

Systems as Philosophy and Methodology for Analysis

Overview

Before taking a ‘systems approach’ to the analysis of the fundamentals (*uṣūl*) of Islamic law and its philosophy, the following questions shall be answered:

- What are systems? Are they ‘real’ or ‘mental’ creations?
- What is ‘systems philosophy’ and how does it relate to Islamic and modern philosophies?
- What is a ‘systems approach’?
- How does a systems-based analysis compare to other types of analysis?

This chapter explains what a system is in terms of ‘systems philosophy.’ A systems philosophical approach views the creation and functionality of nature and all its components in terms of a large holistic system that is composed of an infinite number of interacting, opened, hierarchical, and purposeful sub-systems. Then, the advantages of a systems approach to analysis, versus traditional methods of analysis, broadly labelled as ‘decompositional,’ are outlined. I shall, finally, define a systems approach to analysis based on my definition of what defines a systems, or ‘system features.’ The language of this chapter is rather technical, since ‘systems’ is a multi-disciplinary field that had emerged from the realm of science, rather than the realm of humanities.

2.1. SYSTEMS AND SYSTEMS PHILOSOPHY

Teleology, Causality, and Irrationality

Major advancements in science often lead the way to major shifts in philosophical paradigms. Ancient, and especially Greek, alchemy, geometry, and astronomy were breakthroughs that taught humans how much they do not know. Thus, teleological theories of a universe with a 'purpose' were born and eventually dominated philosophy of religion. Philosophy of religion, until medieval times, 're-interpreted' teleological theories to be theories for the purposes of God. Islamic philosophy also re-interpreted ancient teleological theories in an Islamic sense. In addition, Islamic philosophers/scientists developed the ancient concepts of causality, not only from the scientific side but from the theological side as well, as Chapter Six will explain. Islamic philosophy's developments of the Greek philosophy paved the way for the renaissance and modernist philosophy, and was largely responsible for the 17th century's paradigm shift from teleology to causality.

When alchemy, geometry, and astronomy eventually gave birth to the seventeenth century modern science, philosophers started to call for dealing with natural phenomena through its own principles (*juxta propria principia*), with an increasingly popular pre-assumption that nature is nothing but a big mechanical machine that has no final purposes outside the realm of 'science.' The one grand 'purpose' that remained was for humans to 'control' the universe for their own benefit. Thus, modernist philosophy replaced the metaphysical idea of anthropocentrism (centrality of man), which was the basis of ancient teleological thinking, by another anthropocentrism idea, in which humans occupy the center due to their own activities and not to Providence. Teleology was seen as an idea that would hinder the progress of science. Hence, 'causality' started to play the role of the 'logical' and dominant method of thinking, and everything in nature, it was believed, was explainable through piecemeal cause-and-effect explanations. This meant that producing an effect is 'nothing but' the natural result of applying its cause. Modernist piecemeal analysts labelled any theory of purposeful or goal-seeking natural behavior or

phenomenon as ‘metaphysical,’ mysterious, and outside the circle of logic and science.

‘Islamic modernism,’ which was by and large a reaction to European modernism, also endorsed the ideas of the centrality and supremacy of science. Yet, the Islamic mind was ready for the idea of causality more than any other mind, thanks to the pre-renaissance Islamic contributions to philosophy. Thus, Islamic modernism worked within the framework of modern science and the concept of causality in order to re-interpret or re-word the Islamic philosophy of religion. Thus, Islamic articles of faith were ‘re-interpreted’ in order to fit the conclusions of (pre-twentieth century) science, and causality was the logic of modernist *kalām* (philosophy of religion). Mohammad Abdu’s *Risālah al-Tawhīd* is the clearest example of all the above changes in Islamic methodology (Chapter Five elaborates on Islamic modernism).

In the west, the second half of the twentieth century witnessed post-modernism’s complete rejection of all modernist ‘meta-narrations.’ As Chapter Five explains, all streams of postmodernism agreed on the ‘deconstruction of centricism.’ Thus, according to postmodernists, the center should remain void of anything, whether it is science, man, the west, or even God. ‘Rationality’ itself, according to postmodernists, became an undesirable form of centricism and marginalization. ‘Irrationality’ became a desirable and ‘moral’ alternative.

‘Islamic postmodernism,’ in turn, utilised deconstructionist concepts in order to criticise central and basic Islamic articles of faith in a radical way. The ‘centricity’ of the Qur’an and the Prophet in Islam and the Islamic law was made subject to a ‘free play of the opposites,’ to borrow an expression from Derrida. Chapter Six will also elaborate on the different streams of ‘Islamic’ postmodernism and as well how they influenced some twentieth century Islamic Studies.

Towards an ‘Islamic’ Systems Philosophy

What concerns us in this chapter is systems philosophy as a rational and non-eurocentric ‘post-postmodern’ philosophy, and how Islamic philosophy and theory of Islamic law could make use of the progress in this new philosophy. Systems theory and philosophy emerged in the second half of the twentieth century as an anti-thesis of both modernist

and postmodernist philosophies. Systems theorists and philosophers reject the modernist 'reductionist' view that all human experience could be analysed into indivisible causes and effects. On the other hand, systems philosophy also rejects postmodernist irrationality and deconstruction, which are 'meta-narrations' in their own right. Thus, according to systems philosophy, the universe is neither a huge deterministic machine nor a totally unknown being, complexity can be explained neither via a series of 'nothing-but' cause-and-effect operations nor via claims of 'non-logocentric irrationality,' and the problems of the world could be solved neither via more technological advances nor via some sort of nihilism. Hence, thanks to systems philosophy, the concept of 'purposefulness,' with all of its teleological shadows, was back to philosophical and scientific discourses.

'Islamic systems philosophy' is an idea that this book is trying to propose and promote. The proposed new Islamic philosophy could benefit from systems philosophy's critique of both modernism and postmodernism, in order to critique the Islamic versions of modernism and postmodernism.

As Chapter Six explains, a number of systems philosophical theories rejected the concept of God altogether, just because medieval and modernist theologians had proposed some cause-and-effect arguments for God. It is fair to say that arguments could be 'historicised,' if you wish, without necessarily historicising what was argued for. Hence, an Islamic systems philosophy could build on the conclusions of systems philosophy for the sake of 'updating' Islamic theological arguments. In my view, an updated proof of God's perfection of His creation should now rely on a systems approach rather than previous causality-based arguments. A systems approach is a holistic approach, in which an entity is dealt with as a whole system that consists of a number of sub-systems. There is a number of system features that govern the analysis of a system into its sub-system components, and also define how these sub-systems interact with each other and the outside environment.

The following arguments for the existence and magnificence of God, which I prefer to call proofs, are proposed briefly here, and are certainly opened to further investigation and exploration in light of Islamic scripts and universal concepts.

1. The proof of complexity: The ‘inherent complexity’ in the design of the universe cannot be explained without a Synthesiser.
2. The proof of purposeful behavior: The directed and purposeful physiochemical behavior in nature, which all of its systems and sub-systems illustrate, is a proof of a Designer of this system.
3. The proof of regulation: Living creatures’ mechanisms of regulation despite the infinite number of ‘disturbances,’ is another proof for inherent design and intelligence in the universe.
4. The proof of order: The high-level design in the order of natural processes and the many steps in each of these processes is another proof.
5. The proof of organismic analogy: The incredible similarities between tiny organisms, animals, plants, human bodies, societies, and large-scale civilizations, is another systematic proof for God’s creation. This concept is already known in the Islamic literature as *al-sunan al-ilāhiyyah* (the divine natural laws).

The above systems approach to the Islamic ‘*aqīdah*’ (creed), however briefly mentioned here, is a basis for the systems approach to the Islamic law and its philosophy, which is proposed later in this book.

Are Systems ‘Real’ or Mental Creations?

Since the concept of systems is going to be of ultimate importance for us, the following question should be asked: What is a system; is the world created in terms of ‘systems’ or is a system a matter of constructed imagination? Another way to put this ontological question is to ask about the relationship between the ‘physical’ and the ‘mental’ in our human experience. The two typical answers to this question reflect typical realist and nominal tendencies, where physical ‘reality’ is objective and external to individual consciousness, or, otherwise, subjective and a product of individual mental consciousness, respectively.¹ Therefore, a typical ‘identity’ answer implies that our experience with systems represents the ‘truth’ about the world, and a typical ‘duality’ answer entails that systems are only in our minds and are completely unrelated to the physical world.²

Systems theory presents a middle road between the above two views by proposing ‘correlation’ as the nature of the relation between systems and the world, i.e., our mental cognition of the outside world in terms of systems ‘correlates’ with what is there.³ Therefore, according to this theory, a system does not necessarily identify with existing things in the real world but is rather a ‘way of organising our thoughts about the real world.’⁴ Accordingly, a system would be ‘anything unitary enough to deserve a name.’⁵ This is not a ‘fictionalist view of reality,’ as some people describe it,⁶ because any view of what we call ‘reality’ in terms of any system is a matter of ‘cognition,’ systems theory proposes.⁷ After all, that is how we are able to change our theories on science over the centuries, without necessarily representing actual changes in physical realities. And this is how some critique is proposed here based on what I will call ‘the cognitive nature of the Islamic law.’

2.2. A SYSTEMS APPROACH TO ANALYSIS

Traditions of ‘Decompositional’ Analysis

The word ‘analysis’ has its roots in the ancient Greek term ‘*analsis*,’ which means ‘loosening up’ or ‘dissolution.’⁸ Common understanding of the meaning of ‘analysis,’ as most dictionaries show, entails some ‘resolution into simpler elements’ or ‘breaking into more simple parts.’⁹ In philosophy, however, analysis is a central philosophical concept that has been defined in as many ways as the number of distinct schools of philosophy. Some attempts were made in order to classify methods of analysis into distinct categories. For example, the *Stanford Encyclopaedia of Philosophy* classified methods of analysis into decompositional, regressive, and interpretive modes.¹⁰ However, none of these modes was explicitly endorsed by any philosopher or school of philosophy, and each of these modes could rightly be explained in terms of any of the other two.¹¹ Therefore, I will mention classic methods of analysis below in terms of a tradition of ‘decomposition,’ which is part of the cause-and-effect tradition that was explained above.

The concept of ‘decomposition’ has its roots in ancient methods of Greek philosophy and geometry. In Pappus’s *Mathematical Collection*

which was composed based on centuries of development in Geometry after Euclid's *Elements*, analysis was described as follows: 'we suppose the thing sought as being and as being true, and then we pass through its concomitants¹² in order, as though they were true and existent by hypothesis, to something admitted; then, if that which is admitted be true, the thing sought is true, too, and the proof will be the reverse of analysis.'¹³ The central tool here is the decomposition of the required-to-prove into its basic constituents in a number of iterative steps. Then, the 'regressive' proof presented is based on these decomposition steps.

In Plato's version of analysis, 'classificatory trees' were developed. Plato created these trees by 'dividing a genus into its constituent species' through a series of dichotomies.¹⁴ Aristotle's *Analytics* was an in-kind development in the method of division or decomposition, in which he developed the concept of 'structure.'¹⁵ He started his analyses by constructing classificatory trees of arguments into their various logical elements. Then, he studied their structure by elaborating on the elements' 'syllogistic' relationships.¹⁶

Plato's and Aristotle's methods of decomposition had a great impact on human thought over the past two millennia, which was manifested in various ways. Examples are Ibn Rushd's 'divisions of categories,'¹⁷ Aquinas's '*resolutio*,'¹⁸ Descartes's 'reduction to simplest terms,'¹⁹ Locke's resolution of ideas into simple 'sense impressions,'²⁰ Leibniz's reduction of propositions into 'self-evident truths,'²¹ Kant's subclasses of 'synthetic *a priori* truths,' Frege's 'logical analysis,' Russell's 'deductive chains,' and even Wittgenstein's 'grammatical investigation.'²²

Despite the wide variety and sophistication of the above-mentioned philosophical analysis methods, all forms of the decompositional tradition are criticised, by contemporary systems theorists/philosophers, for their (1) partial/atomistic orientation, (2) traditional logic, and (3) static perspective. Partial views (1) represent a general feature of philosophy and science up until systems approaches were proposed in modern time. Some holistic views appeared occasionally, for example, in Aristotle's metaphysical vision of nature's 'hierarchic order' or Hegel's proposition that 'the whole is more than the sum of its parts.'²³ However, the general orientation of philosophical analysis was partial

rather than holistic which makes it subject to a great deal of inaccuracy in its drawn conclusions. In terms of logic (2), when 'structure' was included in philosophical analysis, the focus was on the simple logical relations between specific elements rather than the logic, function, or purpose of the structure as a whole. It is true that Russell's deductive chains brought the logic of Aristotle's syllogistic structures up to date with modern times. However, logic, since the time of Russell, had undergone major changes that ought to be included in analytical studies.²⁴ Moreover, structure today is understood in terms of one form or the other of 'synergy',²⁵ rather than mere linear logical relations. Finally, decompositional analysis focuses on static relationships (3) between elements and often overlooks their dynamics of change, which have a great impact on the overall performance of any paradigm. Contemporary systems analysis gives the 'dynamics of change' specific attention.²⁶ Next, I will introduce systems analysis as a more effective alternative to decompositional analysis.

Systems Analysis

Systems analysis is based on the definition of systems itself,²⁷ i.e., the analyst assumes that the analysed entity is 'a system.' Thus, analysis entails identifying the entity's features, as pre-defined in the analyst's theory for systems. This is how systems theory and systems analysis are related. A common definition of a system is, 'a set of interacting units or elements that form an integrated whole intended to perform some function.'²⁸ Thus, systematic analysis typically involves the identification of units, elements, or sub-systems, and how these units are interrelated and integrated in processes or functions.²⁹ Whitehead, for example, describes the concept of analysis as, 'the evocation of insight by the hypothetical suggestions of thought, and the evocations of thought by the activities of direct insight. In this process, the composite whole, the interrelations, and the things related, concurrently emerge into clarity.'³⁰ Uncovering these interrelations is what will reveal 'the whole' of the analysed system and take analysis beyond the atomistic and static views of 'decompositional analysis.' Systems analysis is gaining popularity and has been recently applied to a large number of fields of knowledge.³¹

However, I argue that despite its advantages over decompositional analysis and the large number of applications it now deals with, systems analysis is still underdeveloped compared to systems theory itself. There is a wealth of research on the concept of ‘system’ in systems theory that has not been utilised in systematic analysis. Current methods are still based on the above simple and common definition of a system as a ‘set of interacting units,’³² and hence missing a large number of system features that could be of great use to analysis. Next I will elaborate on a number of these definitions and features, with a purpose of presenting new criteria for systems analysis that are best suited to the analytical task at hand.

Now, given the assumption that the analysed entity is a ‘system,’ the analysis process proceeds to examine the features of that system. There are numerous theories of the general features of systems. I will outline some of these theories next. The system features surveyed below are rather abstract and written in a ‘natural sciences’ language. Yet, I find this survey necessary in order to be able to elect a few system features that are most suitable to this book’s objectives.

Theories of System Features

I had previously proposed that ‘efficient’ systems must maintain the features of goal-orientation, openness, cooperation between sub-systems, hierarchical structure, and balance between decomposition and integration.³³ However, I will propose in this section a more comprehensive set of systems features based on the following survey of related literature. Keep in mind the relationship between these features and the (Islamic) theological arguments and the concepts of ‘Designer’ and ‘Synthesiser’ (with a capital D and S) of the majestic system of this universe, which I had proposed in the previous section of this chapter.

Bertalanffy, the ‘father of systems theory,’ outlined a number of features or characteristics for systems.³⁴ The following is a summary.

1. Holism: Holistic properties, which are not possible to detect by analysis, should be possible to define in a system. Holism is an important feature of systems that was also extensively explored by Smuts,³⁵ Litterer,³⁶ and de Saussure.³⁷

2. Goal-seeking: Systemic interaction must result in reaching some goal or final state, or arriving at some equilibrium.
3. Interrelationship and interdependence of objects and their attributes: unrelated and independent elements can never constitute a system.
4. Inputs and outputs: In a closed system, the inputs are determined once and for all. In an open system, additional inputs are admitted from its environment. A 'living system' has to be an open system.
5. Transformation: All systems, if they are to attain their goal, must transform some 'inputs' into some 'outputs.' In living systems, this transformation is mainly of a cyclical nature.
6. Regulation: The interrelated objects constituting the system must be regulated in some fashion so that its goals can be realized. Regulation implies that necessary deviations will be detected and corrected. Feedback is therefore a requisite of effective control. Surviving open systems should maintain a stable state of dynamic equilibrium.
7. Hierarchy: Systems are generally complex wholes made up of smaller subsystems. This nesting of systems within other systems is what is implied by hierarchy.
8. Differentiation: In complex systems, specialised units perform specialised functions. This is characteristic of all complex systems that is also called specialisation or division of labor.
9. Equifinality and multifinality: This feature entails attaining the same objectives via equally valid alternative ways, or from a given initial state, and obtaining different and mutually exclusive objectives.
10. Entropy: This is the amount of disorder or randomness present in any system. All non-living systems tend towards disorder; left alone they will eventually lose all motion and degenerate into an inert mass. When this permanent stage is reached and no events occur, maximum entropy is attained. A living system can, for a finite time, avert this process by importing energy from its environment. It is then said to create what is called 'negentropy,' which is characteristic of all kinds of life. Hence, Hitchens defined a system to be a 'collection of interrelated entities such that both

the collection and the interrelationships together reduce local entropy.’³⁸

Katz and Kahn defined an open system according to the following set of features: importation of energy, information input, throughput, output, cycles of events, negative entropy, coding process, equilibrium, differentiation (elaboration), integration (coordination), and equifinality (as defined by Bertalanffy).³⁹

Ackoff defined systems in terms of sets of two or more elements that satisfy the following three conditions:⁴⁰

1. The behavior of each element has an effect on the behavior of the whole.
2. The behavior of the elements and their effects on the whole are interdependent.
3. However subgroups of the elements are formed, all have an effect on the behavior of the whole, but none has an independent effect on it.

Churchman, who was another leading systems theorist, proposed the following characteristic features of a system:⁴¹

1. It is teleological (purposeful).
2. It has parts (components) that in themselves have purpose.
3. Its performance can be determined.
4. It has a user or users.
5. It is embedded in an environment.
6. It includes a decision maker who is internal to the system and who can change the performance of the parts.
7. There is a designer who is concerned with the structure of the system and whose conceptualisation of the system can direct the actions of the decision maker and ultimately affect the end result of the actions of the entire system.
8. The designer’s purpose is to change a system so as to maximise its value to the user.
9. The designer ensures that the system is stable to the extent that he or she knows its structure and function.

Boulding elaborated on the feature of 'order,'⁴² which was proposed as a theological argument in the previous section. Boulding proposed that order, regularity and non-randomness are 'naturally' preferable to lack of order, irregularity and randomness, and that orderliness makes the world good, interesting and attractive to the systems theorist. He further considered the search for order and law, via quantification and mathematisation, to be valuable aids for establishing order. Bowler focused on hierarchy and levels in his proposed general system features, which are presented below.⁴³

1. The universe is a hierarchy of systems; that is, simple systems are synthesised into more complex systems from subatomic particles to civilisations.
2. All systems, or forms of organisation, have some characteristics in common, and it is assumed that statements concerning these characteristics are universally applicable generalisations.
3. All levels of systems have novel characteristics that apply universally upward in the hierarchy to more complex levels but not downward to simpler levels.
4. It is possible to identify relational universals that are applicable to all systems at all levels of existence.
5. Every system has a set of boundaries that indicates some degree of differentiation between what is included and excluded in the system.
6. Everything that exists, whether formal, existential, or psychological, is an organised system of energy, matter, and information.
7. The universe consists of processes synthesising systems of systems and disintegrating systems of systems. It will continue in its present form as long as one set of processes does not eliminate the other.

Maturana and Varela proposed that a necessary feature for a living system is its capacity for 'autopoiesis,' or self-renewal. This feature allows living systems to be autonomous. The activities of autonomous systems are mainly directed inwards, with the sole aim of preserving its autonomy.⁴⁴ Luhmann utilised the autopoiesis concept in his proposal

for ‘law as a social system,’ in order for the law to respond to ‘the part of its environment selected by its norms,’ and changes itself ‘through internally linked communications,’ and hence, ‘preserves its autonomy.’⁴⁵ Gharajedaghi proposed five systems principles that he learnt through management of business organisations, namely, openness, purposefulness, multidimensionality, counter-intuitiveness, and emergent properties.⁴⁶ Hitchins proposed that the ‘philosophy of systems engineering’ is based on the fundamentals of ‘holism,’ ‘openness,’ and ‘synthesisism.’⁴⁷

Koestler presents a hierarchic view, expressed in the *holon* (wholeness) feature, which entails that wholes and parts do not have separate existences in living organisms or social organisations. Their integrative and self-assertive tendencies exist side by side and are reflected in their ‘cooperative’ behavior.⁴⁸ I had previously proposed that this ‘cooperative behavior’ results in maximizing the utilization of the information available inside systems.⁴⁹

Weaver classified systems according to the feature of complexity, as follows:

1. Organised complexity: A typical form of organised complexity is a living system.
2. Unorganised complexity: This type refers to non-living systems where the number of variables is very large and each variable has a totally unpredictable or unknown behavior.
3. Organised simplicity: This type refers to simple systems, such as machines, which have a small number of components.⁵⁰

Simon classified systems in terms of the feature of ‘decomposition,’ as follows:⁵¹

1. Decomposable system: subsystems can be regarded as independent of one another.
2. Near-decomposable system: interaction between subsystems is weak but not negligible.
3. Non-decomposable system: directly dependent on other systems or explicitly affect them.

Ackoff classified systems in terms of their goals, as follows⁵²:

1. Goal-maintaining system, which attempts to fulfil a pre-determined goal.
2. Goal-seeking system, which considers choices concerning how to deal with variable behavior in the system. Previous behavior stored in a simple memory permits changes based on learning.
3. Multigoal-seeking system, which is capable of choosing from an internal repertoire of actions in response to changed external conditions. Such automatic goal changing demands distinct alternatives; generally the system decides which means of achievement are best.
4. Goal changing system, which reflects upon decisions made. Information collected and stored in the memory is examined for the creation of new alternatives for action. Will, purpose, autonomy, 'feedforward' mechanism, learning, and consciousness define this process, existing only within living systems.

Jordan also classified systems based on three features, namely, structural versus functional, purposive versus non-purposive, and mechanistic versus organismic, as follows:⁵³

1. Structural, purposive, mechanistic, such as a road network.
2. Structural, purposive, organismic, such as a suspension bridge.
3. Structural, non-purposive, mechanistic, such as for instance, a mountain range.
4. Structural, non-purposive, organismic, such as a bubble (or any physical system in equilibrium).
5. Functional, purposive, mechanistic, such as a production line (where a breakdown in one machine does not affect the other machines).
6. Functional, purposive, organismic, such as a living organism.
7. Functional, non-purposive, mechanistic, such as the changing flow of water as a result of a change in the river bed.
8. Functional, non-purposive, organismic, such as a the space/time continuum.

Beer presented a 'viable system model' based on four principles of organisation.⁵⁴

1. The first principle of organisation: Variety, diffusing through an institutional system, tends to equate; it should be designed to do so with minimum cost.
2. The second principle of organisation: Channels carrying information between the management unit, the operation and the environment must each have a higher capacity than the generating subsystem.
3. The third principle of organisation: Whenever the information carried on a channel crosses a boundary, it undergoes transduction; the variety of the transducer must be at least equivalent to the variety of the channel.
4. The fourth principle of organisation: The operation of the first three principles must constantly recur through time, and without lag.

Skyttner proposes the following twenty general features, which he argued are valid for all kinds of systems:⁵⁵

1. System holism principle: A system has holistic properties not manifested by any of its parts. The parts also have properties not manifested by the system as a whole.
2. Suboptimisation principle: If each subsystem, regarded separately, is made to operate with maximum efficiency, the system as a whole will not operate with utmost efficiency.
3. Darkness principle: No system can be known completely.
4. Eighty-twenty principle: In any large, complex system, eighty percent of the output will be produced by only twenty percent of the system.
5. Hierarchy principle: Complex natural phenomena are organised in hierarchies wherein each level is made up of several integrated systems.
6. Redundancy of resources principle: Maintenance of stability under conditions of disturbance requires redundancy of critical resources.

7. Redundancy of potential command principle: In any complex decision network, the potential to act effectively is conferred by an adequate concatenation of information.
8. Relaxation time principle: System stability is possible only if the system's relaxation time is shorter than the mean time between disturbances.
9. Negative feedback causality principle: Given negative feedback, a system's equilibrium state is invariant over a wide range of initial conditions.
10. Positive feedback causality principle: Given positive feedback in a system, radically different end states are possible from the same initial conditions.
11. Homeostasis principle: A system survives only so long as all essential variables are maintained within their physiological limits.
12. Steady-state principle: For a system to be in a state of equilibrium, all subsystems must be in equilibrium. All subsystems being in a state of equilibrium, the system must be in equilibrium.
13. Self-organising systems principle: Complex systems organise themselves, and their characteristic structural and behavioral patterns are mainly a result of interaction between the subsystems.
14. Basins of stability principle: Complex systems have basins of stability separated by thresholds of instability. A system dwelling on a ridge will suddenly return to the state in a basin.
15. Viability principle: Viability is a function of the proper balance between autonomy of subsystems and their integration within the whole system, or of the balance between stability and adaptation.
16. First cybernetic control principle: Successful implicit control must be a continuous and automatic comparison of behavioral characteristics against a standard. It must be followed by continuous and automatic feedback of corrective action.
17. Second cybernetic control principle: In implicit control, control is synonymous with communication.
18. Third cybernetic control principle: In implicit control, variables are brought back into control in the act of, and by the act of, going out of control.
19. The feedback principle: The result of behavior is always scanned and its success or failure modifies future behavior.

20. The maximum power principle: Those systems that survive in competition between alternative choices are those that develop more power inflow and use it to meet the needs of survival.

The feature of hierarchy in systems inspired a range of general classifications of systems and sub-systems, where specific features were given to each level of the hierarchy. I shall now explain further.

Theories of System Hierarchies

Systems theorists attempted to define abstract levels of hierarchy in systems in general, and studied the relationship between these levels. Fivaz puts the knowledge about levels in an ‘evolutionary paradigm,’ in which the understanding of systemic qualities and behavior on a certain level entails the study of the levels above and below the chosen level.⁵⁶ According to Boulding, the levels in the ‘hierarchy of systems complexity’ are mechanical, cybernetic, positive feedback, creodic, reproductive, demographic, ecological, evolutionary, human, social, and transcendental, in this sequence.⁵⁷ Miller viewed the levels in the hierarchy of ‘living systems’ as: cells, organs, organisms, groups, organisations, communities, societies, and supranational systems.⁵⁸ Miller also proposed a general hierarchy of ‘information processing systems,’ which includes: reproducer, boundary, ingestor, distributor, converter, producer, storage, extruder, motor, supporter, input transducer, internal transducer, channel, timer, decoder, associator, memory, decider, encoder, and output transducer.⁵⁹ Lovelock has a similar classification, which he called ‘processing levels.’⁶⁰ Kirchner proposed a theory for the whole universal/Gaia system, in which levels of the hierarchy are organised from weak to strong as follows: influential Gaia, co-evolutionary Gaia, homeostatic Gaia, teleological Gaia, and optimising Gaia.⁶¹ De Chardin has an alternative mind/noosphere theory, in which the levels in the hierarchy are energy, matter, life, instincts, thoughts, and noosphere.⁶² Laszlo proposed parallel levels, which extend across space, technology, science, communication, and forms of government, as Chart 2.1 (a) shows.⁶³ Salk divided ‘categories of nature’ into units, binary components, and disciplines (Chart 2.1. (b)).⁶⁴

Klir proposed an ‘epistemological systems hierarchy,’ in which the levels are concerned with data, models, structure, and meta-systems, in order.⁶⁵ Cook proposed ‘control centers’ on the five following levels: the atomic level, the cellular level, the brain level, the family level, and the government level.⁶⁶ Checkland proposed a systems typology of subatomic systems, atomic systems, and molecular systems. These levels give rise to non-living systems (crystals, rocks and minerals), and living systems (single cells, plants, animals, and ecologies).⁶⁷ Powers proposed a ‘control theory’ that defines the levels of ‘core of control’ from intensity to spiritual phenomena, passing through the levels of sensation, configuration, transitions, sequence, relationships, programmes, principles, and system concepts.⁶⁸

From a systems theoretical, cognition-based, and multidimensional point of view, all of the above theories for features and hierarchies are valid views of systems. As such, this book is dealing with fundamentals of Islamic law as a ‘system’ which interacts with the scripts and life realities, and produces rulings and guidelines. This system includes a hierarchy of sub-systems which deal with various topics of the ‘fundamentals.’ Nevertheless, none of the above theories could be fully endorsed for the sake of the analysis carried out in this work, for the following reasons.

(a)

	Space	Technology	Science	Communi- cations	Government
1.	Cave/tent	Human energy		Pictograms	Family, hunting
2.	Village	Animal energy	Protoscience	Ideograms	Tribal level
3.	Town	Metal tools	Mathematics	Writing	Theocratic politics
4.	City	Machine technology	Newtonian	Machine transmission	National state system
5.	‘Ecumenopolis’	Cybernetics	Einsteinian relativity	Electrical transmission	Sovereignty invested in global mankind

(b)

Unit	Binary Components	Discipline
Collective mind	Culture/society	Sociometabiology
Mind	Intuition/reason	Metabiology
Organism	Species/individual	Socio-biology
Cell	Gene/soma	Biology
Atom	Nucleus/electrons	Chemistry
Particle	Energy/mass	Physics
Form	Continuous/discrete	Mathematics
Order	Non-manifest/manifest	Metaphysics

Chart 2.1. (a) Laszlo's parallel hierarchies. (b) Salk's hierarchy of the 'categories of nature.'

First, most of the above theories were primarily oriented to the physical world of matter and, hence, not applicable to our investigation in the world of philosophy and law. Examples are Katz and Kahn's 'importation of energy' and 'coding,' Bowler's 'matter' component of 'any system,' Beer's principles which involved 'cost' and 'management units,' and Boulding's search for order via 'quantification and mathe-matisation.' Similarly, Churchman assumed a 'human designer' for all systems. Skyttner's features, which he argued are 'valid for all kinds of systems,' involved features that do not apply to many systems, including our proposed system of Islamic law. Example features are redundancy of resources, physiological limits, internal communication, and power inflow. Maturana and Varela's idea of 'self-renewal' for living systems does apply to the Islamic law, as far as this book is concerned. However, as will be shown later, this renewal (*tajdīd*) comes from the law's openness to and interaction with the outside environment, not from 'autonomous activities that are directed inwards,' as was the case in the *autopoiesis* process, which Luhmann adopted for his theory of the law. Furthermore, there are numerous

proposed ‘universal’ system levels that do not apply to our topic, such as the levels of mechanical, reproductive, demographic, ecological, cells, organs, organisms, memory, channel, timer, decoder, and motor.

Second, many of the above classifications were binary and one-dimensional, contrary to the multidimensional universal feature of systems, rightly proposed by Gharajedaghi and others. One example is Weaver’s ‘complex’ versus ‘simple’ dichotomy, even though ‘degrees of complexity’ could present a more realistic feature. Another example is Bertalanffy’s, Jordan’s, Salk’s and Checkland’s classification of all systems into living (i.e., in a biological sense) versus non-living, neither of which applies to systems in the realm of social sciences or humanities. Finally, systems theories that addressed one aspect only, such as holism, interrelationships, hierarchy, or decomposition, do not capture all the dimensions that analysis is supposed to tackle. Therefore, I decided to propose a novel set of system features that will be utilised in this work’s systematic analysis, and which could also be useful in other analyses of theological, social, and legal systems.

Proposed System Features

This book will assume that the set of fundamentals of Islamic law (*uṣūl al-fiqh*) is a ‘system,’ which will be analysed according to a set of features. Here I am suggesting a number of features for this system and will argue for each from two perspectives: systems theory and Islamic theology. The systematic analyses presented here will, then, revolve around the six following system features: cognitive nature of systems, wholeness, openness, interrelated hierarchy, multi-dimensionality, and purposefulness.

Cognitive Nature of the System of Islamic Law

From a systems theory perspective, ‘correlation,’ as explained previously, is the systems’ philosophical middle ground between realists’ ‘identity’ and nominalists’ ‘duality,’ i.e., in order to best describe the relationship between mentally hypothesised systems and reality. The ‘cognitive nature of systems’ is another expression of this correlation. A hypothesised system of the Islamic law, in our case, is a construction

in the jurist's cognitive faculty, or '*fi dhihn al-faqīh*,' to use Ibn Taymiyah's expression of the same concept.⁶⁹

From an Islamic theological perspective, Islamic law (*fiqh*) is a result of human reasoning and reflection (*ijtihād*) upon the scripts attempting to uncover its hidden meanings or practical implications. Islamic jurists and theologians maintained that, 'God is not to be called a *faqīh* (jurist or lawyer), because nothing is hidden from Him.'⁷⁰ Therefore, Islamic law (*fiqh*, that is) is a matter of human cognition (*idrāk*)⁷¹ and understanding (*fahm*),⁷² rather than a literal manifestation of God's commands. Al-Eini explains: 'Fiqh is an understanding. Understanding requires good perception. And perception is a force by which one could associate holistic pictures and meanings to mental cognition (*idrāk* 'aqlī').'⁷³ Al-Bayḍawī wrote: 'Precisely, *fiqh* is a probable perception (*ẓann*) rather than confirmed knowledge ('*ilm*), which is at a different level, because the belief that a certain ruling is so and so according to God is a claim that is impossible to verify.'⁷⁴ The feature of the 'cognitive nature of the Islamic law' is necessary for validating a much-needed pluralistic view towards all schools of Islamic law, as will be elaborated later.

Wholeness of the System of Islamic Law

From a systems theoretic perspective, it was explained above that the main advantage of systematic analysis over 'decompositional' analysis is its holistic, versus partial/atomistic, approach. Partial cause-and-effect thinking was a general feature of human thinking until modern time, as explained in the previous section. Currently, however, research in natural and social sciences is widely moving from 'piecemeal analysis,' classic equations, and logical statements, to the explanations of all phenomena in terms of holistic systems.⁷⁵ Even basic physical phenomena, such as space/time and body/mind, cannot be split empirically, according to today's science.⁷⁶ Systems theory views every cause-and-effect relation as one part of a whole picture, in which groups of relations result in new emerging properties and combine to form a 'whole' that is more than a simple 'sum of the parts.'

Based on theological and 'rational' arguments, the juridical authority (*hujjiyyah*) of what jurists called 'the holistic evidence' (*al-dalīl al-*

kullī) is considered one of the fundamentals (*uṣūl*) of the Islamic law⁷⁷ which jurists had given priority over ‘single and partial rulings.’⁷⁸ Developing systematic and holistic thinking for the fundamentals of Islamic law (*uṣūl al-fiqh*) will be useful for Islamic philosophy of law, in order to develop the semantics of causes-and-effects into a more holistic language. A holistic approach will also be useful for Islamic philosophy of religion (*‘ilm al-kalām*), in order to develop its language of causes-and-effects into a more systematic language, including proofs for the existence of God, as outlined earlier.

Openness of the System of Islamic Law

Systems theorists differentiated between open and closed systems. ‘Living systems’ must be open systems, they maintained.⁷⁹ This applies to living organisms as well as any system that is to ‘survive.’⁸⁰ It was mentioned above that Bertalanffy linked the features of openness and purposefulness with his system feature of ‘equifinality,’ which means that open systems have the ability of reaching the same objectives from different initial conditions via equally valid alternatives. These ‘initial conditions’ come from the environment. Thus, an open system interacts with the environment outside the system, unlike closed systems which are isolated from the environment.

The system of the Islamic law is an ‘open’ system, in the above sense. A few jurists, however, are still calling for the ‘closure of the door of *ijtihād* (new juridical reasoning) on the *uṣūl* (theoretical) level,’⁸¹ which would, effectively, transform the Islamic law into a ‘closed system,’ and which would eventually cause the Islamic law to ‘die,’ to go along with the metaphor. However, all known schools of Islamic law and the vast majority of jurists over the centuries have concurred that *ijtihād* is necessary for the Islamic law because ‘(specific) scripts are limited and events are unlimited.’⁸² Thus, the fundamental methodology of Islamic law has developed certain mechanisms for dealing with new events or, in systems theoretical terminology, ‘interacting with the environment.’ Examples of these mechanisms are analogical reasoning (*qiyās*), interest (*maṣlahah*), and accommodating customs/traditions (*‘tibār al-‘urf*). However, it will be shown that these mechanisms are in

need of more development in order to give the Islamic law enough 'flexibility' to be able to deal with today's rapidly changing circumstances. Hence, the mechanisms and degrees of 'openness' will be one of the features used in developing and critically analysing the Islamic *uṣūl* system and its subsystems.

Interrelated Hierarchy of the System of Islamic Law

Analysing entities in terms of hierarchy is a common approach between systematic and decompositional methods. The previous subsection surveyed a number of suggested 'universal' levels in hierarchies and concluded that they were tailored to specific environments. I will refer here to the theory of 'categorisation' in cognitive science, in an attempt to outline a universal classification strategy that is suitable for the subject at hand. Categorisation is the process of treating distinct entities, scattered over a multi-dimensional 'feature space,' as equivalent and belonging to the same group or category.⁸³ It is one of the most fundamental cognitive activities, through which humans understand information they receive, make generalisations and predictions, and name and assess various items and ideas.⁸⁴ According to cognitive science, there are two alternative theoretical explanations of human categorisations, which represent, in my view, two alternative methods of categorisation itself. These alternative methods are categorisations based on 'feature similarity' and 'mental concepts.'⁸⁵

Feature-based categorisations attempt to discover 'natural' similarities and differences between categorised entities. Similarity or difference between two entities is measured according to how much they match or differ in terms of certain pre-defined 'features' or characteristics.⁸⁶ Items are judged to belong to a certain category via matching their features with the features of an 'ideal prototype.'⁸⁷

On the other hand, concept-based categorisations define categories based on mental concepts, rather than feature similarities. A mental concept is an underlying principle or theory in the classifier's perception, which includes a complex combination of causal and explanatory links represented in a structured framework. A concept is not a simple true-or-false feature, but a group of multidimensional criteria, which could create a number of simultaneous categorisations for the same

number of entities. A concept also implies a range of ‘rough,’ ‘vague’ or ‘soft,’ rather than ‘hard’ categories,⁸⁸ i.e., the line between categories is not a clear number or measure, but a perception that could differ, within a ‘reasonable’ range, from one person to another.⁸⁹

Feature-based classifications are criticised for a number of limitations that concept-based classifications do not have. The following are theoretical reasons behind preferring concept over feature-based categorisation methods, which will be used, later, in criticising traditional (feature-based) categorisation of schools of Islamic law.

- i) Concept-based methods are integrative and systematic methods, unlike feature-based methods, which deal with entities as lists of unconnected attributes or features, and hence, miss a lot of significant analytical information.
- ii) Feature-based methods might lead to overgeneralisations by abstracting a great deal of information into simplistic decisions of existence or non-existence of one or more features.
- iii) Feature-based classifications do not allow ranges, or multi-level rankings, because they are based on a ‘pigeon-hole’ true-or-false method.
- iv) In order to keep the homogeneity of the categorising features, important non-binary factors could sometimes be ignored.

In this book, concept-based categorisations will be applied to the fundamentals of Islamic law and feature-based categorisations will be criticised. However, analysis will not stop at the resulting ‘tree-structure’ hierarchy, but will also extend to analyse the interrelationships between the resulting sub-concepts. This consideration of ‘structure’ will not abide by formal logical analysis, such as Aristotle’s syllogism and Russell’s deductive chains, but will focus on ‘decision-making procedures’ in the practical *fiqhī* implementation of these concepts.

Multi-Dimensionality of the System of Islamic Law

Dimensionality in systems terminology has two ‘dimensions,’ namely, rank and level. Rank of dimensionality is the number of dimensions in the ‘space’ under consideration. Level of dimensionality is the possible

number of levels/intensities in one dimension. Popular philosophical investigation tends to think in terms of one dimension and two levels. Phenomena and even ideas with ‘opposing tendencies’ are usually seen in terms of one factor only, and hence, appear ‘contradictory’ rather than ‘complementary,’ and are analysed as ‘zero-sum’ games rather than ‘win-win’ games.⁹⁰ Thus, phenomena and ideas are always expressed in terms of dichotomies that seem to be ‘opposite,’ such as, religion/science, empirical/rational, physical/metaphysical, realist/nominalist, deductive/inductive, universal/specific, collectivity/individuality, teleological/deontological, mind/matter, objective/subjective, and so on. The above dichotomies represent one-dimensional single-rank thinking, in which consideration is given to one factor only, even though these pairs could be seen ‘complementary’ in other dimensions. For example, science and religion, in their popular conceptions, could be contradictory in terms of the centrality of the ‘Divine command,’ but they could be complementary in terms of aiming to achieve human happiness, in terms of attempting to explain the origins of life, and so forth. Mind and matter could be viewed as contradictory in terms of their relation with sensual data, but they could also be viewed as complementary in terms of theories of cognitive/ brain science and ‘smart’ machines, or artificial intelligence. And so on.

Additionally, lack of multi-dimensionality manifests in popular two-level judgements of opposing tendencies, which are better viewed

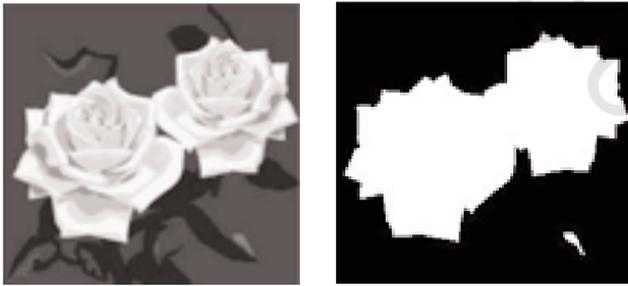


Chart 2.2. A gray-scale picture distorts the variety of detail of a colored picture. Its two-color ‘distortion,’ however, filters out a great deal of information. In this example, viewing the two-color picture alone creates an interesting puzzle.

as furthestmost points on a continuum or spectrum of points. Hence, human thinking is often confined to false binary choices, such as, certain/uncertain, win/lose, black/white, low/high, or good/bad. In a single-rank dimension of color, for example, white and black should rather be seen as the extreme ends of an infinite number of grey levels (refer to Chart 2.2 for an illustration).

Systematic analysis, presented later, will show that reasoning in traditional schools of Islamic law involved a great deal of one-dimensional and binary thinking. One-dimensional methods consider only one factor in a given juridical case (*mas'alah*). Hence, the vast majority of legal opinions (*fatāwā*) were issued based on single evidences (often called: *dalīl al-mas'alah*, or 'the evidence of the case'), even though there is always a variety of evidences (*adillah*) that could apply to the same case and imply different outcomes or rulings. This is a standalone topic that is discussed in traditional and contemporary literature on fundamentals of fiqh under the title, 'disagreement between evidences' (*ta'arūḍ al-adillah*). The method of 'conciliation between evidences' (*al-jam' bayn al-adillah*) is an example of multi-dimensional methodology, which will be further developed in Chapter Six.

On the other hand, binary judgements, such as, obligatory/unlawful (*wājib/harām*), abrogating/abrogated (*nāsikh/mansūkh*), truthful/fraudulent (*ṣaḥīḥ/fāsīd*), exact/illusionary (*munḍabiḥ/mauḥūm*), and so on, limited the ability of Islamic law to take into consideration cases in the 'grey area' between these extreme points. Analysis will show how some schools of Islamic law suggested 'intermediate categories' to expand popular binary classifications, and how they contributed to a sense of realism and flexibility in the Islamic law.

Purposefulness of the System of Islamic Law

Goal-orientation and purposefulness were common features in the system theories presented above. However, Gharajedaghi, following Ackoff, differentiated between goals (Arabic: *ahdāf*) and purposes (Arabic: *ghāyāt* or *maqāṣid*). He considered an entity to be purposeful if it can produce (1) the same outcome in different ways in the same environment, and (2) different outcomes in the same or different

environments.⁹¹ Therefore, goal-seeking systems mechanically produce their outcomes following the same means, given the same environments, and do not have choices or options to change their means in order to reach the same goal. Purpose-seeking systems, on the other hand, could follow a variety of means to achieve the same end or purpose. Moreover, goal-seeking systems could not produce different outcomes for the same environment because their outcomes are more or less 'pre-programmed.' Nevertheless, purpose-seeking systems could produce different outcomes for the very same environment as long as these different outcomes achieve the desired purposes. 'Purposefulness,' in the above sense, will be endorsed in this book as one of the features that apply to the fundamentals of Islamic law, as a whole, as well as to all of its levels and elements.

From a theological perspective, 'causation' in 'divine actions' was the subject of long philosophical/theological (*kalāmī*) debates. The question was whether 'God's actions have to have causes behind them' (*ta'ḥlīl af'āl Allāh*) or not. It is important to note that the concept of 'causes' (*'ilal/asbāb*) was not differentiated, as far as *kalām* literature was concerned, from the concept of 'purposes' (*aghrāḍ/maqāṣid/hikam*)⁹². These two concepts were differentiated, however, in the area of practical rulings (*fiqh*)⁹³. *Ta'ḥlīl* theological debates are relevant to our study since the Islamic law itself is theologically a result of one of these 'divine actions,' which is revelation and the '*aghrāḍ*' behind the law are, then, *maqāṣid al-sharī'ah*. Thus, the question is: Did God have a purpose behind revealing the law? *Kalāmiyyūn*/Theologians gave three different answers to this question.

(i) Divine actions 'must' have causes/purposes. Mu'tazilīs and Shia (with some exceptions) divided all actions into 'embellished' (*ḥassan*) and 'repugnant' (*qabīḥ*) actions.⁹⁴ Most of them believed that one of these two features is 'intrinsic' (*dhātī*) in every action and not subject to changing circumstances. They believed that human reason is capable of 'judging' embellishment and repugnance (*al-taḥsīn wal-taqbīḥ*) independently. And since these definitions are the result of 'rationality,' Mu'tazilīs considered them universal and, thus, applied them to human beings and to God too (based on their 'principle of justice'). For human beings, embellished actions are 'obligations' and repugnant

actions are ‘forbidden.’ In terms of God, embellished actions are actions that ‘He must do,’ and repugnant actions are ‘impossible for Him to do,’ in their words. They also believed that an action without a purpose (*gharaḍ*) is nonsense/meaningless (*‘abath*) and, thus, repugnant. Therefore, they judged that all of God’s actions are necessarily ‘purposeful.’⁹⁵

(ii) Divine actions are above causes/purposes. Ash‘arites (and Salafis, including Ḥanbalīs) took a position that is a reaction to and the radical opposite of the above Mu‘tazilī position. They believed that an action could be ‘embellished’ or ‘repugnant,’ but they judged that this classification should be based on the ‘revealed law’ (shari‘ah) and not reason. Without the shari‘ah, for Ash‘arites, actions are equally ‘embellished’ and ‘repugnant;’ good and bad (precisely, with the exception of knowledge/ignorance and justice/injustice⁹⁶). Thus, they judged that God never ‘has to’ do anything, and what He does, regardless of what it is, is ‘good’ and ‘embellished.’ Therefore, Ash‘arites believe that God’s actions are ‘above purposes,’ because the performer of an action for a purpose is ‘in need’ of that purpose and God is above needs.⁹⁷ They also argued that God is the ‘Cause of the causes and the Creator of the causes and their effects too,’ and hence, does whatever He wills without having to ‘abide by any of our causation rules.’⁹⁸ Ash‘arites based their whole fundamentals of law and moral philosophy on the above argument. Al-Ghazālī, for example, judged that the ‘theory of mean’ (which is also called Aristotle’s principle of moderation) is valid because ‘the scripts had prescribed it, not because rationality approved it as the philosophers had said.’⁹⁹

(iii) Divine actions have causes/purposes out of God’s grace. Maturidites (a section of Ḥanafīs), who had fewer followers than the above schools, took a middle ground. They believed that Mu‘tazilīs were correct in assigning purposes to God’s actions, but mistaken in placing ‘obligations’ on God. Maturidites also believed that Ash‘arites were correct in saying that God does not ‘need’ purposes, but believed that purposes and benefits are the ‘needs’ of humans, not God. Maturidites believed in the principle of *al-tahsīn wa al-taqbīḥ*. However, for them, ‘reason’ does not have ‘authority to judge’ what is embellished and what is repugnant, but rather, reason is a God-given

'tool' by which humans could only 'know' what is embellished and what is repugnant.¹⁰⁰

Many jurists who were 'officially' Ash'arites, according to their school of law, did not accept the Ash'arites's radical position on divine purposes and took a position that is closer to the Maturidi position on this issue. However, and for political reasons and fear of persecution, when these jurists expressed their views on purposefulness, they all ensured a safe distance from Mu'tazilism by rejecting the Mu'tazilī 'embellishment and repugnance' doctrine. Examples are al-Āmidī (d. 631 AH/1234 CE),¹⁰¹ al-Shāṭibī (d. 790 AH/1388 CE),¹⁰² Ibn Taymiyah (d. 728 AH/1328 CE),¹⁰³ Ibn al-Qayyim (d. 748 AH/1347 CE),¹⁰⁴ and Ibn Rushd (Averröes, d. 584 AH/1189 CE).¹⁰⁵ Ibn Rushd's attack on the Ash'arite position was the harshest. He wrote in his critique of Ghazālī's *Tahāfut* (Incoherence) that, 'those who reject *asbāb*, reject reason itself.'¹⁰⁶ Al-Shāṭibī, significantly, considered the purposes of the Islamic law (*maqāṣid al-sharī'ah*) to be more basic than the 'fundamentals of law' (*uṣūl al-fiqh*) themselves. He counted amongst the 'fundamentals of religion and universals of belief' (*uṣūl al-dīn wa kulliyah al-millah*) the purposes/*maqāṣid* behind God's actions.¹⁰⁷

Finally, the six system features, proposed above, namely, cognitive nature, wholeness, openness, interrelated hierarchy, multidimensionality, and purposefulness, are highly interrelated. However, the one feature that spans across all other features and represents the core methodology of systematic analysis in this book is purposefulness. The following is a brief outline of the relationships between purposefulness and other features of the system of Islamic law.

- i) Purposefulness is related to the cognitive nature of the Islamic law because various proposals for the nature and structure of the purposes of the Islamic law (*maqāṣid al-sharī'ah*) reflect cognitions of the nature and structure of law itself.
- ii) Universal purposes of the Islamic law (*al-maqāṣid al-‘āmmah*) represent the law's holistic characteristics and universal principles.
- iii) Purposes of the Islamic law play a pivotal role in the process of *ijtihād*, in all of its various forms, which is the mechanism by which the system of Islamic law maintains its 'openness.'

- iv) Purposes of the Islamic law are perceived in a number of hierarchical ways, which correspond to the hierarchies in the system of Islamic law.
- v) Purposes provide multiple dimensions that help resolve and understand ‘apparent contradictions’ and ‘opposing tendencies’ in the scripts and the fundamental theories of the law.

Therefore, I will consider the purposes of the Islamic law (*maqāṣid al-sharī‘ah al-islāmīyah*) to be the basic fundamental principle and methodology in the systems-based analysis presented in this book. Since the effectiveness of a system is measured based on its fulfilment of its (manmade or ‘natural’) purpose, the effectiveness of the system of Islamic law is assessed based on its fulfilment of its purposes (*maqāṣid*).

Before we move to the next chapter on Islamic law, it is necessary to note that the previous two chapters presented the methodology utilised in this work, which is actually based on two sets of theories, namely, systems theories and theories of *maqāṣid al-sharī‘ah*. In the rest of this book, the system features of cognition, wholeness, openness, hierarchy, multi-dimensionality, and purposefulness, as defined in this chapter, will form the tools and criteria of the presented analysis. Nevertheless, the analysis presented in Chapters 3, 4 and 5, for classic and contemporary theories, respectively, will primarily rely on the features of cognition and hierarchy. Then, in Chapter 6, the fundamentals of Islamic law will be defined as a ‘system’ whose feature of wholeness, openness, multi-dimensionality, and purposefulness is realised through the realisation of *maqāṣid al-sharī‘ah*.