being superior. Meanwhile, those who accept ET try to reconcile scientific facts with the Koran. To explain the two views within this model I review Harun Yahya and T.O. Shanavas; the former represent the opponents of ET, while the later represents the supporters of ET.

Harun Yahya is widely known as part of the anti-evolution group that has a strong political influence in Turkey. Politicians wanting to remove the teaching of evolution in schools support him²⁵. He comes to his arguments by trying to show some seemingly scientific weaknesses of ET on one hand, and appealing to the greatness of Allah’s power in human

creation on the other. Furthermore, Yahya tries to demonstrate that the theory is ideologically biased in materialism.

Yahya rejects the theory in regard to at least three issues: *firstly*, the excessive claims of evolutionary scientists who seemingly can observe events that occurred millions of years ago is completely imaginary²⁶. *Secondly*, listening to Darwinian claims about macroevolution, for Yahya, is similar to listening to a fable about a frog that can change into an elf²⁷. *Thirdly*, the evidence used by evolutionists themselves in some ways turns against the theory and confirms the weakness of evolution.

The second figure is T.O. Shanavas, who was born in India in 1970 and immigrated to the United States. I consider Shanavas to be the few thinkers who does not begin by merely attempting to relate Islam to evolution. As a result he does not find contradictions between Islam and evolution. Shanavas first clarifies the term *khalafa*; “*to bring into existence a thing according to a certain measure, or proportion, so as to make it to the equal of another thing that is not pre-existing*”²⁸. This definition is based not on modern Arabic, but on the classical Arabic language in accordance with the language used at the time of the Prophet. Linguistically the word *khalafa* implies the diversity of living creatures that are not created simultaneously, but through several stages. Shanavas concludes that Adam and Eve are the “perfect people” chiseled from the first hominid creatures.

The division among Muslims, again, reflects the strong ambiguity in responding to evolution. This ambiguity suggests that the divisions regarding evolution among Muslims are not a matter of argumentation alone but involves multiple interpretations of the Koran and various levels of understanding concerning evolutionary theory.

Indonesian Muslim Biologists on the Evolution Theory: Between Scientism and Religiosity

These explanations and arguments concerning evolutionary theory do not necessarily have a direct influence on Muslim biologists as evolutionary theory is so central in the biological sciences²⁹. So, looking closely at the experiences of individual muslim-biologists³⁰ in Indonesia is a ne-

cessity due to at least two reasons. The first is to come up with how Islam and evolution are reconciled by the individual. Meanwhile, the second is to emphasize the competition between the two “structures” [Islam and evolution] and which one is dominant depends on the understanding of rationality, religious commitment and how they are connected.

1. Evolution and Islam

In response to the evolution, the Indonesian Muslim biologists (IMB) 1, IMB 2 and IMB 3 have different understandings concerning rationality. They operate from different epistemological principles (standards of rationality), and have different ideas concerning the scope of rationality. These differences shape their different standpoints. IMB 1 and IMB 2, for example, believe that rationalities operate in separate domains. The rationality of science is supported by empirical evidence, while the rationality of religion is based on a faith that requires total acceptance – as a manifestation of “submission” to God. Concerning this point, IMB 1 and IMB 2 have similar standpoints. In many instances IMB 2 stressed that his belief in “God as creator” does not imply the refusal of the theory of evolution.

However, IMB 2 agrees that the theological axiom “God as the creator” is not (always) correctly used to answer scientific questions that are merely empirical. In this case he receives the authority of “the verses of nature” to more clearly explain such propositions. For him, “the verses of nature” parallel the Koran, or in other words, *kauniyyah* verses [verses of nature] have the same validity with *qauliyyah* verses [Koranic verses]. The clear-cut distinction between the two verses does not only imply the incompleteness of the architecture of the arguments, but also potentially opens up a space free from epistemological claims that tend to be oppressive. Actually, oppressive claims contradict the spirit of Islam that appreciates freedom of thought rather than blind submission to a certain authority.

However IMB 1 disagrees with the acceptance of what are called the “verses of nature”. Radical reduction of “the verses of nature” to modern science leaves a mysterious hole in both epistemological and axiological issues because modern science is not always compatible with Islam. Islam

receives intuition as one of possible sources of knowledge, while modern science affirms only the claims of empirical validity. Islam emphasizes the singularity of “*telos*”, while modern science does not. Based on such questions, IMB 3 is reluctant to enter the debate over evolution and Islam. It is more convenient for him if the two are not mutually “connected”. He only uses empirical rationality when he stands as a biologist before a biology class and adheres to religious doctrine when he is acting as a Muslim. There is an effort not to interconnect religious and scientific rationality. But an ambiguity at the same time increasingly arises because Islam does not break down the story of creation. If he holds religious doctrine, then his religion should provide him a space for the freedom of thinking, shouldn't it? IMB 3 seems to admit that the doctrine of creation is illogical without explicitly rejecting it.

Interestingly, in spite of having the same religious commitment, when religious commitment is connected with the rationality of science (evolution), the Muslim biologists were still not necessarily in agreement. Instead, each has a different strategy to respond to evolution. Their different understandings of rationality, the implementation of rationality, the boundaries of rationality and its interaction with the religious commitment create this ambiguity. This leads to further questions concerning differences in the construction of rationality? Does the rationality of science contrast with religious commitment? If not, how to understand the relationship? This clarification is useful to see the deeper social dimension of their understandings.

The relation between rationality and religious commitment is also determined by the four standard measurements of rationality above. IMB 1 sees no difference between rationality and religious commitment. This is what Stenmark called the “monist model” because it must be guided by religious commitment. Commitment is the top religious orientation of life. If there are things that are contrary to religious commitment, they should be rejected. Moreover, related to the creation of reality, “... *This problem can not be answered by pure science and considers God does not exist*”, said IMB 1. This is the problem of creation, and creation is too sacred to be examined only by science. As a biologist, this view is in contrast to most mainstream biologists who are less involved in the religious debate about evolution.

Based on the arguments above, IMB 1 believes that the evolution model will never completely displace religion because it does not assume the omnipotence of God. Yet he is not worried about being charged with blending religion and science, because of his contention that creation cannot be explained by mere science. Creation will always include theological presuppositions about the existence and role of God, while science does not leave space for these kinds of presuppositions. As a Muslim biologist, IMB 1 places his religious commitment over everything, which ultimately means that when faced with contradictions with the rationality of science, the religious commitment must always win out. Only in this way can a Muslim become an *ulil albab*: a Muslim who always remembers Allah and thinks that everything is only because of Him. During standing or sitting, a Muslim always so remembers God in order that he does not lose the *uluhiyah* (Godliness) dimension to his life.

Even though being in agreement on the importance of religious commitment, IMB 3 believes that religious commitment has an additional value for scientific rationality. They are not always opposed but often experience “contact”. A respect for rationality may be an extension of religious commitment. Or roughly speaking, rationality, can to some extent, help religious commitment become stronger and more understandable. IMB 2 believes in a critical thinking that enables him to navigate clearly between religion and science. The “one moment” creation story, he said, was fully based on the story of creation in the Old Testament, which was then adapted to the story of creation in Islam. He also supports the idea of *steady creation*, and reasons that since the Koran did not explicitly explain creation, it follows, therefore, that people with the ability to reason should seek to discover the creation process and evolution is a theory that pursues this end.

Exploration of science cannot be considered as a neglect of religious commitment. Religious commitment will be more “reasonable” when science is involved in providing explanations of the doctrine. Moreover, IMB 2 believes that the *kauniyyah* verses parallel the *qauliyyah* verses, and the *kauniyyah* verses can be clearly understood in the light of scientific findings.

Meanwhile, IMB 3 prefers the “secure” way by not confronting rationality and religious commitment (the independence model). He places

rationality and religious commitment in two separate domains as he maintains that evolution theory is independent from the account of creation in Islamic narratives. They are for that reason difficult to unite.

These approaches can be summarized in the following table:

	Rationality Religious	Commitment	Relationship
IMB 1	The rationality of science separates from religion. Science is supported by empirical evidence and religion by faith.	Influenced by external factors (environment).	Religious commitment is more important than rationality.
IMB 2	The Rationality of science separates from religion. Science is supported by empirical evidence and religion by faith.	Influenced by external factors (environment).	The exploration of rationality of science can be a manifestation of religious commitment.
IMB 3	The rationality of science separates from religion. Science is supported by empirical evidence and religion by faith.	Influenced by external factors (environment).	No connection between the two

Conclusion

From its earliest interactions, Muslim scholars have shown an ambiguous response to evolution, primarily because the Koran itself does not deal explicitly with the creation story. This is reflected to this day in the ambiguous responses found among Indonesian Muslim biologists and their varying understandings of rationality and its relation to the religious commitment.

Endnotes

¹Iqbal, Iqbal, Sir Muhammad, 1951, *The Reconstruction of Religious Thought in Islam*, Lahore, Pakistan, Shaikh Muhammad Ashraf Bookseller and Publisher, p.83.

²It is provided by modern science.

³It is provided by religion and belief system.

⁴The competition is mainly because of two apposing ideas of the story of creation. On the one hand, the Koran states that human beings are God's most honorable creatures, but on the other hand, human beings are unfriendly full of weakness. These two ideas often "expand" each other. Stenmark introduces what he calls religious and scientific expansionism. C.f. Stenmark, 2004, *How to Relate Science and Religion a Multidimensional Model*, Amerika Serikat, Wm. B. Eerdmans Publishing Co. p.5-6 and 183-208.

⁵Foerst, Anne, 2002, "The Stories We Tell: The *Mythos-Logos* Dialectic as New Method for the Dialogue between Religion and Science", dalam Terence J. Kelly S.J. & Hillary D. Regan [ed.], *God, Life, Intelligence and the Universe*, Australia, Australian Theological Forum (ATF) Press, p.23, 26.

⁶Primanda, Andya, 2007, *Evolusi dan Islam*, a paper presented at "The Evolution Controversy: Who is Fighting with Whom about What?" workshop held by Yogyakarta Society for Science and Religion (MYIA) in cooperation with *Center for Religious and Cross-cultural Studies (CRCS)* Gadjah Mada University, 16 June 2007, not published, p.7.

⁷Adam is the first messenger that also claimed as the first human.

⁸Little, John T., 1987, "Al-Insan al-Kamil: The Perfect Man", in *The Muslim World A Quarterly Journal of Islamic Study and of Christian Interpretation among Muslims*, Vol. 77, No. 1, (January, 1987), p.47.

⁹Hirtenstein, Stephen, 1994, "Lunar View, Air-glow Blue Ibn 'Arabi Conversations with the Prophet Adam", appearing in *Journal of the Muhyiddin Ibn 'Arabi Society*, Vol. 16, 1994, p.53.

¹⁰Chittick, William C., 1994, *Imaginal Worlds Ibn al-'Arabi and the Problem of Religious Diversity*, Albany, Amerika Serikat, State University of New York Press, p.35-36.

¹¹Kartanegara, Mulyadhi, 2003, *Menyibak Tirai Kejahilan: Pengantar Epistemologi Islam*, Bandung, Mizan Media Utama, p.14.

¹²Remtulla, Aly, 1993, "The Reaction of Muslim Arab Scholars to the Darwinian Revolution", appearing in *Muslim Education Quarterly*, Vol. 10, No. 4, (1993), p.59.

¹³Mohamed, Aishah, 2001, "A Critique of Jamal al-Din al-Afghani's Reformist Ideas and Its Importance in the Development of Islamic Thought in the Twentieth Century", in *The Islamic Quarterly*, Vol. 45, London, Islamic Cultural Centre, p.54.

¹⁴Mohamed, Aishah, 2001, *Ibid*, p.55.

¹⁵Nasr, Seyyed Hossein, 1986, *Man and Nature the Spiritual Crisis of Modern Man*, Malaysia Edition, London, Inggris, George Allen & Unwin Ltd, p.74.

¹⁶Nasr, Seyyed Hossein, 1996, "Evolusi: Sebuah Kemustahilan Metafisika", in Osman Bakar [ed.], *Evolusi Ruhani Kritik Perenialis atas Teori Darwin*, translated by Eva Y. Nukman, Bandung, Mizan, p.62.

¹⁷Bakar, Osman, 1996, "Sifat dan Tingkatan Kritik Teori Evolusi", in Osman Bakar [ed.], *Evolusi Ruhani Kritik Perenialis atas Teori Darwin*, Bandung, Indonesia, Mizan, p.163.

¹⁸Fazlur Rahman, 1994, *Major Themes of the Qur'an*, Minneapolis, USA, Bibliotheca Islamica, p.17.

¹⁹Syahin, Abdus-Shobur, no year, *Abi Adam Qishah al-Khaliqah baina al-Usthurah wa al-Haqiqah*, Muniroh, Maktabah Syabbab, p.58-59.

²⁰Syahin, p.74.

²¹Syahin, p.70.

²²Syahin, p.116.

²³Syahin, p.79-83.

²⁴Syahin, p.97-98, 109.

²⁵Koening, Danielle, 2006, "Anti-Evolutionism Among Muslim Students", in *ISIM Review*, Vol. 18/Auntumn, p.1286.

²⁶Yahya, Harun, 2006, *The Historical Lie of Stone Age*, Istanbul Turkey, Global Publishing. (pdf version appearing at www.harunyahya.com), p.17.

²⁷Yahya, 1999, *The Error of Evolution of Species*, Istanbul, Turkey, Global Publishing. (pdf version appearing at www.harunyahya.com), p.157.

²⁸Shanavas, T.O., 2005, *Creation and/or Evolution an Islamic Perspective*, Philadelphia, USA, Xlibris, p.150.

²⁹Dobzhansky, Theodosius, no year, *Dalam Biologi, Tidak Ada Yang Dapat Dipahami Kecuali dengan Penerangan Evolusi*, translated from "Nothing in Biology Makes Sense Except in the Light of Evolution" appearing at *The American Biology Teacher*, March 1973 (35: 125-129), translated by: Andya Primanda, not published, p.4.

³⁰These three are: IMB 1, IMB 2, IMB 3.