

Masudul Alam Choudhury

**ISLAMIC CRITIQUE AND ALTERNATIVE TO
FINANCIAL ENGINEERING ISSUES**

Comment by:

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Introduction

Choudhury's criticism of the mainstream risk-return financial engineering is part of a long-standing effort to utilise topological spaces in an attempt to represent Islamic knowledge as a whole. The common thesis that consistently characterises Choudhury's writings is a belief that analysis of topological spaces is the ideal approach to manifest the philosophy of Truth as against Falsehood in the religion of Islam – or *the epistemology of Qur'an* as he calls it. 'Truthful' Islamic knowledge thereby generates through a grand mathematical design of interactive, integrative and evolutionary topological spaces. Choudhury seems to have picked this mathematical methodology from *humanomics*, a Western school of human philosophy, which he then developed and proposed as a viable Islamic approach to socio-economic knowledge.

Topology is a highly specialised branch of abstract mathematics that depends on the Theory of Sets as developed by George Cantor in the latter part of the nineteenth century. Recently, it has invited a wide range of medical, engineering and computing applications. It is quite appreciable therefore to use advanced mathematical tools in representing and analysing Islamic knowledge even though there are limits to what we may sensibly expect to get from such applications. What really matters in using mathematics is how we formulate models and what quality of information we feed into them; just like the rule of using computers *garbage in garbage out*. Starting from a definition of 'topological space' as given below, we wish to see what kind of Islamic knowledge Choudhury's epistemology seeks to convey; what concept of *Tawhid* it embeds; and eventually what implications it bears to the analysis of risk-return in financial engineering.

Definition: Let \mathbf{X} be any set, and let \mathbf{T} be a family of subsets of \mathbf{X} . Then the statement ‘ \mathbf{T} is a topology on \mathbf{X} ’ is only true if : (1) both the empty set and \mathbf{X} are elements in \mathbf{T} , (2) any union of elements of \mathbf{T} is also an element of \mathbf{T} , and (3) any intersection of finitely many elements of \mathbf{T} is an element of \mathbf{T} . Moreover, if \mathbf{T} is a topology on \mathbf{X} , then \mathbf{X} together with \mathbf{T} is called a *topological space*. The nature of functional relations or mappings from one topological space to another and how these can be solved lie at the centre of all academic interests and applications of topology.

Critical Questions on Choudhury’s Methodology

Choudhury’s usual mathematical design departs from a universal *supercardinal* topology \mathbf{T} taken to encompass the *stock of complete knowledge*. Accordingly, the ‘totality of truth’ and totality of ‘falsehood’ are represented by the sets $\{\mathbf{F}\}$ and its complement $\{\mathbf{F}'\}$ which denote, respectively, the complete class of all ‘True Statements’ and the class of all ‘False Statements’. The rest of the topological analysis is all about representing *Tawhid* in the sense of Unity of Knowledge, with an endless learning process. The latter represents a complex set of relations ranging from *Tawhid* down to lower order topological spaces through interactive, integrative, and evolutionary strings.

The above background is part of thick mathematical smoke that often shrouds Choudhury consistent endeavour to revolutionise existing sources of knowledge in Islam (*usul al-fiqh*). As the author remarks in the referenced paper “The Quran and the Sunnah, and not the Fiqh as the principal origin, comprise the true source of Islamic epistemology of everything’. Although the author does not define ‘Fiqh’, this term seems to refer to the received jurisprudence of the major prevalent schools. In a bid to develop alternative opinions in fiqh, the *Zahirite* and *Ahl al-Hadith* also call for exclusive dependence on Qur’an and the Sunnah. Yet unlike the *Zahirite* and *Ahl al-Hadith*, Choudhury’s epistemology is unequipped to propose an alternative fiqh to guide Muslims in their everyday life.

The crucial problem in Choudhury *Qura'nic epistemology* is a therefore fiqh vacuum that the author deliberately maintains to hold his epistemology robust against all *fiqh*-based criticisms. Falling back on generalised impressions about the Qur'an and Sunnah, Choudhury seeks to re-invent the wheel of Islamic knowledge through simple formulations and solutions of topological mappings! Worse still, this epistemology embodies a concept of *Tawhid* that manifestly breaks away from existing Islamic knowledge. *Fiqh* vacuum and *Tawhid* misrepresentation are the basic flaws in Choudhury’s methodology as explained in the following points:

- (1) First, in the way of representing the Qur'an's epistemology, the author seems to have adopted the 'fiqh vacuum' strategy to relieve himself from the formidable task of feeding topological spaces with detailed facts from the Qur'an and Sunnah. It is impossible, however, to assume away such detail so long as the logical power of mathematical deduction depends totally on what primary facts you feed into them and how you interpret the findings. Mathematics in the final analysis is nothing more than a sharp logical discipline to help draw conclusions from external facts pertaining to different fields of inquiry. The application of topology in medicine, for example, is impossible without detailed knowledge of medical facts. Similarly, the application of topology in Islamic knowledge is impossible without detailed facts about the Qur'an and Sunnah. Regrettably, however, Choudhury's factual background on Qur'an and Sunnah is reducible to rudimentary and highly subjective impressions about ethics and socio-economic justice in Islam. Medical researchers never claimed an all-pervasive medical epistemology from profound fact-based applications of mathematical topology in medicine whereas, ironically enough, Choudhury presents his impression-based applications as *the* foundation of Qur'an's epistemology!
- (2) Second, representation of Quran through topological spaces is at best a wishful thought. Take for example rules of inheritance alone, which form a very small subset of Quran's knowledge. How could Choudhury's epistemology analyse rules of inheritance through topological mappings? How could the assumed 'interactive, integrative and evolutionary topological spaces' generate a learning process to answer some of the daunting questions; e.g. about *kalah*?. One may argue that epistemology is not meant to answer practical questions. Then, what is it? How does it qualify as source of complete knowledge? Is the mathematical assumption of 'completeness' of topological spaces suffices to claim 'complete knowledge'? As it stands, the author's claim of developing a 'complete' epistemology from topological spaces for the Quran and Sunnah – through a complete *fiqh* vacuum – is truly stunning! It is the duty of Choudhury to defend his work through reference to the existing body of Islamic knowledge, not the duty of the existing knowledge to justify its validity through Choudhury's topological arguments. Solving intricate topological mappings is a highly specialised area that appeals only to a few specialists in this field of abstract mathematics, but knowledge of topology cannot be deemed a logical requisite for assessing the quality of 'truth' as against 'falsehood' of Quran's knowledge.
- (3) Third, it is unclear why topology rather than any alternative branch of mathematics should be Choudhury's sole discipline to present Quran's epistemology. Nowhere does Choudhury answer this important question

particularly as topology fails to represent visible and substantive differences between different real life entities due to the problem of 'topological equivalence'. One commonly cited joke is that a topologist cannot distinguish between his cup of coffee and the doughnut he eats since the two objects are topologically equivalent! Choudhury should have clearly justified his choice of mathematical method and acknowledged the problem of 'topological equivalence' to alert the reader of any serious limitations in the application topology to Islamic knowledge. It is indeed the author's ethical duty to present a balanced opinion about the pros and cons his methodology even if it throws doubt on the validity of his conclusions. After all, little trust can be placed on mathematical topology to distinguish between a *surah* of Qur'an and a Shakespearean poem, let alone the distinction between 'truth' and 'falsehood' in the understanding of the Qur'an and Sunnah which demands careful scrutiny of original Arabic texts. Admittedly, Choudhury never claimed to have taken part in such painstaking scrutiny of truth as against falsehood by reference to the original scriptures.

- (4) Fourth, Choudhury's epistemology presents Tawhid, the Oneness of God, as *Oneness of the Divine Law* - perhaps due to the above problem of 'topological equivalence'! It is true that Oneness of God implies One Law of Creation for the whole universe and One Source of socio-economic law (or laws) to humankind. Nonetheless, the Oneness of Source does not necessarily imply Oneness of Shariah as past nations received different messages with different rules of Shariah that suited their different circumstances. Even within this strange definition of Tawhid, it remains to define the meaning of 'Divine Law'. What are the concrete factual contents of this Divine Law? How does Islamic knowledge branch off from this Divine Law down to all sub-spaces through the learning process? How does the assumed 'interactive, integrative and evolutionary topological spaces' generate a learning process to answer specific questions about Quran and Sunnah? Why should the usual religious rituals like *tasbih* have unfamiliar meanings in this learning process? In short, what does Choudhury want Muslims to do?
- (5) Fifth, the only mathematical proof of *Quran epistemology* is that it is 'true' by definition notwithstanding excessive use of complex mathematical notation to formulate the definition! This is sheer tautology. Take for example 'completeness' of the universal topological space \mathbf{T} which does not distinguish between initial premises and final conclusions. Because all truths from early history until the Day of Judgement are assumed to pre-exist in \mathbf{T} , nothing new about the truths or falsities of life can be added to the supercardinal space \mathbf{T} . As it stands, no logical proof in the sense of 'if X then Y' is needed to establish truth or falsity except for a process of internal searching carried out through a circular learning process to locate classes of

truth that already exist within the universe of complete knowledge. This is perhaps the reason why Choudhury has recently advocated “A Theory of Everything”! At any rate, the intricate circular interactive/integrative/evolutionary method of reasoning that governs the overall analysis is alien to the way Islamic knowledge has been developed by Muslim scholars from the Quran and Sunnah¹. Worse still, the ultimate decision whether anything belongs to the class of ‘Truth’ or the class of ‘Falsehood’ is Choudhury’s sole discretion! In other words, *the epistemology of the Quran* is what Choudhury himself believes to be true through internal learning processes that already include the known truth. For example, in the paper under review, the interactive / integrative/ evolutionary process of figure(2) qualifies for the epistemology of the Quran but that of figure (1) does not - for no reason!. Another example is the disqualification of ‘utility theory’ from the *epistemology of the Quran* for no reason other than the author’s timid appeal to al-Ghazali. More examples are given in the third section of this review.

Use of mainstream terminology

The author’s criticism of risk-return analysis invokes the statement: “... inter-temporal utility optimisation resulting in investor’s indifference curve in risk and return and thereby the intertemporal resource line, yielding the valuation of risk and return in terms of relative prices of risk (interest rate) to return (real rate of return).”, which muddles up the implications of inter-temporal and risk-return models. The inter-temporal utility optimising model applies to the context of consumption behaviour where the consumer seeks to optimise his utility of consumption over a life-cycle horizon. Here the indifference curves relate to a simplified two-period model reflecting time preference rather than attitude towards risk. On the other hand, risk-return indifference curves refer to an investor’s behaviour in a single period of time – the present period – where the standard portfolio theory formulates the problem by reference to an investment asset or portfolio of assets.

Moreover, the marginal rate of substitution relates to the slope of an indifference curve, thereby expressing the investor’s attitude towards risk in the case of risk-return indifference curves, or time-preference rate in the case of intertemporal indifference curves. Yet, the author’s discussion of the marginal rate of substitution involves baffling phrases like “ two-sector consequences, namely risk and return” and “the principal-agent game” to define the nature of “age-specific expected utility function”. It is unclear in what sense is the principal-agent problem relevant to the author’s analysis. What issues is the

(1) Chapra’s formulation and analysis of ibn Khaldun’s circular argument about the decline of civilisation is perhaps an exceptional case which generated a method comparable to the one under consideration .

author wishing to convey about the principal-agent problem in relation to risk-return analysis?

To sum up, the referenced paper is diametrically off-stream whether in the way of presenting the Islamic perspective or the theory of risk-return analysis. It is unclear what message Choudhury wishes to make through replacement of *fiqh* by an intriguing concept of Qur'an epistemology. It is again unclear what alternative analytical method he is proposing in place of the standard risk-return method. Simple logic, clarity of language and avoidance of unnecessary jargon are particularly demanding when someone raises challenging issues to shake up public trust in the mainstream knowledge. The essence of the Qur'an is to address people in understandable language. "Such are the verses of the clear [self-explanatory] Book" (26: 2); "We have made this Qur'an easy as a reminder" (54:18). This teaching is regrettably lacking in the present paper.