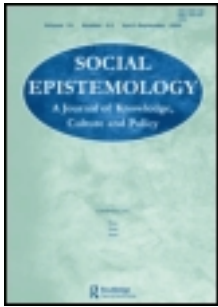


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# The Contemporary Debate on the Harmony between Islam and Science: Emergence and Challenges of a New Generation

Stefano Bigliardi

*That Islam and science enjoy a harmonious relationship is frequently endorsed in learned as well in popular debates. Amongst the first scholars who have studied such ideas and their diffusion from an external perspective are Leif Stenberg and contributors to the special issue of Social Epistemology, both published in 1996. Drawing on Stenberg's study, I argue that we can identify the emergence of a "new generation" of authors considering conceptual shifts at work in some contemporary authors. In the first section, I recall the ideas commonly evoked in order to substantiate the claim that Islam and science are in harmony, and their entanglement. In the second section, I reconstruct Stenberg's analysis. In the third section, I trace a picture of the contemporary landscape; I linger on the two most systematic criticisms so far levelled at the advocates of the harmony between Islam and science, those of Hoodbhoy and Edis. In the fourth section, I narrow the expression "new generation" by referring to four specific authors, here taken as paradigmatic. Their works share substantial traits. I regard each one of these traits as a necessary but not sufficient condition to belong to the "new generation", and their possession as demarcating the "new generation" both from older contributions and those that presently just extend them. In the fifth section, I touch upon challenges for and of the new generation: three sets of intertwined difficulties faced by the authors belonging to the "new generation" itself and by the scholars interested in studying the debate from a neutral point of view.*

*Keywords:* Islam; Science; Stenberg

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### 1. One Harmony, Many Reasons

“There exists a harmony between Islam and science”. This statement is very likely to be approved upon first hearing by many Muslims, laypersons and scholars alike. At the same time, it is likely to arouse surprise and provoke further questioning amongst many non-Muslims. The debate on the harmony of Islam and science<sup>1</sup> is amongst the most important and lively ones in the Muslim world, and probably amongst the issues less satisfyingly investigated by European/Western scholarship.

The philosophers of language with a pragmatist bias use the expression “space of reasons” to indicate the dynamic web of communicative practices in which humans put forth, give, ask for, reasons. The debate on the harmony between Islam and science provides us with a good example of a very dynamic and complicated space of reasons. Indeed, the expression “harmony between Islam and science” does not denote a single concept, or line of argumentation, but is rather an utterance for which the most different, and differently intertwined reasons can be given. A short inspection of the results of a Internet search for the terms “Islam” and “science” can provide us with a first glimpse at this space of reasons. Some texts point at the absence of contradictions between the Qur’an and science. Some emphasize the presence of scientific notions in the Qur’an and the Sunnah (or even the anticipation of scientific discoveries). Some underline the numerous invitations contained in the sacred scriptures to the pursuit of knowledge and to the observation of the natural world. Others identify in history a so-called Golden Age of Islam (eight–thirteenth century CE), during which natural sciences flourished throughout the Muslim world, and endorse that this historical phenomenon could be taken as proof of the harmony itself. The reasons evoked to support the statement “There exists a harmony between Islam and science” are interconnected. They can be defended with different emphasis and addressed from different points of view. At first sight, this complicated entanglement of ideas can leave one in bewilderment. The space of reasons in which the ideas related to the harmony of Islam and science are communicated and negotiated is produced, filled and curbed, by a wide range of authors; only some of them, by virtue of their prolificness or originality, can be considered as the main sources. Although their positions converge on certain points, they do not constitute in any way a homogeneous school of thought. Let us take a closer look at their production and influence.

### 2. Stenberg’s Analysis: Four Main Positions

Stenberg’s monograph *The Islamization of science* (Stenberg 1996a) counts amongst the first scholarly reconstructions of such authorship. Three main reasons substantiate the choice of Stenberg’s analysis as a starting point for the present one. First of all, it is a work of remarkable extension, drawing on an astonishing amount of previously un-investigated material. Secondly, Stenberg’s examination aims at being concerned with the discourse on Islam and science without being part of it;<sup>2</sup> this methodological stance results in the capacity to envisage commonalities amongst authors who often emphasize their mutual contrasts. Finally,

Stenberg adopts an interdisciplinary perspective; he focuses not only on the reconstruction and comparison of theoretical argumentations, but also on the social factors that motivate the debates examined and influence their reception by the general public. Stenberg charts and compares four main positions.<sup>3</sup>

The British-Pakistani Z. Sardar (b. 1951) is the first author investigated by Stenberg, together with the positions of the *ijimalis*, the intellectual circle he inspired, which included other authors such as Anees, Davies and Manzoor. Notwithstanding individual differences, conceptual shifts over time and internal debates, which render Sardar's and/or *ijimalis*' ideas rather difficult to be recapitulated in a short space, it can be stated that they see science as socially constructed (what allows its infusion with principles coming from a determinate culture) and also as instrumental, i.e. as an activity first and foremost oriented to the solution of practical problems. Their polemical scope is twofold. On the one hand, the *ijimalis* are concerned with the state of Muslim societies, which they see as heavily set back as to the acquisition, practice and development of science. On the other hand, Western science is regarded as destructive and in a state of crisis. Therefore, according to Sardar and the *ijimalis*, it is necessary to render science relevant again to Muslim culture, whilst simultaneously reforming it according to Islamic principles and concepts.<sup>4</sup>

The second position is that of the Persian-American scholar S.H. Nasr (b. 1933). Provided with extensive knowledge of philosophy, Muslim and Christian alike, Nasr draws on authors usually neglected by academic syllabi, such as Guénon, Schuon, Corbin, Coomaraswamy and Burckhardt. Nasr's theories incorporate some views of Sufi mysticism as well. World religions, according to Nasr, are all ultimately based on a primordial doctrine of unity; each and every revelation that substantiated them functioned as a "vertical" link between human affairs and divinity. Each world religion encapsulates, in other words, a teaching, referred to as *scientia sacra*, which reminds human beings of the transcendental unity of phenomena and of their original divine source. In Nasr's opinion Islam, because of its placement in history and specific emphasis on *tawhid*, the unicity and unity of God, enjoys a privileged status as a primordial religion. Nasr stresses the role of intellect, which he conceptualizes as the faculty that allows a direct knowledge of the divine. According to Nasr Muslim societies during the so-called Golden Age have been the last ones to practice a natural investigation aimed at illuminating the interrelatedness of all things and their derivation from divinity. The main distinctive trait (and shortcoming) of science as it has been practiced at first in post-Renaissance Europe, and later worldwide, is, according to Nasr, the missing appreciation of intellect in favour of purely quantitative reasoning. Science has thus been desacralized and knowledge has been highly compartmentalized; the implementation of the fruits of such science results according to Nasr, amongst other things, in the ecological catastrophes of present times. The solution, according to Nasr's vision, can only be a return to the traditional *scientia sacra*.<sup>5</sup>

The third position is the one that of the Arab-American scholar Al-Faruqi (1921–1986). A scholar of religion and philosophy with a strong pragmatic

penchant, Al-Faruqi's main concern was a political one; he aimed at rejuvenating and unifying the Muslim community, or *Ummah*, which he saw as in a state of crisis. The reason of what Al-Faruqi perceived and presented as a state of fragmentation and disease was, according to him, the fact that genuine principles and ideals encapsulated in the Qur'an, first and foremost those guiding scientific practice and the implementation of its fruits, had been either forgotten or polluted by Western ones. According to Al-Faruqi, it was therefore necessary to re-discover those very principles and to recast science from its very foundations in accordance with them. Al-Faruqi's attempts did not remain confined to his production of articles and books; he took active part in the organization of conferences worldwide and in 1981 he founded the International Institute of Islamic Thought (IIIT) next to Washington DC, "dedicated to the revival and reform of Islamic thought and its methodology in order to enable the *Ummah* to deal effectively with present challenges, and contribute to the progress of human civilization in ways that will give it a meaning and a direction derived from divine guidance."<sup>6</sup>

The last position investigated by Stenberg is that of the French M. Bucaille (1920–1998). A surgeon with a passion for Egyptology, Bucaille learnt Arabic in his fifties, following the recommendation of some of his Muslim patients to read the Qur'an in the original version. Thanks to his contacts with the Egyptian president Sadat, Bucaille was allowed to carry out medical examinations of the thirteenth century BC mummies conserved in the Egyptian museum in Cairo and identified one of them as the Pharaoh who died pursuing the Hebrews according to the Biblical and Qur'anic narratives. As a result of both his medical observations and his reading of several passages of the Qur'an, in which he envisaged references to facts currently ascertained by natural science, Bucaille was convinced of the text's divinity. He supposedly converted to Islam and went on relentlessly defending his theses concerning the scientific soundness of the revealed text, which encompassed a Qur'anic-compatible view of biological evolution, in a few books (Bucaille 1976, 1984, 1990, 1994) and in numerous conferences worldwide.<sup>7</sup>

The expression "Islamization of science" applies first and foremost to Al-Faruqi's thought. Stenberg, nevertheless, significantly extends its usage to all of the four positions investigated. Apparently, indeed, Sardar, Nasr, Al-Faruqi and Bucaille hold distinct views; sometimes they have levelled criticism at each other, despite occasional collaboration.<sup>8</sup> Sardar's position, in particular, stands out as the one which can be more aptly grasped through the critique he makes of the remaining three: he deems the principles advocated by Nasr too vague; he rejects the "projection of science into the Qur'an" by Bucaille, and, finally, he dismisses Al-Faruqi's approach as bound to preserve the dichotomy of secular and Islamic science.<sup>9</sup> Nevertheless, according to Stenberg's reconstruction the commonalities between the four are deeper than the declared distinctions. All four positions are expressed by unconventional Muslim intellectuals, who do not belong to the *madrasah*-educated clergy and studied in Western institutions. They all envisage a malaise in contemporary Western science and point at Qur'anic concepts as the cure for that very malaise. They all agree that both science and Islam can be integrated (or rather, *must* be integrated) and that

such integration found, in some figures of the past, a perfect balance. In so doing, they strive both to establish themselves as Muslim authorities and to redefine the role of religion in a world deeply changed by science perceived in the form of technology.<sup>10</sup> Besides philological considerations on the authorship and the usage of the expression, then, it seems conceptually sound to define the science at which they aim as “Islamized”.<sup>11</sup>

### 3. The Contemporary Landscape

The first elements to be taken into account whilst reconstructing the contemporary landscape are the persistence and the long-lasting effects of the four positions investigated by Stenberg. Sardar and Nasr are still very active and respected intellectuals, with an impressive output of publications, in which they defend views largely consistent with the theories they upheld until the mid-1990s.<sup>12</sup> Al-Faruqi was murdered in 1986 under still unclear circumstances; however, IIIT is still in activity, notwithstanding some major image problems in the aftermath of 9/11,<sup>13</sup> whilst the idea of Islamizing science and university curricula is still in good health. Following Al-Faruqi’s practical vocation, if not the literal dictation of one of the numerous manifestos stemmed from his earliest followers, a number of specifically Islamic academies, institutes, schools and universities have been established, which seek to integrate in their curricula Islam and technical subjects such as chemistry and physics.<sup>14</sup> Sardar’s, Nasr’s and Al-Faruqi’s views can thus be said to hold still a central place in the space of reasons negotiated over the relationship of Islam and science, with a number of followers and offshoots that even blend their respective ideas.<sup>15</sup>

Also, the “scientific exegesis” of the Qur’an à la Bucaille has mushroomed. The scholars of Islamic studies can currently see with more clearness that Bucaille’s ideas, at the time of their publication, were far from being original, but rather drew upon a pre-existing tradition of “scientific interpretation” of the Qur’an, most probably originating in the last two decades of the nineteenth century and aimed at finding in the sacred text either scientific concepts or the anticipation of specific discoveries.<sup>16</sup> With Bucaille’s work, especially impressive since its author was perceived with the aura of a Western convert and the traditional prestige of a physician who boasted illustrious patients, peaked a conceptual shift initiated much earlier. The miraculousness of the Qur’an was not to be envisaged anymore in its linguistic beauty and inimitability, but rather in its “scientific content”. Given the relative easiness of such a reading, favoured by the ample (and extendible) semantic spectrum of many Qur’anic terms, this trend turned into a popular genre, generally practiced by authors with a scientific or technical education.

The scientific exegesis of the Qur’an, which already in the mid-1990 produced a flood of books and pamphlets, generally printed on low-quality paper, has found a congenial channel in the new media. Its contemporary advocates, whom we might call “new Bucailleists”,<sup>17</sup> nowadays reach a vast TV and Internet audience.<sup>18</sup> This is the case of the Egyptian geologist, El-Naggar (b. 1933).<sup>19</sup> El-Naggar

engages in the scientific exegesis of the passages of the Qur'an and Sunnah,<sup>20</sup> and advocates a theory of science according to which a scientist facing the choice between two equally scientific, but competing theories (e.g. eternal universe vs. big bang) must opt for the more Qur'anic compatible one.<sup>21</sup> We shall also recall that this trend had also resulted in initiatives such as the foundation of the *Commission on Scientific Signs in the Qur'an and Sunnah*, based in Saudi Arabia and founded in 1984,<sup>22</sup> or the *Committee for Scientific Notions in the Qur'an* (currently chaired by El-Naggar<sup>23</sup>) a branch of the Egyptian Supreme Council of Islamic Affairs, which support numerous publications and conferences.

A case of Bucailleism *sui generis* is currently represented by the work of the Turkish author, Yahya, pen name of Oktar (b. 1956), especially active in the defence of creationism.<sup>24</sup> More than the name of an individual, "Harun Yahya" is the name of a team of writers,<sup>25</sup> whose astonishing output and distribution relies both on financial backing of controversial origin and on translation and diffusion activities carried out on a voluntarily basis by sympathizers reached through the Internet all around the world. The core theme in Yahya's works is anti-Darwinism, but they extensively incorporate the known discourse on the "scientific notions" in the Qur'an and on the elements of nature as miracles of creation, most drawing on the work of the religious reformer Nursi (1878–1960).<sup>26</sup>

The reconstruction of the contemporary landscape must be integrated by mentioning two polemical voices. Two physicists, the Pakistani Hoodbhoy (b. 1950) and the US-Turk Edis (b. 1967), have attempted, through two monographs, a systematic refutation of the harmony between Islam and science, especially as it is advocated by the "Islamizators" in all its aspects.<sup>27</sup> One of them (Hoodbhoy 1991) appeared prior to Stenberg's monograph, but it wasn't extensively treated in it, whilst the later is only a few years old (Edis 2007a). The relevance of their criticisms will fully appear whilst reconstructing the "new generation".

It must be recalled, first of all, that Hoodbhoy and Edis seem to diverge regarding their conception of Islam/religion and its relationship with science. Hoodbhoy separates the dominions of science and religion, the latter being "a reasoned and reasonable abdication of reason with regard to those questions which lie outside the reach of science".<sup>28</sup> Hence, in Hoodbhoy's view, religion and atheism are equally compatible with science, and no direct attack is made on the former.<sup>29</sup> Edis, instead, can rather be counted amongst the advocates of the so-called "new atheism"; he embraces indeed philosophical naturalism, according to which an explanation of the world can be better attained by recurring to the results of modern physics and biology.<sup>30</sup> Hence, in Edis's overall work, Islam and the Islamization of science are only one specific critical target in the more general framework of a criticism of religion.<sup>31</sup>

Some leading principles and argumentative strategies employed by Hoodbhoy and Edis against the Islamization of science display a strong similarity. Both Hoodbhoy and Edis are concerned with the status of science in Muslim societies, whose analysis constantly remains in the background of their work.<sup>32</sup> Neither of them wants to present himself as a wholehearted advocate of the Western approach to

science.<sup>33</sup> Both authors ridicule Bucailleism: according to the two authors, Bucailleism brings to a massive production of ludicrous texts, relying on (and encouraging) scientific incompetence, both as to specific data and theories, and to the methods of science;<sup>34</sup> science, in Edis' words, is reduced in Bucailleism to a "stamp collection".<sup>35</sup> Both Hoodbhoy and Edis see the attempts at recasting and/or reforming science according to Islamic principles as unfeasible because the principles themselves are too vague or non-scientific.<sup>36</sup> Both Edis and Hoodbhoy, finally, question the solidity of the historical argument in favour of the harmony of Islam and science. The status of science, the social conditions and the role of intellectuals during the Golden Age are scrutinized, as well as the individual ideas and vicissitudes of some specific thinkers. Both authors conclude that Islam cannot be said to have been a decisive factor in the intellectual development of these particular thinkers (who are nevertheless recognized as outstanding), and stress that the comparison between the past and the present positions of Islam with respect to the sciences is not tenable, both because those very thinkers held views not in tune with the contemporary ones, and because the science of those days cannot be said to bear an overall resemblance to present day one. In this sense, the whole historical side of the discourse harmony of Islam and science is deconstructed and rejected as the ideological exploitation of a fictional past.<sup>37</sup>

Let's return to the advocates of the harmony of Islam and science. Already at this point of the recognition, it is clear that periodization and labelling of contemporary currents proves an uneasy task. A chronological grouping is not particularly enlightening; for example, El-Naggar is as old as Nasr; the latter and Sardar are still in activity; a distinction on the basis of the channels used as a means of communication is not substantial and rather weak; both Sardar and the "new Bucailleists", for example, extensively communicate through the new media; El-Naggar started his activities long before becoming a TV celebrity. The stances of the single authors towards each other, external and mutual definitions, affiliations and derivations are still being discussed within the works of the authors themselves.

The picture, though, is not yet complete. The last 15 years have indeed witnessed the distinct emergence of some authors characterized by strong mutual resemblances and distinguished by some unparalleled features. It is notably the case of a number of natural scientists who complement their background in the natural sciences with a thorough knowledge of Islam and Muslim societies. This group includes at least the Iranian physicist Golshani (b. 1939), the Iraqi physicist Altaie (b. 1952), the French astrophysicist Guiderdoni (b. 1958) and the Algerian astrophysicist Guessoum (b. 1960).<sup>38</sup> For these authors, and for other advocates of the harmony between Islam and science who share the distinctive features that I will list, I propose the name "new generation".

#### 4. A "New Generation"? Reasons for a Distinction

One can find in the works of the "new generation" some general and complementary ideas at the very core of the thesis of the harmony between Islam and science.



The Qur'an contains references to natural phenomena<sup>39</sup> and emphasizes the importance of knowledge (*ilm*), a term whose semantic spectrum can be legitimately interpreted to cover (*also*) natural science;<sup>40</sup> the investigation of the universe can be regarded as an investigation of God's work, therefore a Muslim identity can be perfectly reconciled with a lifestyle based on the enjoyment of high technology and, more importantly, with an updated scientific culture, as great Muslim intellectuals testify.<sup>41</sup> So far, such ideas can be identified also in the works of other advocates of the harmony between Islam and science; we might define, metaphorically, these ideas as the "background radiation" that pervades the space of reasons regarding the harmony of Islam and science. This shows that the stance of the "new generation" is deeply rooted in earlier and contemporary discussions. However, *three substantial traits, each one of which I regard as necessary though not sufficient conditions to belong to the "new generation"*, seem to mark the distinction of the "new generation" itself from other voices in the debate.

To actively develop the discourse on Islam and science is per se an interdisciplinary enterprise and accordingly, it requires a competence encompassing several disciplinary fields. The advocates of the harmony between Islam and science tend to display a multifaceted background, which includes the humanities and natural sciences alike.<sup>42</sup> Interdisciplinary competence and intercultural education also characterize the authors that I take as representative and paradigmatic of the "new generation". In taking up scientific issues, what characterizes the group I am here examining is *the outstanding competence in the field of modern physics*. Such competence allows these authors to touch upon many finely interrelated issues that currently prove to be crucial to the more general debate on religion and science in international symposia: amongst them we can recall quantum mechanics,<sup>43</sup> indeterminism and causality,<sup>44</sup> the origin and structure of the universe,<sup>45</sup> divine design,<sup>46</sup> anthropic principle,<sup>47</sup> evolution.<sup>48</sup> *What distinguishes the "new generation" is the discussion over such issues in light of their competence as practicing scientists*. Nasr, Al-Faruqi and Sardar undoubtedly defend the idea of an "Islamic science" from a rich perspective encompassing natural sciences. Nevertheless, their discourses do not go deep into the details of the debates nowadays considered essential for the understanding of the relationship between religion and science, and sometimes even reject some topics as non-scientific.<sup>49</sup>

A strong philosophical commitment played a relevant part in earlier discourses on the Islamization of science. Nasr, Sardar and Al-Faruqi often reference to classical figures like Popper, Kuhn, Lakatos, Feyerabend; they often recall Islamic philosophy as well,<sup>50</sup> and the whole debate itself on "Islamization" can be described as broadly philosophical. This commitment takes a similar form, upon first inspection, in the new generation. It consists, first of all, of the constant appeal to philosophical traditions, Muslim and non-Muslim alike. Golshani strongly advocates the relevance of philosophy to physics and discusses it within a very detailed frame of references, ranging from classical European philosophers of science, to researchers from the natural sciences with a strong philosophical bias;<sup>51</sup> Altaie emphasizes the modernity of the arguments developed by the *mutakallimūn*

(eight–thirteenth century CE), vis-à-vis on-going cosmological debates;<sup>52</sup> Guiderdoni makes reference to the topicality, in view of modern cosmology, of Ibn Arabi (1165–1240) and Al-Ghazali (1058–1111);<sup>53</sup> Guessoum adopts Ibn Rushd (1126–1198) as the “guiding spirit” for his work, with his doctrine of the harmony between philosophy and religion.<sup>54</sup>

Besides the resort to the theories of philosophical authorities of the past, one can see a deeper methodological difference. The Islamization of science entailed the identification and development of specifically Islamic epistemological foundations, from which a *new* or *renewed* Islamic (or Islamic-compatible) science would stem. *What is central for the “new generation” is rather the possibility of reconciling Islam and science, where science is a field of knowledge with its own methods and internal dynamics that need to be fully grasped and not further reshaped.* Even in the case of Guiderdoni, who undoubtedly has a mystical vein, there is no advocacy of integrating the scientific method with the faculties that allow a direct intuition of divinity. All this is well distinguished from the plan of infusing science with Islam (or *vice versa*).<sup>55</sup> Engaging in philosophy of science for the “new generation” means constantly refreshing the awareness of the nature and aim of scientific knowledge. Thus the “new generation” seems to be vaccinated against some of the shortcomings of the discourse on Islam and science Hoodbhoy and Edis complain about, and that de facto the former and the latter have some adversaries in common, Bucailleism<sup>56</sup> and science reformers alike.

The third feature which distinguishes the “new generation”, is what I shall call *the culturally pluralistic approach* of the authors examined *towards other religious and cultural traditions*. “Pluralistic” is to be seen in opposition both to an *exclusive* and to a *syncretic* approach. In other words, the contributions coming from other cultures and religions are not seen as inadequate or incomplete, but as equally worth participating in the dialogue of religion and science (which thus becomes a *multilogue*). This can be regarded as a consequence of the philosophical outlook I have just touched upon, and can once more be contrasted with the fundamental premises of the preceding debate. Let’s examine this point in detail. On the one hand, the discourse on the scientific miraculousness of the Qur’an developed by the Bucailleists went hand in hand with the assumption of the *superiority* of Islam’s relationship with science. It followed that other religions could not claim such a privileged status, and that science would prove a threat to them.<sup>57</sup> This approach could be named *exclusive*. On the other hand, Sardar, Nasr and Al-Faruqi rather adopted a *syncretic* approach. Numerous elements from other cultures and traditions were incorporated and assigned new positions within a basically Islamic conceptual framework.<sup>58</sup> A syncretic approach entails that any contribution coming from a specific culture is not adequate, unless it is fused with others in a superior synthesis. Both the exclusive and the syncretic approach are more consistently<sup>59</sup> avoided by the “new generation”. It is true that they could be said to fulfil the same psychological need for an updated Muslim identity that animated earlier attempts. Undoubtedly, they also draw on many traditions and discourses. Nevertheless, there is a substantial methodological difference, decisive for our present classification.

Islam is not given a privileged status, in the sense of being the exclusive repository of concepts from which everything can be recast or the only framework which allows a reconciliation of religion and science. It is perfectly accepted that such harmony can be independently attained also by believers of other creeds. What is proposed by these thinkers can therefore serve as the frame for a dialogue with other scholars, who share the concern for the same philosophical problems, but address them from the point of view of other religious creeds. The pluralistic approach leads indeed to inter-faith dialogue on philosophical problems, as the texts and practical initiatives of the authors of the “new generation” testify.<sup>60</sup>

## 5. Challenges

In the previous sections, I have delineated the emergence of a “new generation” by way of comparison with earlier theories and trends. My reader should at this point have gained an overview of the conceptual and methodological shifts at work that justify the choice itself of speaking of a “new generation”. However, my intention is not to depict it in purely irenic terms. It is now time to focus on some problems that characterize the intellectual enterprise of the authors described by such expression. I shall touch upon three overarching sets of difficulties. First, I shall expand on some theoretical challenges faced by the “new generation”; tackling them is particularly urgent in order to reach, beyond the declarations of intentions, a full-blown new philosophy of Islam and science. Second, I shall cope with the problem, shared by the authors of the “new generation” and their critics alike, of finding a common defining expression not solely based upon the contrast with the “old generation”. Third, I shall deal with some methodological problems faced by the scholars who wish to study the contemporary debate on Islam and science from an external point of view. The overall aim of this final section is to set up an agenda for further work, partially shared by the authors of the “new generation” and their critics alike. Let us begin from some unsolved theoretical knots. At first glance, the distinction of Golshani, Guiderdoni, Altaie and Guessoum from the authors studied by Stenberg appears rather clear, and so do the former’s mutual similarities. A reader who was to approach their writings in a comparative perspective would most probably sense the aforementioned conceptual shifts and the presence of a working plan in the background. However, a closer observation can lead to a sense of fragmentariness and incompleteness. The challenge, one can say, lies in the details. The features which I have identified as necessary and non-sufficient for the new generation are indeed far from having been fully developed.

In the case of Golshani the intention to distinguish his theory from older attempts at “Islamizing” science is quite clearly stated (cf. Golshani 2003, 153 and Golshani 2004, 51–52). Furthermore, Golshani’s general plea for a metaphysics of science (Golshani 1997) is rather articulated. However, the Iranian author does not extensively develop a clear, full-blown Qur’anic-based metaphysics, a system coordinating all the notions he singularly discusses. Moreover, his predilection for a meticulous subdivision of topics, together with his extensive quotations from other

thinkers, clutters and clouds the exposition. It is also not clear whether such metaphysical system should be seen, in the last resort, as the only viable one (what would push Golshani's theory back on the way of an Islamization of science) or rather in a metaphysically pluralistic perspective, according to which also other systems are acceptable. At some points thus Golshani's distance from some exponents of the older generation seems rather attenuated.

A sense of fragmentariness might equally take Guiderdoni's and Altaie's readers, since they have not yet collected their respective interventions on Islam and science in single monographs displaying a homogeneous and systematic conceptual framework. It is also clear, as I have previously pointed out, that de facto Guiderdoni keeps scientific knowledge and mysticism separated, yet it would be interesting to read how he specifically conceives of the relationship between the two. In Altaie's case a clearer identification of the *mutakallimūn* as well as a more systematic survey of the specific notions whose topicality he wants to demonstrate is especially desirable. Nidhal Guessoum seems acutely aware of the character of "work in progress" of the whole debate. Also, his work presents a well delineated *pars destruens*: the "scientific interpretation" of the Qur'an and the Islamization of science alike are quite convincingly criticized. However, other problems, such as the interpretation of miracles,<sup>61</sup> the role of prayer and divine action are rather thematized<sup>62</sup> than worked out in greater detail in order to produce an equally convincing *pars construens*. Significantly, Guessoum has entitled the last chapter of his monograph "Islam and science ... tomorrow" (Guessoum 2011, 327).

All this leads us towards a complementary, practical problem faced by our authors, namely the necessity of effectively communicating their ideas to peer scholars and to a general public alike. The need for articulated, organic and clearly readable works is much more perceived if one bears in mind the influence of those authors and trends which we can define the main adversaries of the "new generation". On the one hand, we have the pervasive discourse on the "scientific interpretation" of the Qur'an; on the other hand, the vocal advocates of the incompatibility of science and religion, especially the vocal "new atheists", who often depict Islam in terms of an irrational, violent ideology, denying it any intellectual depth.<sup>63</sup> The perception that the harmony of science and religion can be defended from a specifically Muslim point of view without necessarily sliding into shallow apologetics or pseudoscience has not reached the general public. I have already pointed out the odd alliance against Bucailleism of the "new generation" with the exponents of a scientific point of view. As long as the exponents of the "new generation" do not convincingly and extensively work out the constructive part of their respective philosophies they are at risk of simply bringing grist to the mill of the advocates of the incompatibility of science and religion. It should be pointed out, though, that the exponents of the "new generation" display great potential for communication, since they demonstrate familiarity with the "new media": so far, at least Golshani, Guessoum and Altaie are indeed present in the Internet through their own webpages<sup>64</sup> and numerous clips on YouTube;<sup>65</sup> Guiderdoni lacks no experience either, since he is a renowned popularizer of Islam,

having been from 1993 to 1999 in charge of the weekly 30 min TV show *Connaitre l'islam* ("Knowing Islam") of the State channel France 2. Probably, a complete overshadowing of more rhetorical treatments of the relationship of Islam and science would be a quixotic goal: producing low-quality, pseudoscientific material through and inundate by it the Internet as well as the bookshops will always prove much easier than providing a large audience with sophisticated conceptual tools enabling it a deep appreciation of science in a Qur'anic outlook. However, once the constructive part of the debate is clearly worked out and a clear language is adopted, the "new generation" can most likely reckon with a more effective impact on the general public.

If collaboration amongst the members of the "new generation" would be welcome, an enhancement of interaction might be attained also through the identification of a common self-definition. We reach here a problem perhaps shared by the authors here examined and their critics. Until now I have extensively employed the expression "new generation". Any attentive reader will have most likely grown gradually dissatisfied with such denomination. It can be indeed observed that the expression "new generation" does not capture the specific characters of the contributions here analysed; furthermore it ambiguously relies on a highly context-dependent, ephemeral chronological criterion.

In search of a more convincing expression, let us emphasize once more, sticking to the declared intentions of our authors, that, in their respective formulations of the interaction between Islam and science, they do not entertain overall oppositional stances towards science as it is, whilst at the same time leaving the door open to analogous attempts at reconciling religion and science carried out in other cultural fields. Thus, one option might be to assume the term used by Edis, which I have hitherto employed myself as an umbrella term for the whole debate, sanitize it from any negative connotation by narrowing its meaning down, so to define the physicist-philosophers here considered as "Muslim harmonizers", in contrast to the "Islamizers of science". In the expression "Muslim harmonizers" the first term clearly refers to the religious-cultural milieu from which the authors so described stem, whereas the second term, redefined, would refer to the absence of marked oppositional stances towards the method of science and other religions.

This choice is not devoid of problems, though. First, the absence of any oppositional stance at all in the theories of the "new generation" is far from having been clarified (we await, e.g. more articulated interventions regarding evolution). Second, any other author engaged in the debate might claim that his or her theory points at a genuine harmony and claim back this label. Finally, from a purely Islamological perspective, concerned more with the cultural impact of the theories examined rather than with their philosophical soundness, it might appear that even the new authors are still "scientificators of Islam" since they are equally reconceptualizing Islam vis-à-vis modern science. The proposal is therefore left open to the reader and the authors here at stake alike. I have started by observing that one of the most relevant features of Stenberg's analysis is its interdisciplinary character. In conclusion, I would like to emphasize the importance of an interdisciplinary

approach for the study of the “new generation” as well of the further developments of the debate on Islam and science. First, an all-encompassing analysis of the ideas discussed requires competence in both the fields of philosophy of science and religion, and of Islamology; therefore, in order to produce further critical accounts we shall blend such disciplines. Furthermore, the study of Islam is equally required to broaden its methods, transcending the limits of a purely philological approach and investigating, for instance, how ideas concerning Islam are disseminated and circulate in the new media. We should namely learn the lesson of one of the topics here just touched upon, Islamic creationism, a meanwhile important trend that, as Riexinger has pointed out (Riexinger 2008), has taken Islamologists by surprise also because it was propagated on the Internet, a channel previously neglected. Finally, since one of the points of interest of most of the theories on Islam and science independently on their philosophical soundness, is that they stem from and tackle a social concern, the analysis of this debate should not be limited to ideas, but be integrated by a sociological approach aimed at reconstructing their audience and impact.

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### Notes

- [1] Where not otherwise specified, the term “science(s)” is used as a short form for “natural science(s)”. The notion of “science” can of course mean a great number of things, depending on the language, the historical period and the context. In the present paper, this question will not be pursued in any depth. Instead, the discussion will be based on the various thinkers’ own use of the word in English, as it appears in their writings. I am

well aware that this is somewhat problematic, particularly when texts have been translated. Analogous considerations hold for the adjective “scientific”.

- [2] Cf. Stenberg (1996a, 15).
- [3] The centrality of Stenberg’s analysis should not induce us to overlook the fact that other authors, between the nineteenth and the twentieth century, had been developing influential theories on the interrelatedness of Islam and science as a result of the impact of the Muslim society with science embodied in the technological superiority of colonial powers. Among such authors we should mention at least the Indian Khan (1817–1898), al-Din Al-Afghani (1838–1897), and the Egyptians M. ‘Abduh (1849–1905) and Rida (1865–1935), on which focuses, for example Furlow (1996). Another figure not treated by Stenberg (1996a) but who can be regarded as an influential predecessor is the Turkish scholar Nursî (1878–1960). Further, Stenberg (1996a) does not focus neither on the activities of the Malaysian scholar bin Ali Al-Attas (b. 1931), nor on the Turkish author Gülen (b. 1941), contemporary of the authors his monograph investigated. The limitations of this investigation are justified in Stenberg (1996a, 20–1). For an alternative and more inclusive classification of the same figures investigated by Stenberg (1996a) see Furlow (1996). For other classifications provided by authors who are also involved in the debate, see Ghamari-Tabrizi (1996); Inayatullah (1996); Kirmani (2000); Golshani (2004, 45–79) (which curiously lists Stenberg (1996a) among the participants in the debate, cf. 47); Bagir (2005); Iqbal (2002, 2007); Nasr and Iqbal (2007, 1–26); Bakar (2008(2), xviii–xliv); Deuraseh, Termizi and Husni (2011); Guessoum (2011, 101–72).
- [4] See Stenberg (1996a, 41–96). For an overview of the principles listed by the *ijimalis* see Furlow (1996, 268).
- [5] Cf. Stenberg (1996a, 97–151). For a synthetic comparative presentation of Sardar and Nasr see also Stenberg (1996b).
- [6] See Stenberg (1996a, 153–219). The passage is quoted from the IIIT official website: <http://www.iiit.org/AboutUs/AboutIIIT/tabid/66/Default.aspx>
- [7] Cf. Stenberg (1996a, 221–67).
- [8] E.g. Nasr has contributed to Sardar (1989). Al-Faruqi makes an appearance in *The book of signs*, a film (Dom, Malaysia, 1986) dedicated to Bucaille’s theses.
- [9] See Stenberg (1996a, 269–96). A lively account of the discussion between Sardar and Al-Faruqi can be found in Guessoum (2011, 122–5).
- [10] For a reconstruction of the way in which the new media have contributed to substantial changes in the Muslim intellectual landscape, and a description of the “new intellectuals” of Islam consistent with Stenberg’s analysis see Eickelman and Piscatori 2004, 4–45.
- [11] Cf. Stenberg (1996a, 269–337). From the point of view of Islamology, it might be equally sound to speak of their theories as aimed at a “scientification of Islam”.
- [12] Nasr’s accomplishments are celebrated and scrutinized in Hahn, Auxier, and Stone (2001). For an updated overview of Sardar’s ideas see Sardar and Masood (2006). For Sardar’s bibliography, see <http://ziauddinsardar.com/bibliography/>.
- [13] See Markon (2006).
- [14] Three examples of universities that had declared new objectives concerning the relationship between Islam and science in a broad sense are the Umm Al-Qura university in Saudi Arabia (established in 1981), the International Islamic University in Islamabad, Pakistan (established in 1980) and the International Islamic University in Malaysia (established in 1983).
- [15] A stern defender of Nasr’s philosophy, with a practical bias for the implementation of such ideas in university curricula (that rather reminds one of Al-Faruqi) is the Malaysian scholar Bakar (b. 1946). See Bakar (2008(2), in part 257–66). Other observers and participants to the debate sympathetic with Nasr (See Nasr and Iqbal (2007)) are the Pakistani Iqbal

- (b. 1954), founder of the *Center for Islam and science* in Alberta, Canada, in 2000 (see <http://www.cis-ca.org/>), and the US-Pakistani scholar Haq (see Haq 2002).
- [16] See Wielandt (2002) and Dallal (2011, 169–76).
- [17] The term “Bucailleist” has a negative connotation. Nevertheless, we can assume it here in a neutral sense.
- [18] Bucaille’s work, in its turn, enjoys excellent health, the French edition of his most famous book (Bucaille (1976)) having reached the 15th edition. A documentary movie on Bucaille has recently been produced: *Maurice and the Pharaoh. The Bucaille report* (2010; written, produced and directed by Abdul-Aziz. Kuwait/Egypt/US: Manara Communications Inc.).
- [19] See Nkrumah (2005) for a sympathetic, journalistic portrait of El-Naggar. To catch a glimpse at El-Naggar’s ideas, methodology and style see his official website <http://www.elnaggarzr.com/en/index.php>.
- [20] See El-Naggar (2008, 2010). Analogous to El-Naggar is the figure of the Indian preacher Naik (b. 1965), who holds a bachelor in medicine and surgery (see Samuel and Rozario 2010).
- [21] Cf. El-Naggar (2008, 55). It is to be noted that El-Naggar endorses a terminological shift, with his usage of “scientific precision” instead of “miracles”.
- [22] Cf. <http://www.ejaz.org/ejaz/index.php?lang=en>.
- [23] Cf. <http://www.elnaggarzr.com/en/aboutus.php>.
- [24] The best starting point for knowing Yahya is his constantly updated website: <http://www.harunyahya.com/>. For a short reconstruction of Yahya’s ideas and activities in a more general frame see Numbers (2006(2), 421–27). See also Schneider (2009), as well as Samuel and Rozario (2010) and Dallal (2011, 168). For Oktar’s legal troubles see Edis (2008) and Arda (2009) (a thorough journalistic inquiry).
- [25] “I think of Harun Yahya as a brand, and Oktar as the public face of the brand” (Edis 2008, 4).
- [26] It is enough to take a look at the occurrence of the term “miracle” associated to natural phenomena in the list of Yahya’s books (available at: [http://www.harunyahya.com/en.m\\_book\\_index.php](http://www.harunyahya.com/en.m_book_index.php)). Janson (2003) rightly emphasizes the Bucailleistic character of Yahya’s ideas (cf. 103–104).
- [27] Huff (1996) provides another overall confutation.
- [28] Hoodbhoy (1991, 138).
- [29] Hoodbhoy is inspired by the views of the Pakistani Salam (1926–1996). Salam, Nobel laureate in physics in 1979, was both a devout Muslim and an advocate of the universality and neutrality of science (which, in turn, ensures its harmony with religious beliefs, but of course of a deeply different kind than the one advocated by the “Islamizers”). Salam has indeed written a supportive foreword to Hoodbhoy (1991, ix–xii). Stenberg mentions Salam as opposed to the authors he investigates without treating his ideas at length, because of the scanty number of his publications (cf. Stenberg (1996a, 21)).
- [30] This emerges clearly from Edis (2002, 2006). However this analogy does not hold if we take as a defining trait of the “new atheists” (e.g. Dawkins and Dennett) their aggressive style, which Edis does not share. Edis advocates indeed a fair criticism of Muslim debates (cf. Edis (2007b)).
- [31] It is true that in at least one passage of *An illusion of harmony* Edis hints at the possibility that “liberal versions of Islam” would “allow scientific investigation wide latitude but also firmly block scientific intrusions on religious territory” (207), but this is rather a functional move. On the other hand, Hoodbhoy views might also be easily interpreted as a disguised atheistic position.
- [32] Cf. Edis (2007a, 19–20); Hoodbhoy (1991, 28–49).
- [33] Hoodbhoy warns against the risk of mixing up modernization with Westernization (cf. Hoodbhoy (1991, 136) and emphasizes that the material success of a religion is not a sign



for or against its truth (cf. Hoodbhoy 1991, 138). Edis concludes *An illusion of harmony* with the observation that “(...) in the scientifically advanced West we have our own illusions of harmony, our own myths that help us strike a balance” (251).

- [34] Cf. Edis (2007a, 81–114); Hoodbhoy (1991, 140–54).
- [35] Edis (2007a, 101).
- [36] Cf. Hoodbhoy (1991, 65–85); Edis (2007a, 165–88, 205–09).
- [37] Cf. Hoodbhoy (1991, 93–117, 85–108); Edis (2007a, 33–52).
- [38] Golshani has published, so far, a short monograph (Golshani 1997), two collections of essays (Golshani 2003, 2004), and he edited a volume collecting the answers given by different scholars on the relationship of religion and science (62 in the third edition: Golshani 2004(3)). Altaie has entrusted his views to different papers (Altaie 2005, 2006a, 2006b, 2008a, 2008b, 2008c). Guiderdoni’s production on Islam, science and mysticism is mainly in French; he has produced, so far, one essay in English (Guiderdoni 2005). In 2008 he has delivered the *James Gregory lecture on science and religion* at the university of St. Andrews (UK) and the *Paul Tillich lecture* at the university of Harvard (US), the latter available at: [http://www.jamesgregory.org/downloads/Bruno\\_Guiderdoni/lecture/Bruno\\_Guiderdoni\\_lecture.pdf](http://www.jamesgregory.org/downloads/Bruno_Guiderdoni/lecture/Bruno_Guiderdoni_lecture.pdf) Guessoum has published a paper mainly focussed on the “scientific interpretation of the Qur’an” (2008) and published an overarching monograph on Islam and modern science (Guessoum 2011). Golshani, Altaie, Guiderdoni and Guessoum are very active in setting up and participating in international conferences on religion and science. Their ideas are expressed also in interviews published in collective volumes (cf. Golshani 2005; Guessoum 2010; Guiderdoni 2001).
- [39] Cf. Altaie (2008a, 3–5, 2008b, 14–16); Golshani (2003, 75, 2005, 80–82); Guessoum (2011, 63–5); Guiderdoni (2001, 75).
- [40] Cf. Golshani (2003, 11, 2005, 77–78); Guiderdoni (2005, 131); Guessoum (2011, 63–5).
- [41] Cf. Golshani 2001 *passim*; Guiderdoni 2001 *passim*; Guessoum (2011, xiii–xxvi).
- [42] Sardar, who is often defined as a “polymath”, has studied physics and Information science; Nasr received his B.S. in physics at MIT, then studied geology and geophysics at Harvard, where he also obtained his Msc and PhD in the history of science and learning. Al-Faruqi received a MSc and PhD in philosophy and conducted post-doctoral research in Islamic studies. An interdisciplinary background also characterizes Bucaille, a surgeon who was versed in Arabic and Egyptology. El-Naggar combines his scientific education (he received a PhD in geology from the University of Wales) with his discussions of the Qur’anic and the Sunnah. Even the texts by Harun Yahya, besides being characterized by an approach, which might be deemed more lyrical, and rhetoric than scientific in an academic sense, display a certain eclecticism (Oktar has studied philosophy and interior design. Nevertheless, the books published under the name “Harun Yahya” are to be considered a collective enterprise and it would therefore be misleading to refer to Oktar’s own academic background alone).
- [43] Cf. Golshani (2003, 311–17).
- [44] Cf. Altaie (2006a); Golshani (2003, 292–310).
- [45] Cf. Altaie (2008a, 2008b, 2008c); Golshani (2002); Guessoum (2011, 179–218; Guiderdoni 2005).
- [46] Cf. Guessoum (2011, 219–70).
- [47] Cf. Guessoum (2011, 243–70).
- [48] Cf. Golshani (2004, 60–4, 143–44); Guessoum (2011, 219–242, 271–324).
- [49] Nasr rejects the debate over evolution as ideological, and regards the changes in scientific debates as a sign of science’s weakness (cf. Nasr and Iqbal 2007, 85 and Chp. 6). Sardar seems rather elusive on Darwinism in Sardar (2011), where he interestingly rejects the debate on Creationism as “Western” and leaves the door somehow open to Darwinian evolution by claiming that the Qur’an presents a “dynamic picture” of creation. Vis-à-vis

- contemporary articulated discussions and defences of Darwinian concepts like those of Dennett and Dawkins such a move proves interesting, but weak (cf. Sardar (2011, 359–62).
- [50] Here we should recall as an example of this retrieval at least Nasr (1964).
- [51] To this task is especially dedicated Golshani (1997).
- [52] The term *mutakallimūn* applies to many thinkers and theologians mainly divided into two schools (*Mu'tazilites* and *Ash'arites*) who appeared during the eighth century CE and lasted until the tenth. Altaie tends to refer to them collectively. Cf. Altaie (2005, 2008a). Altaie draws also upon Al-Ghazali and Ibn Rushd (cf. Altaie 2006b).
- [53] Guiderdoni (2005) *passim*.
- [54] Cf. Guessoum (2011, xiii–xxxvi). It is to be noted that Guessoum's reference is based on his original reading of Ibn Rushd.
- [55] Cf. Stenberg (1996a, 302–03).
- [56] Bucailleism is apparently kept at arm's length. Golshani warns against the treatment of the Qur'an as an encyclopaedia of scientific facts (cf. Golshani 2003, 147–51); Altaie encourages a "mature and cautious treatment of the scientific terms that appear in the Qur'an" (cf. Altaie 2008c); against Bucailleism (seen however as an intellectual enterprise carried out *bona fide*) is the entire Guessoum (2008); cf. also Guessoum (2011, 141–42, 361–63); Guiderdoni (2001, 80–1). The "new generation" seems also not hostile to the idea that specific verses or passages of the Qur'an might be obscure.
- [57] For instance, Bucaille 1976 is not only dedicated to the scientific concepts of the Qur'an, but also to emphasizing the contradictions and errors that can be found in the Old and New Testament if read in the light of modern science. El-Naggar still subscribes to this approach and endorses the idea of a falsification of the Jewish scriptures. In such vein he could publish a work such as El-Naggar 2005.
- [58] Following the analysis of Stenberg (1996a, cf. in particular 299–337) one can also claim that *de facto* this approach resulted in a multicultural, typically post-modern product. To a Muslim readership these discourses offered new perspectives on Islam, a new way of living one's Muslim identity. To a non-Muslim readership they appeared as holistic approaches to a large array of the problems of modernity, which could be compared with movements such as the "New Age".
- [59] It is true, for instance, that Al-Faruqi was an advocate and promoter of interfaith dialogue (cf. Al-Faruqi 1986(2)), and the same can be said of Nasr. Nevertheless, I see a latent tension between this laudable approach and the tenets of the Islamization. Nasr, for instance, states that one has to "(...) study other religions sympathetically without losing the sense of absoluteness in one's religion" (Nasr 1993, 61). Al-Faruqi emphasizes the peaceful relationship between monotheistic religions which would be attained by the *pax Islamica* (cf. Al-Faruqi 1995(3), 9), but then he underlines that the Hebrew-Jewish tradition means particularism (cf. Al-Faruqi 1995(3), 79), whereas there is no particularism in Islam (cf. Al-Faruqi 1995(3), 96), and particularism has to be fought (*sic* - cf. Al-Faruqi 1995(3), 106). The *Ummah*, in his words, is a "monolithic system", and divergence from it is "heresy"; "to allow religious-moral diversity within Islam is to renounce Al-tawhid" (Al-Faruqi 1995(3), 117). He also claims that the "breakdown of ideal after World War II" was due to "the machinations and manipulations of Zionism and neo-colonialist imperialism" (Al-Faruqi 1995(3), 108). Sardar (2011), instead, seems in tune with the approach of the "new generation" (cf. Chps. 32 and 33), but his claims are rather invitations than fully developed arguments.
- [60] Most notably, Golshani has promoted dialogue on common issues between scholars of different religions; this is at best condensed in and represented by his successive publications of *Can science dispense with religion?* Altaie has been especially engaged in inter-faith philosophical debates, as Altaie (20008b, 2008c) testify. Last but not least, Guessoum clearly states: "This [the investigation of the harmony between scientific cosmology and religious

- concepts] can apply to any and all religious traditions; here I only take the Islamic tradition because it is my own and I feel the need to draw attention to its rich areas as well as to some of the misguided ventures performed under its title” (Guessoum 2011, 216).
- [61] Guessoum however tends to reject the concept of supernatural. He rather reconceptualizes the miraculousness of the Qur’an as the text’s inexhaustible openness to new interpretations (cf. Guessoum 2011, 50–3).
- [62] Cf. Guessoum (2011, 327–45).
- [63] Misrepresentation of Islam and “new atheism” go sometimes hand in hand. S. Harris’ *The End of Faith* (2004) begins for instance with the fictional description of a Muslim terrorist.
- [64] <http://physics.sharif.edu/~golshani/> (Golshani); <http://www.cosmokalam.net/> (Altaie); <http://nidhalguessoum.org/> (Guessoum)
- [65] See for example Altaie’s channel: [http://www.youtube.com/user/Baseltai?ob=0&feature=results\\_main](http://www.youtube.com/user/Baseltai?ob=0&feature=results_main) and Guessoum’s numerous interventions on various topics in different channels.

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