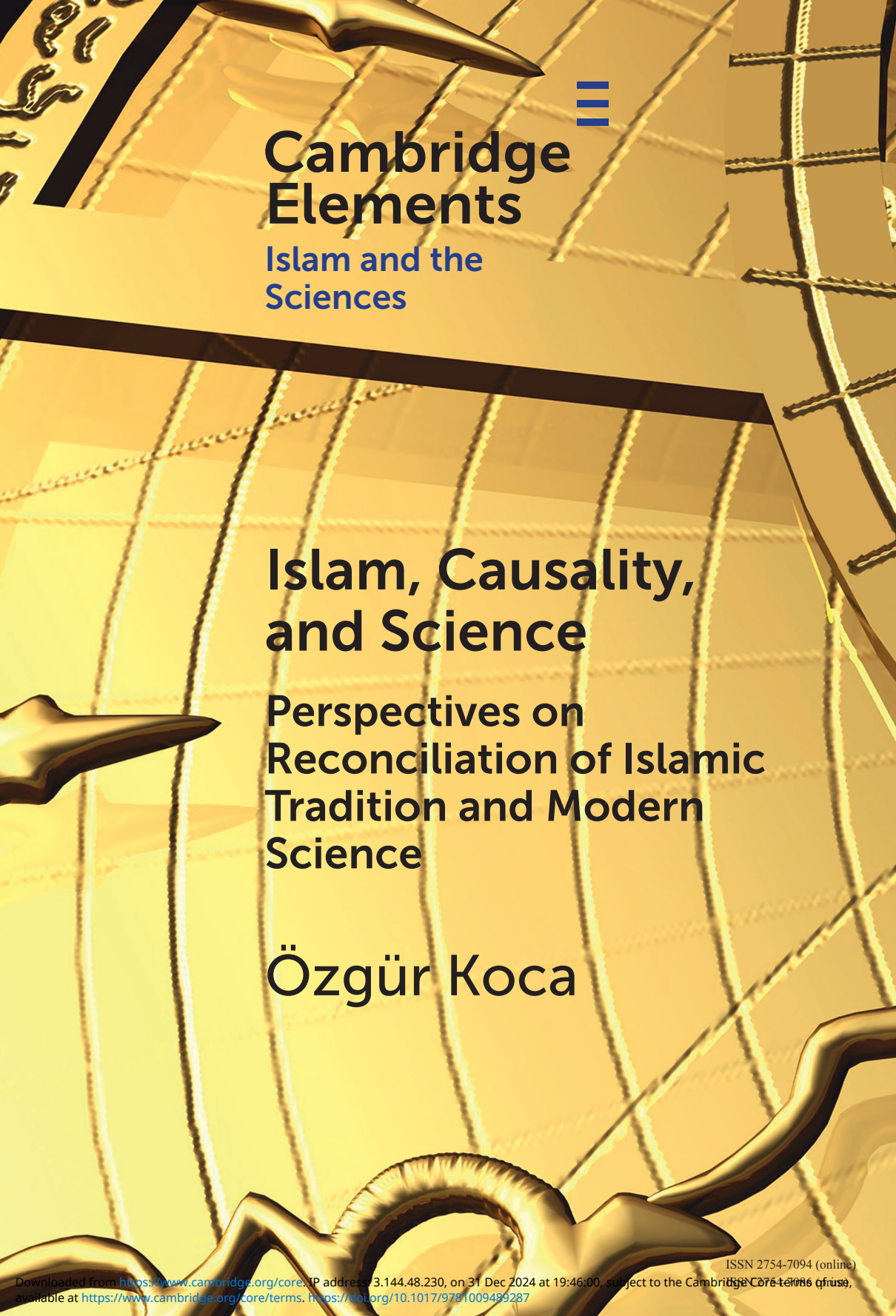

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ISLAM, CAUSALITY, AND SCIENCE

Perspectives on Reconciliation of Islamic Tradition and Modern Science

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Islam, Causality, and Science

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Abstract: This Element intends to contribute to the debate between Islam and science. It focuses on one of the most challenging issues in the modern discussion on the reconciliation of religious and scientific claims about the world, which is to think about divine causality without undermining the rigor and efficacy of the scientific method. First, the Element examines major Islamic accounts of causality. Then, it provides a brief overview of contemporary debates on the issue and identifies both scientific and theological challenges. It argues that any proposed Islamic account of causality for the task of reconciliation should be able to preserve *scientific rigor* without imposing *a priori* limits on scientific research, account for *miracles* without turning them into science-stoppers or metaphors, secure *divine and creaturely freedom*, and establish a strong sense of *divine presence* in the world. Following sections discuss strengths and weaknesses of each account in addressing these challenges.

Keywords: Islam, science, causality, reconciliation, divine action

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Introduction

You threw not, when you threw.

(Qurʾan 8:17)

It is hard to imagine any forces shaping the world today that are more impactful than religion and science. Together, they influence each life on the planet, directly or indirectly, through culture, technology, and politics. It would not be an exaggeration to say that we all have a stake in how these two fundamental forces engage with each other for many practical reasons and how they may guide us toward a better understanding of ourselves and the world. Whether they are in a war to death or collaborate for the good has immense importance for each one of us.

The pages before you are intended to contribute to the debate between religion and science, in general, and Islam and science, in particular. More specifically, I focus on the question of divine and natural causality, which lies at the heart of the debate. One of the most challenging issues in the modern discussion on the reconciliation of religious and scientific claims about the world is to think about divine causality without undermining the rigor and efficacy of the scientific method. One can hardly deny that science has been massively successful in explaining natural phenomena on the basis of the presumption that the world is a causally closed system. On the other hand, most religious traditions have traditionally been committed to robust accounts of the divine causality and action in the world. But how can we attribute events to God when science appears to explain them in terms of natural causality? How can a believer acknowledge a robust presence of God in the natural world without undermining the efficacy of the scientific method? How can one accept and appreciate the power of science without reducing the divine to a "God of (few remaining) gaps?" It is questions like these that concern us here.

Here is how I will proceed. In the first section, I examine three major accounts of causality formulated within the Islamic tradition. A closer look at Islamic theological, philosophical, and spiritual traditions allows us to identify some major approaches to the issue of creaturely and divine causality in the world. First, there is the *Muʿtazilite account of causality*, which accentuates casual necessity and human agency in the created order to secure divine justice and moral perfection. Second, there is the *Islamic occasionalist account of causality*, which emphasizes divine freedom-sovereignty, removes the causal glue from the world by attributing all causal efficacies to God, and aims to secure intelligibility of the natural order through the notion of the "divine habits." Third, there is also, what I call, the *Islamic participatory account of causality* offered and defended by major Muslim philosophers and mystics. This theory

allows us to think about natural causality in light of the notion of existence (*wujūd*) and establishes causal efficacy and agency in the world through participation in the divine reality.

I believe these three accounts represent dominant tendencies in understanding divine and creaturely causality and, subsequently, God–cosmos relationship in the Islamic tradition. When I examine the salient feature of these theories my approach can be described as contextual in that I attempt to understand these accounts of causality in relation to the larger theological, moral, and metaphysical context in which they emerged. For example, when I explore the Muʿtazilite account of causality, I start from the salient features of the larger Muʿtazilite theological framework in which the notion of divine justice is transformed into a *modus operandi* for thinking about all theological, philosophical, and cosmological questions, including causality. Similarly, I have sought to understand occasionalist and participatory accounts of causality within the larger theological and metaphysical framework in which they were constructed.

In the second section, I first provide a brief overview of contemporary discussions on the reconciliation of divine causality and scientific methodology. Then, I argue that any proposed Islamic account of causality for the task should be able (1) to preserve *scientific rigor* without imposing a priori limits on scientific research, (2) to account for *miracles* without turning them into science-stoppers or metaphors, (3) to secure *divine and creaturely freedom*, and (4) to establish a strong sense of *divine presence* in the world.

In the following three sections, I discuss each account's strengths and weaknesses in addressing these challenges. I explore whether the three accounts of causality identified in the first section are viable options for thinking about the divine and creaturely causality without undermining the rigor and efficacy of the scientific methodology.

1 Causality in the Islamic Tradition

1.1 The Muʿtazilite Account of Causality

The Muʿtazilites (Arabic: "Those who separate themselves") constituted one of the oldest Islamic schools of speculative theology that emerged and flourished in Baghdad and Basra (eighth–tenth centuries). The theological origin of the school can be traced back to Wāsil ibn ʿAṭāʾ (d. 748). Wāsil was a student of Ḥasan al-Baṣrī (d. 728), one of the most central figures in early Islam. According to the story, one day the teacher and his student disagreed on whether a grave sinner (*fāsiq*) was a believer or an unbeliever. This theological discussion could have far-reaching implications within the context of sectarian conflict and for the legitimacy of the political leader. Wāsil asserted that a grave

sinner should be classed neither as a believer nor an unbeliever but instead should be seen in an intermediate state between belief and nonbelief (*al-manzila bayna 'l-manzilatayn*). By taking this neutralist position, Wāsil "separated himself" (*iʿtazala*, hence the name Muʿtazilah) from his teacher.

Later the school produced many important theologians such as Abū al-Hudhayl al-ʿAllāf (d. 841 or 849), Ibrāhīm ibn Sayyār al-Naẓẓām (775–845), Abū ʿAli al-Jubbāʾī (d. 915), and Qāḍī ʿAbduljabbār (935–1025). Despite important differences among the school members, one can identify unifying doctrines. The *modus operandi* of the school appears to be the preservation of the absolute unity and oneness of God (*tawhīd*) and divine justice (*al-ʿadl*) (this is why they reject any type of determinism in human actions).[1]

The influence of the school gradually declined after the Caliph Mutawakkil (d. 861), but it has managed to remain relevant to this day. There also seems to be a revived interest in the Muʿtazilite theology among some modern Muslim thinkers. It is possible that this 'neo-Muʿtazilism' could have far-reaching effects on the development and direction of modern Muslim thought.

1.1.1 Justice and Causality

The Muʿtazilites used to call themselves "the people of oneness and justice" (*ahl at-tawhīd wa-l-ʿadl*). The preservation of divine justice, alongside the divine oneness, was at the center of their theological project. In light of this central concern, their account of causality can best be understood. For only with a proper doctrine of causality is it possible to secure freedom, agency, and responsibility in created order. And only if we secure creaturely freedom and agency can we preserve divine justice and, thus, divine moral perfection.

This is why deterministic and fatalistic definitions of the relationship between God and the world, offered by early schools like the "coercionists" (*Jabriyya*), are rejected by Muʿtazilites. Clearly, a coercionist view of God removes genuine causal efficacy from the world, negates human freedom, and, thus, undermines divine justice and moral perfection. In a world where there is no agency and freedom, divine reward and punishment would be based entirely on complete divine arbitrariness, which cannot be reconciled with divine justice. It is for this reason that to establish human's accountability and responsibility for his/her acts, they offered the first systematic attempt to conceptualize the nature of causal relations and human agency.

From the perspective of Muʿtazilites, human beings must be the creators of their acts to preserve divine moral perfection. God cannot be the creator of the servants' acts (*afʿāl al-ʿibād*) because, as Qāḍī ʿAbduljabbār (935–1025)

[1] For a short introduction to the Muʿtazila, see Gimaret.

writes, "in the acts of the servants, there is oppression and injustice. If God is the creator (of those acts), then God must be an unjust oppressor" (2013, II. 76). It follows that God does not coerce people toward good or evil. Rather, it is we who choose good or evil and, thus, cause good and evil. Coercion would be an injustice, and it is therefore ugly (*qabīḥ*) and evil. God does not and cannot do anything ugly and evil (see e.g. Ashʿarī 1963, 190; Baghdādī 1928, 146; Shahrastānī 1961, I, 55; Qāḍī ʿAbduljabbār 1971, 197, 203, 210). If so, the presence of evil and suffering in the world must be attributed to human agency and the nature of beings. Thus, a human individual must be the creator of his/her acts.

Only on the basis of making human the creator of his/her own can any such genuine responsibility be established. If human individuals do not have a genuine creative power, then we would have to accept a coercionist understanding of God, who judges and then punishes or rewards arbitrarily. It is absurd that a just God would punish us without giving us any meaningful power to choose our own acts and influence the world. God does not obligate us to achieve the impossible (*taklīf bi mā lā yutāk*), for He is just.[2]

This creative power that renders us genuinely free agents in the world is called *istiṭāʿa*, *quwwa*, or *qudra* by Muʿtazilites (see e.g. Ashʿarī 1963, 230–231; Qāḍī ʿAbduljabbār 1962–1965, VII. 162). Whoever has this power to act, as Jubbāʾī writes, "can equally well do it or not do it" (Ashʿarī 1963, 230; cited in Gimaret 2004).[3] With the power given to us by God Himself, we are creators of our own acts and, thus, are responsible in accordance with our choices. Muʿtazilite theologians sometimes call this view authorization (*tafwīḍ*). We are authorized by God to act as free agents in the world and to face the consequences of our choices.

Moreover, this creative power must precede the act to be a genuine cause of the act. As Qāḍī ʿAbduljabbār writes, "the power (*qudra*) (to choose) is before the object of power (*maqdūr*), it is not in conjunction (*muqārana*) with the object of power" (Qāḍī ʿAbduljabbār 2013, II. 147, 156). The priority of the power to the object of power is an important step for Muʿtazilites to construct genuine human agency. To claim that human individuals can be responsible for their acts without genuinely causing them is absurd. Only if we are the author of the act in the full sense of the term, we are true agents and authentically responsible. To be a genuine author, we should have the *qudra* before the *maqdūr*.

[2] For a good examination of the notion of *taklīf bi mā lā yutāk* in the Muʿtazilite and Ashʿarite thought, see Süt 2015.

[3] Cited in Gimaret 2004. Or, as Ashʿari writes, "every power is equally the power of an act and of its opposite" (*qudratun ʿalayh wa-ʾala ḍiddih*), Maqalat, 230, ll.12–13.

The Muʿtazilite emphasis on the priority of the creative power can be best understood in relationship to the competing Ashʿarite school's position, which will be examined in the following pages. In fact, the priority (or nonpriority) of the creative power in relation to the act is one of the dividing lines between the Muʿtazilite and Ashʿarite positions. Ashʿarites assert that this creative power is created in conjunction with the act. Muʿtazilites object and argue that the creative power must precede the object of power. Otherwise, we lose genuine freedom in the created order. If it is created together with the act, then what role can it play in choosing this or that act?

Moreover, if this power is created together with the act, then who is doing the choosing? Thus, for Muʿtazilites, the Ashʿarite idea of the simultaneous creation of the power and the act takes away all meaningful content from human agency and freedom. It is unintelligible and absurd. It reduces us to be loci of the divine acts instead of being genuine agents.

God, then, bestows a creative power upon us and leaves us alone with it. This power enables us to choose ourselves and to influence the world around us. This is the only way for the Muʿtazilite theology to conceive human individuals as genuine causes of themselves and the world around them.

1.1.2 Necessity in Causality

As the preceding discussion suggests, preserving divine justice is based on the bestowal of genuine causal efficacy to the created order. Muʿtazilites also argue that the relationship between cause and effect must be necessary. When a cause is present, an effect must necessarily follow.

The accentuation of necessity here can again be traced back to the school's concern for preserving divine justice and moral perfection. Namely, the notion of divine justice, as understood by Muʿtazilites, is based on the *intelligibility* of divine actions. There are objective and intelligible moral truths that can be recognized by every person endowed with reason. Due to this rational capacity, we can judge what is just, what is not, and what is good and what is not. This means that divine actions are intelligible. God is not an "arbitrary king."

This moral objectivism appears to have led to the preservation of the intelligibility of the natural processes. In a way, the demand for the intelligibility of divine actions in the moral domain leads to the demand for preserving the intelligibility of the divine actions in the natural domain. God is not arbitrary in either moral or natural domains. And their necessitarian view of causality serves precisely this purpose and secures the intelligibility of the world.

Thus, most Muʿtazilite scholars accept an intrinsic necessity in the natural processes (see e.g. Ashʿarī 1963, 314, 412; Juwaynī 1969, 506). The principle of

"the necessity of occurrence of effect when its cause is present (*wujūbu wuquʿi-l-musabbabi ʿinda huṣūli sababihi*)" (Qāḍī ʿAbduljabbār 2013, II. 143) guides their examination of the natural processes. The relationship between the two cannot be broken. When we bring together cotton and fire, fire necessarily burns cotton. This is because every object has a "nature." This nature determines how an object behaves. And this is what preserves the intelligibility of the world around us.

The concept of nature/s (*ṭabīʿa*, *ṭabʿ*, *ṭibāʿ*) is used by many Muʿtazilite theologians such as Muʿammar b. ʿAbbād al-Sulamī (d. 215/830), Abū Isḥāq al-Naẓẓām (d. 231/845), Abū ʿUthmān al-Jāḥiẓ (d. 255/869), and Abū al-Qāsim al-Kaʿbī (d. 319/931). The rigor of causality and the intelligibility of the world are established on the basis of these innate natures.[4] God places natures in entities, and they act in accordance with them. From a wheat seed, barley never comes out because wheat has a specific nature that prevents it from becoming barley. A heavy object cannot levitate in the air without any support. God does not create things contradictory to their natures or without any cause-reason. To say the opposite is to defend arbitrariness in the divine acts. Moreover, such arbitrariness cannot be seen as perfection. The notion of nature, thus, is the principle of intelligibility of the world and God.

Sometimes, the concept of *maʿnā* is used in place of nature by Muʿtazilites like Muʿammar ibn ʿAbbād al-Sulamī (d. 835). The concept appears to mean an "intrinsic causal determinant" as Richard M. Frank observes. These intrinsic causal determinants make a thing what it is as the "determinants of the thing's being-so." If one of the two bodies is in motion and the other is at rest, this is due to their *maʿnā* (Frank 1967, 250 and 253).[5] As Khayyāṭ writes concerning Muʿammar, "when he observed two bodies at rest, the one next to the other, and observed that one had moved and not the other, Muʿammar asserted that the former must have some causal determinant that came to inhere in it and not the latter" (Demir 2015, 50; Khayyāṭ 1957, 46). Also, Ashʿarī similarly observes that, for Muʿammar, when a body moves, it does so "on account of causal determinant (*maʿnā*) without which it would have no more reason to be moved" (1963, 372).[6] In this sense, it is equivalent to the concept of nature. Entities act under the influence of their intrinsic causal determinants or natures.

[4] A thorough examination of the Muʿtazilite notion of natures can be found in Demir 2015.

[5] In this article, Frank attempts to describe the technical significance of the term *maʿnā* for Muʿammar and concludes that "the causal determinants (*maʿānī*) exist as actually determinant of the effect." In this sense, there is a necessary relationship between *maʿānī* and effects. See Frank 1967, 255. See also Wolfson 1976, 733–739 and Wolfson 1965.

[6] Translated in Frank 1967, 253–254.

It must also be noted that the idea of a necessary connection between cause and effect was defended by Muʿtazilite scholars even though they subscribe to different atomistic and anti-atomistic views of nature. The notion of indivisible parts or atoms (*al-juzʾ alladhī lā yatajazzaʾ* or *al-juzʾ alladhī lā yataqassam*) was accepted by early Muʿtazilites (Ashʿarī 1963, 59 and 568). References to atoms (*jawhar al-wāhid*, *al-juzʾ al-*wāhid) can be found in the writings of major Muʿtazilite scholars like Hudhayl and Naẓẓām (Ibn al-Nadīm 1978, 331; Ibn Ḥazm 1978, 331). They reach the idea of atoms from the divisibility of the material objects. As opposed to the eternal and uncreated being, created beings must have parts. Furthermore, these parts must be limited in number. For, something infinite cannot be encompassed. If the divine knowledge encompasses them, then what is created must be finite (Alousi 1968, 273–277). Put differently, infinity is a divine attribute and cannot be shared by the created order in any way. Hence, the number of atoms must be finite to preserve the finitude of the created order.[7]

So, on this basis, an atomist like Muʿammar would argue that God creates atoms and their specific natures. And due to their natures, they interact with each other, come together, and constitute other larger bodies. Then, these larger bodies interact with each other, with their specific natures, causing the world as it is. So, in Muʿammar's understanding, the natural processes are all traced back to constituting atoms. Atoms and larger bodies act in accordance with their natures but also independently from divine influence. On the other hand, an anti-atomist like Jāḥiẓ would also insist that things such as fire and water have specific natures that do not change (Baghdādī 1928, 336; Khayyāṭ 1957, 70). Animate and inanimate entities have intrinsic qualities that necessitate their behavior, with the exception of human free will, which is not dictated by nature (Demir 2015, 112; Jāḥiẓ 1969, I. 149, III. 372, 375, V. 89–90).

So, the distinction in their physical ontology, atomism or anti-atomism, does not lead them to differ on the essential point. Despite their differences in physical cosmologies, the Muʿtazilite theology insists that what happens in this world happens in accordance with the "natures" of things. There is an intrinsic necessity in the world. The presence of natures and, thus, necessity in the world is the basis of the intelligibility of the world.

Other Muʿtazilite theories of physical action are also based on the conviction that entities have necessitating natures. Naẓẓām, for example, proposes that things manifest their nature in their life-process by moving from potentiality to actuality (Baghdādī 1948, 87; Demir 2015, 165–169; Jāḥiẓ 1969, V. 1–13, 15–23).

[7] This line of thinking cannot be accepted in light of the modern mathematical concept of the quantitative infinity developed by Georg Cantor, Gottlob Frege, Richard Dedekind, and others. For, all kinds infinities can be encompassed by "greater" infinities.

This view is also known as the theory of latency (*kumūn*), and this process of actualization of potentialities is sometimes called manifestation or externalization (*ẓuhūr*) (see e.g. Khayyāṭ 1957, 44). This Muʿtazilite theory starts from the idea of nature and explains creation as the gradual unfolding of these natures. Beings have been created in the beginning by God and everything that is going to come out of beings is stored in their natures. The natures become manifest when the time comes. The theory also suggests that there is an intelligibility in the world process. Understanding natures makes the world intelligible.

Another important Muʿtazilite notion is "generation" (*tawallud*). One of the leading figures among Muʿtazilites, Abu al-Hudhayl, suggested that human individuals can only be the cause of the acts of which they know the modality (*kayfiyya*) (Gimaret 2004). So, our acts can be divided into two groups. First, there are acts of which we know the modality, such as putting food in our mouth. Our consciousness governs this behavior. There are also acts of which we do not know the modality, such as the digestion of the food in our stomach. In the second part, we do not govern the process with our consciousness, but simply the body processes the food without our conscious governance in each step. It is as though, as a result of our conscious choices, some natural results are generated in accordance with our choices by God. In this regard, the doctrine of generation still suggests that what is generated from our deeds, although created by God in accordance with our choices, is still our doing. We are responsible for our conscious choices and what follows from them in accordance with the nature of things. When I eat unhealthily, I would be responsible for getting sick because that sickness results from conscious choices.

So, despite the difference in terminology and physical ontologies, one can identify a shared tendency among Muʿtazilites. They preserve the intelligibility of the world through causal necessity and secure a domain for human agency that is free from divine causal influence. On the one hand, they posit a noncausal domain for freedom, as the notion of creative power (*istiṭāʿa*, *quwwa*, or *qudra*) suggests. In this domain, we can be uncaused causes of ourselves beyond divine or natural coercion. On the other hand, there is a causal domain in which natural processes occur in a necessary and, thus, intelligible way as the notions of nature (*ṭabīʿa*), causal determinant (*maʿnā*), latency-externalization (*kumūn-ẓuhūr*), or generation (*tawallud*) suggest.

The natural world, then, functions in accordance with strict causal necessities. And this world can be influenced by our free choices. Our choices are our creations; therefore, we are responsible for them. Moreover, what follows from these choices in accordance with the nature of beings is also, perhaps indirectly,

our creation. As such, human will is essential in the creation of the world. This is necessary to preserve divine justice and moral perfection.

1.2 The Islamic Occasionalist Account of Causality

The Islamic occasionalist account of causality emerges within the Ashʿarite school of theology. The school was founded by Abū al-Ḥasan al-Ashʿarī (873–935), a former Muʿtazilite. After his departure from Muʿtazilites, he used the rationalist weapons developed by his former school to defend a new theology that aimed to offer an orthodox guideline. In the following centuries, the school becomes the predominant Sunni school of speculative theology with the efforts and contributions of such major theologians and thinkers like Abū Bakr Muḥammad al-Bāqillānī (940–1013), ʿAbd al-Malik al-Juwaynī (1028–1085), Abū Ḥāmid al-Ghazālī (1058–1111), Fakhr al-Dīn al-Rāzī (1149–1209), and Sayyīd al-Sharīf al-Jurjānī (1340–1413). Throughout history, the school underwent many developments and interacted with different philosophical–theological paradigms and challenges. It has remained strong and relevant throughout the centuries and continues to do so today in fashioning Muslim thought.[8]

1.2.1 Divine Freedom and Causality

The fundamental issue for Ashʿarites appears to establish divine freedom and sovereignty. So, they reject any implication of necessity that can suggest a limitation of the divine acts. The regularities understood by our minds and senses in nature cannot limit what divine freedom and sovereignty can do. Thus, unlike Muʿtazilites, Ashʿarites reject the notion of "nature" due to its necessitarian implications. This rejection of innate necessity in the world then invites what I call a theology of possibility. The notion of possibility runs through the whole cosmos. Now, a combustion might not occur when we bring together fire and cotton, or barley can grow from a wheat seed (Ibn Fūrak 1987, 271).

It is true that in causal relationships, we observe regularities. Someone who drinks alcohol gets drunk. However, these regular conjunctions do not prove necessary connections. Our sensual observations also do not tell us who the real agent is in causal relations. Is it "natures" or God? For Ashʿarites, God causes both fire and cotton to be what they are and also the burning when the two come together. Bāqillānī presents one of the clearest articulations of this theory, where he criticizes Muʿtazilites for being "people of nature" (*ahl al-ṭibaʿ*).

[8] A good introduction to the school's history and basic theological tenets can be found in Makdisi 1962.

> People argue that they know that there is a *necessary* relationship between fire and burning or drinking (alcohol) and drunkenness. This, however, is great ignorance. For all we observe here is that when someone drinks alcohol or an object is brought near fire, there will be some changes. That person will be drunk, and that object will burn. However, we do not observe who exactly is the agent here. This problem can be understood through meticulous research and careful thinking. We are of the opinion that this is the act of an Eternal Being . . . Some also argue that it cannot be known whether this relationship between drinking and drunkenness or fire and burning is due to the *natures* of entities or to an external agent. (Bāqillānī 1987, 62)

It is a "great ignorance" to claim that one can know through sense perception and necessarily (*ḥissan wa iḍtirāran*) that the occurrences of burning and of becoming intoxicated are due to the heat of the fire and to excessive drinking. Since causal regularities do not prove a necessary connection between cause and effect, then God can create "without a reason (*sabab*) that makes it necessary or a cause (*ʿilla*) that generates it" (Griffel 2009, 127; Ibn Fūrak 1987, 131).

Later, Ghazālī (d. 1111), one of the most prominent and influential scholars in Islamic history, would reiterate the same notion, stating that the "connection between what is habitually believed to be a cause and what is habitually believed to be an effect is not *necessary* according to us" (Ghazālī 1997, 166). God can create an effect without its habitual cause, such as satiety without drinking. Cotton can transform into ashes without contact with fire. Constant conjunction of cause and effect does not prove a necessary connection. One can say effect exists *with* cause, but one cannot say effect exists *by* cause (Ghazālī 1997, 168). Observation cannot locate any necessitating connection between cause and effect. All we observe is constant conjunction. If a person who is "blind from birth and has a film on his eyes and who has never heard from people the difference between night and day were to have the film cleared from his eyes in the daytime," he would believe that "the opening of his sight is the cause of the apprehension of the forms of the colors." But when the sun sets, and the atmosphere becomes dark, he would then know that "it is the sunlight that is the cause for the imprinting of the colors in his sight" (Ghazālī 1997, 168).

So, if the natures of beings do not cause the regularity in the natural processes, then how can we explain it? Here, Islamic occasionalism introduces the notion of "habit" (*ʿāda*). Natural processes are regular and predictable because the divine acts occur in a consistent manner. God acts on self-imposed habitual patterns, which explains the consistency one observes in causal processes. The notion of "natures" is replaced by the notion of "divine habits" to secure the

intelligibility of the world. As such, the natural laws are reflections of the divine habits (Ibn Fūrak 1987, 131–132).[9]

Do these self-imposed habits negate divine freedom? For Ashʿarites, the answer is no, for they are freely chosen by God. Moreover, divine action is not limited to habitual creation. In fact, God can abolish His own habits (*naqḍ al-ʿāda*) (see e.g. Bāqillānī 1958, 50; Gimaret 1990, 459–463; Ibn Fūrak 1987, 131–134, 176–177, 272; Jabrī 2011, 144–146; Juwaynī 1969, 114; Juwaynī 1985, 61, 309; Nursi 2004, 217; Qāḍī ʿAbduljabbār 1962–1965, XV. 202). This is to say, the regularities in the world can be negated, laws can be broken, and God, as the sole causal agent in the world, can create miracles. This can be likened to a king's unusual gesture to honor his guests or messengers. Or, Ibn Maymūn (Maimonides) writes, "a king's habit is to ride a horse through the marketplace . . . but it is *possible* that he walks through" (2002, 128).[10]

Why do we believe that the relationship of cause and effect is necessary? This is because cause and effect always occur in conjunction (*iqtirān*). They are coupled together. There is always proximity (*mujāwara*) in causal relationships. Creation of cause and effect in close vicinity is, again, a divine habit (see e.g. Juwaynī 1985, 61; Juwaynī 2003, 219). This proximity leads us to believe that their relationship is necessary. However, all we can say is that they occur together.

Furthermore, proximity in space and time does not mean they cause each other. We never observe the causal glue that attaches things to each other necessarily. There is only conjunction without necessary relation. Again, such a necessity would undermine divine freedom and sovereignty. It would impose limitations upon the divine acts.

So, the rejection of the notion of "nature," the acceptance of the notion of "habit" together with the possibility of its nullification, and such concepts as conjunction (*iqtirān*) and proximity (*mujāwara*) prepare the ground for a theology of possibility. Causal relations are characterized by possibility rather than necessity. It is on the basis of this intrinsic possibility in the world that divine freedom and sovereignty are preserved. The causal necessities or the natural laws do not govern the world. They can inform us about the regularities in the world, but they do not impose a causal influence and "govern" the world. The natural processes are law-like but not law-governed. Thus, they can be nullified. A stone can levitate in the air without support, intoxication can occur without drinking, and satiety can occur without eating.

[9] The Qurʾanic verses, "there is no change in God's creation" (30:30) or "there is no change in God's words" (10:64) are usually understood to be alluding to this notion.

[10] Translation modified.

1.2.2 Atomism and Causality

A unique atomistic view of the world adopted by Islamic occasionalism also leads to the removal of the causal glue from the world. As already discussed, the notion of indivisible parts or atoms had already been present in the Muʿtazilite theology. Ashʿarites agrees with Muʿtazilites that the number of atoms must be finite. Al-Ashʿarī also argues that the Qur'anic verses such as "everything has been numbered by us" (36:12) imply that the world must be composed of a limited number of atoms that move in a vacuum (*al-khalāʾ*) (Ashʿarī 1953, 127; Dhanani 1994, 6–14; Günaltay 2008; Ibn Fūrak 1987, 202–204, 208; Juwaynī 1969, 508–509; c.f. Ibn Ḥazm 1978, V. 70). These atoms are not divisible. It is not possible "to imagine their division" for they do not have parts (Dhanani 1994, 136, fn. 126).

The Ashʿarite theology offers interesting arguments to support the idea that the number of atoms is limited and that they are indivisible. For example, if atoms are endlessly divisible, then each being would have an infinite number of atoms. An elephant and an ant would have an infinite number of parts. If both have an infinite number of parts, then what explains their different sizes? Two objects having no difference in terms of the number of homogenous atoms should be the same size. However, obviously, an elephant and an ant are not the same size. Thus, the elephant has more atoms than the ant.[11] In short, to be able to explain the difference in sizes of the objects, in fact, to be able to ground the notion of "more or less," we need to accept that the world is composed of discrete parts that are no longer divisible.[12]

The Ashʿarite theology also holds that these atoms are identical (*mutajānis/mutamāthil*).[13] This is because if these atoms had intrinsic differences, they would have distinct "natures" necessitating their behavior (see e.g. Ibn Maymūn (Maimonides) 2002, 127, 129; Nīsābūrī 1979, 133–134; Tahānawī 1996, II. 1302). Again, such necessity cannot be accepted, for it implies limitations over divine freedom and sovereignty. Thus, Ashʿarism appears to hold the homogeneity of atoms to present the world as a submissive locus of the divine action. When atoms are perfectly alike and lack any "nature," then there is no real demand or feedback arising from the constitutive parts of the world *vis-a-vis* the divine action.

[11] For different versions of this argument, please see Bāqillānī 1987/1407, 37; Baghdādī 1928, 36; Juwaynī 1969, 146; Ibn Ḥazm 1982/1402, V, 96.

[12] The conclusion here is difficult to accept in light of the modern mathematical notion of the quantitative infinity developed in the works of Cantor, Frege, and Dedekind. It is possible to place infinities in "greater" infinities.

[13] For example, Juwaynī writes, "Atoms/substances *(jawāhir)*, in the view of the true believers [i.e. the Ashʿarites] (*ahl al-ḥaqq*) are homogeneous." Juwaynī 1969, 153–154. Cf. Dhanani 1994, 118, fn. 67. See also Ibn Maymūn 2002, 120.

If these atoms are identical, how do we explain the observed multiplicity in the world? For Ashʿarites, this is because of accidents (*aʿrāḍ*) inhering in atoms (see e.g. Baghdādī 1948, 197; Bāqillānī 1986, 27; Bāqillānī 1987, 42–43; Frank 1984, 39–63; Ibn Maymūn 2002, 120–121; Juwaynī 1969, 142; Juwaynī 1985, 39; Juwaynī 2003, 129; Pazdawī 1963, 11). Although the atoms are perfectly alike, the accidents inhering in them are not. The differentiation of beings occurs due to the differences of accidents inhering in atoms. These accidents are assigned to atoms by the divine will. Atoms do not have any feedback or demand from God, for they do not have any property. As if, they are waiting to be assigned differentiating accidents in a state of perfect submission. Atoms are perfectly neutral loci of the divine action. God is the differentiator of identical atoms. And, since there is no real feedback from atoms, God differentiates atoms from each other without any reason. Thus, the differentiation in the created order can be attributed to divine preference without any differentiating reason (*tarjīḥ bi-lā murajjīḥ*).

Atoms form larger bodies under the influence of divine causality. They come together and stand side by side without interpenetrating (*tadākhul*) or including each other (Juwaynī 1969, 160–162). They can be separated and brought together under divine influence. Their relationship is not one of necessity, for they lack the proper natures that would impose certain behaviors and causal relations. The relationship between atoms is one of proximity (*mujāwara*), similar to the relationship between cause and effect. Ashʿarism sees atoms as discrete and causally inefficacious entities. The relationship of atoms is due to the divine will and power. They do not have any innate nature guiding their behavior. It is God who creates these atoms, their accidents, and their specific relations with each other. When these neutral and homogenous atoms carrying different accidents assigned to them by God come together, they form bodies with their own distinct properties.

The physical ontology depicting the micro-level events is then extended to the macrocosm. The natural world is understood in light of atoms' and accidents' absolute dependency upon the divine will and power. If the constituting parts of the world are under complete divine influence, then macrocosmic beings such as animals, mountains, planets, and stars do not have necessitating natures. They could be different than they are now. They could be in different sizes, shapes, or places. God is the absolute "preponderer," assigner, and chooser (*mukhaṣṣiṣ* or *murajjiḥ*). As He wills the atoms and their accidents without a reason, He wills locations, sizes, and all other properties of the larger bodies (Jurjānī 2012, VII. 96–97; Shahrastānī 1934, 239–240).

The atomism here is used to establish the divine will as the sole determining factor of all events at all levels. Atoms are neutral and homogenous loci for the

divine will. All beings and their properties are chosen by the divine will. And, the divine will is an uncaused cause of itself. Since there is no feedback from the created order, there is no necessity in the divine acts. The divine will permeates all levels of existence, differentiating things from each other.

Islamic occasionalism also holds that these atoms and accidents inhering in them are being recreated at each moment. This follows from the conviction that "accidents do not subsist for two consecutive moments." Now, subsistence or continuity (*baqāʾ*) in space and time is an accident. This accident should be given to atoms at all moments. This is to say atoms do not subsist by themselves, and they need to be continuously recreated. At each moment, God assigns the accident of subsistence to each atom with the divine command to "continue to exist" (*Ibqa!*) (Ashʿarī 1963, 359–360; Bāqillānī 1987, 38–39; Gimaret 1990; Ibn Fūrak 1987, 205, 208, 237, 257; Juwaynī 1985, 41; Pazdawī 1963, 12; Perler and Rudolph 2000).

Based on the idea of the constant recreation of atoms and accidents, one should conclude that the world before us is recreated anew at each consecutive moment. This also means that not only bodies are composed of discrete and indivisible parts, but also time is composed of discrete and indivisible fragments. Time is not a continuous flow, but it moves with discrete "leaps" (*ṭafrāt*).[14] These leaps are so small that we do not observe any interruptions. The atomism of space is thus transformed into an atomism of time.

As such, the world pulsates between existence and nonexistence in very high frequency, and this creates the illusion of an uninterrupted continuity. When a stone falls, its atoms and accidents are recreated in different locations at each following moment. It is true that we can study this motion and calculate the stone's position by using mathematical formulas. Mathematicity of the motion, however, does not imply causal necessity. It only shows that God creates in an orderly fashion. We can only talk about a "possible" relation between now and then, not a necessary relation.

As should be clear by now, in the world of Islamic occasionalism, there is no causal glue between cause and effect. Once we remove the causal glue between the consecutive events, then a robust sense of divine power, will, and sovereignty is conceived to be established. If space and time are constantly recreated, we cannot really establish a genuine causal connection between the two consecutive events. In fact, the notions of "cause" and "effect" do not apply here, for what we perceive as cause and effect are two distinct events created by God in conjunction with each other on self-imposed divine habits. The world

[14] The notion of "leap" is first proposed by Naẓẓām. Ashʿarī 1963/1382, 307–308, 343–344; Juwaynī 1969, 145; Shahrastānī 1961, I, 56. See also Frank 1966 and van Ess 1991–1997, 3: 224–229, 309–335.

pulsates between existence and nonexistence. The two following moments of the world process are attached to each other only by God. The preceding moment does not have any causal claim on the following moment. Only the divine habitual creation secures the regular flow of the world process, not any necessitating natures or essences. Now, it is God who brings the moments of the world together.

1.2.3 Acquisition (Kasb) and Freedom

The Islamic occasionalist tradition constructs human agency in accordance with these theological convictions and physical ontology. Human beings have the power to acquire what is created by God. We cannot create our acts, but our disposition toward an act can be an "occasion" for the divine creation of that act. The uncreated power of God remains the sole causal agent. Our created power has only a role in acquiring the created act of God (Ashʿarī 1955, 72; Ibn Fūrak 1987, 91–92; Ibn Maymūn (Maimonides) 2002, 125–126). This acquisitive power is called "*kasb*."[15] The servant's acquisitive power has no creative power. It is only an occasion for the divine creative act.

As already discussed, Muʿtazilites hold that we have a creative power that they called *istiṭāʿa*, *quwwa*, or *qudra*. For them, only through such a genuine causal relationship between us and our actions can a sense of responsibility and accountability be established and divine justice secured. Islamic occasionalism disagrees here for several reasons. It holds that assigning a creative power to the created order is a form of idolatry (*shirk*). Furthermore, the acts we normally attribute to ourselves cannot truly be owned by ourselves, for we do not know their modalities. For example, when I say, "I speak," I attribute the act to myself. However, in fact, it is God who creates the act of speaking through many muscular, cellular, and neural interactions. I do not consciously control these interactions. Then how can I be the creator of the act of speaking? The only thing that can be attributed to me is to want to speak and words come out of my mouth (see e.g. Bāqillānī 1986, 205; Gimaret 1980; Juwaynī 1985, 174; Jurjānī 2012, VIII. 162–164).[16] As Ibn Maymun (Maimonides) writes, in the instance of writing, our choice to move the pen, the motion of the pen, and the appearance of the letters on the paper are "only

[15] Perhaps, the first use of the term *kasb* in this sense can be found in Abū Hanīfa, *al-Fiqh al-Akbar*, 72–73 and Abū Hanīfa 1992, 46–48, 60.

[16] This idea was also used by Western occasionalists. Arnold Geulincx, for example, concludes "You are not the cause of that which you do not know how to bring about" (Geulincx 1893, 2: 150–151).

related to each other as regards the time of their co-existence, and have no other relation to each other" (2002, 125).

Moreover, recall that for Islamic occasionalism, "accidents do not subsist for two moments." And the acquisitive power (*kasb*) is to be conceived as an accident. And, as an accident, it would have to be recreated anew at each moment. This is to say, there is no causal relation between the acquisitive power and the effect, for both of them are being created by God. Only the notions of proximity and conjunction can be applied here. The relationship between *kasb* and the act is one of proximity (*mujāwara*) and conjunction (*iqtirān*). There is no necessary causation but only constant conjunction. Horizontal causality has no reality, it is all divine vertical causality.

The difference between Muʿtazilites' creative power (*istiṭāʿa*, *quwwa*, or *qudra*) and Ashʿarites' acquisitive power (kasb) appears to be the following. For Muʿtazilites, the creative power is causally efficacious and creative (as the name suggests), whereas for Ashʿarites, the acquisitive power can only acquire what is already created. Also, for Muʿtazilites, the creative power resides in us permanently and, thus, is *prior* to the act. For Ashʿarites, the acquisitive power is created in us in conjunction with the act. *Kasb* is, then, an occasion for the divine act and has no other role to play. Due to His self-imposed habits, God creates the chosen act in conjunction with our *kasb*. We have no causal efficacy but only a disposition toward the act.

Islamic occasionalism is aware that it is a theological necessity to have a basis for human responsibility. Otherwise, one falls into total determinism (*jabr*). However, what they mean by *kasb* is not always intelligible. Despite the efforts to ground human agency on the basis of acquisitive power, it is not clear whether this power is truly free as an uncaused cause of itself. If it is recreated anew at each moment by God, and if it is caused by God, then how can it be free? If it is created in conjunction with the act, then what role can it play in choosing this or that act? Perhaps, for these reasons, al-Ashʿarī himself appears to acknowledge that even this acquisitive power is under the influence of the divine will and power. He writes, for example, "God creates acquisition for his servants, and *he is also powerful over their acquisition*" (1963, 552) and, "there cannot be, under the authority of God, any acquisition that God does not will" (1967, 103). Passages like these suggest that acquisition (*kasb*) is not an uncaused cause. If human will is not an uncaused cause of itself, then it is not free. As such, the Islamic occasionalist account, while aiming to introduce the divine causality to all levels of existence and to make the immensity of God concretely present in the world, appears to lose creaturely freedom.

1.3 The Islamic Participatory Account of Causality

It will be argued that another major and systematic approach to causality can be found in the Islamic philosophical and mystical writings. I will call this approach the Islamic participatory account of causality. In my view, major philosophers such as Ibn Sīnā (980–1037), Ibn Rushd (1126–1198), Shihāb al-Dīn Suhrawardī (1154–1191), and Mullā Ṣadrā (1571–1640) and major Sufi metaphysicians such as Muḥyiddīn Ibn ʿArabī (1165–1240), Ṣadraddīn al-Qūnawī (1210–1274), and Dāwūd al-Qayṣarī (1260–1350) offer accounts that move toward a participatory understanding of causality.

I have examined the emergence and development of participatory account of causality in the writings of these scholars extensively elsewhere.[17] I will only provide a very brief summary here.

1.3.1 Existence and Causality

The Islamic participatory view of causality can best be understood within the larger metaphysical context it is offered. The distinction between the Necessary Existent (*wājib al-wujūd*) and the possible existent (*mumkin al-wujūd*) prepares the ground for a distinct view of the divine and creaturely causality. And this distinction itself is based on a careful examination of the notion of existence (*wujūd*).

How can we think about existence? One of the first careful examinations of the question of existence can be found in Ibn Sīnā's writings. We are surrounded by existents. There are mountains, trees, tables, and rivers. These existents are different from each other. A mountain is different from a table, and a table is not a tree. What distinguishes existents from each other is their essences (*māhiyya*). In the case of a tree, this essence might be called "tree-ness." The actual presence of this tree before my eyes is called its existence (*wujūd*). Therefore, an existent is a combination of essence (*māhiyya*) and existence (*wujūd*). An actually existing tree is a combination of "tree-ness" and existence. By its essence (tree-ness), the tree is differentiated from other objects (rivers, rocks, etc.). By its existence, it is present to us here and now. As such, existence is the most universal category. "There is nothing more general than existence" (Ibn Sīnā 2005, 10). Essence is the principle of differentiation. "Each thing has a reality proper to it (*ḥaqīqa khāṣṣa*), namely its essence." The definition of an object is "nothing other than the essence of the thing defined" (2005, 180). A definition gives us the essence or "whatness" of the object. Existence, however, is not included in the definition, for it is not part of an object's essence.

[17] Koca 2020.

So, essence answers to *what a thing is*, while existence answers to that *it is* or that *it exists*. The mystery of essence and the mystery of existence are two distinct things.[18]

Then, Ibn Sīnā famously distinguishes among three modes of existence: necessary, possible, and impossible. The Necessary Existent "is an existent whose non-existence entails impossibility (*muḥāl*)" (2005, 262). The possible existent (*mumkin al-wujūd*) is "an existent whose existence does not entail impossibility." The Necessary Existent exists due to itself (*wājib al-wujūd bi-dhātihī*). The possible existent is also necessary; otherwise, it would not exist. But the necessity of the possible existent is due to something other than itself (*wājib al-wujūd bi-ghairihī*) (2005, 263). A possible existent is called possible because it is caused to exist by something other than itself – the Necessary Existent. There is also a third category, the impossible existent (*mumtaniʾ al-wuǰūd*), whose existence entails impossibility, such as a second necessary existent.

Key to our discussion is Ibn Sīnā's definition of the First as *pure existence*. As he writes, "He is pure existence (*muǰarrad al-wuǰūd*) with the condition of negating privation (*ʿadam*) and all other descriptions of Him. Moreover, the rest of the things possessing essences are possible, coming into existence through Him" (Ibn Sīnā 2005, 276). The Necessary Existent is that whose essence is existence, nothing but existence. It is *pure existence*. Anything that is not pure existence is a possible existent. So, if a possible existent does not have existence as part of itself, then it must be receiving existence from another source. As Ibn Sīnā writes, "everything that has an essence is caused . . . The rest of the things other than the Necessary Existent have essences. And it is these essences that in themselves are possible in existence, existence *occurring to them* externally" (2005, 276).

Thus, the Necessary Existent whose essence is pure existence is the self-subsistent uncaused cause of everything. Anything that has an essence would exist as an actual entity due to It. A possible existent without existence is a mere possibility. The bestowal of existence from the Necessary Existent actualizes possible existents. Thus, all possible existents come into existence by participating in the pure existence of the Necessary Existent to the extent allowed by their essences.

Another key point for discussion is the following. All divine qualities are traced back to the pure existence of the Necessary Existent. To say *wujūd* is to say all divine attributes. For example, the Necessary Existent is *pure actuality*,

[18] There are many studies examining the fundamental distinction between existence and essence. See, for example, Rizvi 2000. For precedents for this distinction in Farabi, see Rescher 1963. For a good overview, see Rescher 1966.

because since "He is perfect in existence and nothing in Him awaits completion" (Ibn Sīnā 2005, 292).[19] The First is *pure good* (*khayr maḥḍ*), for pure and actual existence is free from nonexistence. And, if evil is the privation of existence, then pure existence is self-evidently good and is desired for itself. As Ibn Sīnā writes, "what in reality is desired is existence. Existence is thus pure good and pure perfection" (2005, 283). Similarly, other attributes follow. The Necessary Existent has no beginning (*al-awwal*) because nothing precedes It. It is the "ground" or "substance" because It is not a predicate inhering in something else. It has no end (*al-ākhir*) because Its nonexistence is impossible. It is the "principle," the "creator," and the "all-powerful" (*al-qādir*) because everything else follows from It. It is "life" because It apprehends and enacts. It is "generous" because It bestows existence. It is "love," for It apprehends Its own perfection and loves it. It is pure beauty, good, splendor, and generosity (*jamāl wa-bahā al-maḥḍ*). It has no genus (*jins*), no definition (*ḥadd*), no demonstration (*burhān*), no quantity (*kam*), no quality (*kayf*), no place (*ayn*), no partner (*sharīk*), no contrary (*ḍidd*) (Ibn Sīnā 1985, 263–265; Ibn Sīnā 2005, 291–299).

Perhaps the presence of the divine attributes in the pure existence of the Necessary Existent can be likened to the presence of different colors within the colorless light. All colors are present and concealed within the undifferentiated unity of colorless light. These colors become manifest only when different objects are illuminated by the colorless light. Similarly, pure existence conceals all divine qualities within itself. When existence is given to possible existents, these qualities become manifest. What is "hidden" within the abundance of pure existence becomes apparent in possible existents to the extent allowed by their essences and capacities.

Now, the fundamental metaphysical convictions directly relevant to our discussion here are that (1) *the Necessary Existent is pure existence*, (2) *the divine pure existence is the source of all divine qualities in that to say pure existence is to say all divine qualities* (power, will, knowledge, etc.), and (3) *the Necessary Existent shares Its existence, or Itself, with possible existents*.

These principles lead us toward a participatory account of causality. Beings exist and act by participating in the divine existence and actuality. The metaphysical principle of all acts in the world becomes divine *wujūd*. God becomes most intimately and universally present in all beings through their innermost principle, existence. Perhaps, an old analogy can be used here and this can be likened to the relationship of ocean and waves. The ocean can be conceived as the ground of waves and waves as individuations, instantiations, particularizations of ocean. Waves exist due to ocean, but not *vice versa*. The two also cannot

[19] Also see Ibn Sīnā 2005, 299.

be absolutely separated, for waves participate in the reality of ocean. Similarly, the "ocean" of pure existence grounds all acts and relations between beings. All beings become what they are by participating in pure existence to the extent allowed by their essences. If pure existence is the same as all divine qualities such as consciousness, power, and freedom, then beings become conscious, free, and causally efficacious agents by participating in divine nature.

1.3.2 Physical and Metaphysical Causality

It is important to see that participation of beings in divine existence does not negate causal efficacy and agency in the world, it grounds it. It can also be argued that participatory view of causality removes the competition between the divine and natural causality. Perhaps, this is why Ibn Sīnā was able to approach the question of causality from two perspectives: physical and metaphysical. This stems from his conviction that sciences can be categorized into three major kinds: the natural (*al-ṭabīʿiyya*), the mathematical (*al-riyāziyya*), and the divine (*al-ilāhiyya*). The subject matter of natural science is to examine the principles of the "motion and at rest" (*al-ḥaraka wa-l-sukūn*) in the material bodies. The mathematical sciences deal with quantities so far as they are abstracted from the material bodies (Ibn Sīnā 2005, 7), while the subject matter of metaphysics is *existence* (Ibn Sīnā 2005, 2).

Now, from the perspective of natural and metaphysical sciences, the question of causality can be approached differently. If we study the world from the natural science perspective (*al-ṭabīʿiyya*), causality will be understood in terms of "motion and rest." Aristotelian perception of four causes provides a useful framework for thinking about this type of causal relation among material bodies. The metaphysical perspective, however, should centralize the notion of existence *qua* existence. See, for example,

> Causes, as you heard, consist of form (*ṣūra*), element (*ʿunṣur*), agent (*fāʿil*), and purpose (*ghāya*). By the formal cause, we mean the cause which is part of the subsistence of the thing and in terms of which the thing is what it is in actuality. By the elemental cause [we mean] the cause that is part of the subsistence of the thing, through which the thing is what it is in potency and in which the potentiality of existence resides. By agent [we mean] the cause which bestows an existence that is other than itself . . . This is because the metaphysical philosophers (*al-falāsifa al-ilahiyyīn*) do not mean by "agent" only the principle of motion, as the naturalist mean, but *the principle (mabdaʾ) and giver (mufīd) of existence*, as in the case of God with respect to the world. As for the natural efficient cause, it does not bestow any existence other than motion in one of the forms of motion. By "purpose"

> we mean the cause for whose sake the existence of something different from it is realized. (Ibn Sīnā 2005, 194–195)

So, the "agent" here is not "only the principle of motion" or the first mover of Aristotle. It is "the principle (*mabdaʾ*) and the giver (*mufīd*) of existence." Without the bestowal of existence, we cannot begin to conceive causal relations between possible existents. This is because causality organizes the relationships of actual existing beings. In other words, beings need to receive existence from the Necessary Existent to be able to interact with each other through natural causality. As such, the bestowal of existence is the constant background of all natural interactions. Metaphysical causality does not negate natural causality, it becomes the very source of it.

Ibn Rushd provides a similar perception with an accentuation of the dimension of divine actuality. The First is pure existence-actuality for Ibn Rushd. Creation can be understood as an eternal move from possibility to actuality. The First shares Its actuality with possible beings and actualizes them. As such, the divine pure actuality is the ground of all natural acts. Things are actualized by receiving their share from the First and by participating in Its actuality. As Ibn Rushd states, "the world is an act, or a thing whose existence is consequent upon this [the First's] act" (1954, 156). The divine actuality remains as the background of all acts. It is present in all acts. The divine pure actuality is "attached" and "everlastingly mixed with its objects." Therefore, "it is in this way that one must understand the relation of the First to all existents" (1954, 199). The causal agency of existents is constructed through their participation in the divine existence-actuality.

Again, Ibn Rushd's view here does not contradict natural causality, in my view. It only places natural causality within the larger framework of metaphysical causality. On the one hand, he holds that everything must have a physical cause for knowledge of the world and God depends on this. On the other hand, God, the pure existence-actuality, constantly existentiates-actualizes essences-possibilities. Thus, God is present in all causality in that all possible existents are actualized by participating in the pure actuality of the First.

1.3.3 Sufi Metaphysics and Causality

It can further be argued that the participatory view of causality is not unique to Muslim philosophers. In Sufi metaphysics, one finds similar approaches. Prominent Sufi metaphysicians such as Ibn ʿArabī, Qūnawī, and Qayṣarī also start from the notion of existence (*wujūd*) when they are formulating their

perception. Ibn ʿArabī agrees with the fundamental distinction between the necessary and the possible. As he writes:

> Its (the possible existent's) existence is [entirely] derived from something other than itself. The connection, in this case, being one of *dependence*. It is therefore necessary that . . . the Support [of the possible existent] should be essentially and necessarily due to itself, self-sufficient, and independent of any other. It *bestows existence* from its own essential existence on the dependent existent, in this way It becomes related to it. . . . It follows that the originated should conform to all the names and attributes of the Cause [origin], except that Its being self-sufficient. This (the self-sufficiency) does not belong to the originated existence. The possible existent's necessity derives [entirely] from other than itself. (1980, 54)[20]

Ibn ʿArabī also agrees that "He is the same as existence (*fa huwa ʿayn al-wujūd*)" (2017, 671). The Real is pure existence (*al-wujūd al-maḥḍ*) (2017, 167–168). The Real is also infinite because "there is no limit for the Real's existence" (2017, 745). The Real is then *pure and infinite existence*. Now, to be infinite is to have all possibilities. In other words, all possibilities are concealed in the pure and infinite existence of the Real. These possibilities eternally subsist as unchanging realities in God (2017, 606). The terms fixed archetypes (*al-aʿyān al-thābita*), essences (*al-māhiyya*), knowns (*al-maʿlūmāt*), fixed things (*al-ashya' al-thābita*), and possibilities (*al-mumkināt*) refer to these eternal and unchanging realities subsisting in the Real.

The notion of "permeation of existence" (*sarayān al-wujūd*) or "expansion of existence" (*inbisāṭ al-wujūd*) is also introduced at this point. *Wujūd*, then, permeates upon essences-possibilities to existentiate-actualize them. As Ibn ʿArabī describes, one who has real gnosis can see "the permeation of the Real with existence upon forms (*wa raʾā sarayān al-Ḥakki bi-l-wujūdi fi-ṣ-ṣuwari*)" (2017, 1166). At this juncture, the bestowal of existence becomes the constant background of all acts in the world. The expansion of existence from the Real to the created order existentiates essences-possibilities-knowns in this-here world. Through our participation in *wujūd*, and therefore in all divine qualities, we become causally efficacious.

It is due to this participatory view of causality that Ibn ʿArabī criticizes the Ashʿarite and Muʿtazilite views on creaturely freedom and causal efficacy. For Ibn ʿArabī, both schools are functioning on a dualist ground in that they make an absolute separation between divine freedom and human freedom. This mistake stems from "the veil of *kasb* (acquisitive power)" for Ashʿarites and from attributing "the creation of acts to man" for Muʿtazilites (1911, IV. 62). Both

[20] Translation is modified.

theories start from a wrong assumption. For Ibn ʿArabī, there is but a single knowledge, will, and power. These qualities are all hidden within the purity of existence. When God bestows existence upon essences-possibilities, these qualities are shared with the created order. So, instances of knowledge, will, and power are all manifestations of the bestowal, permeation, and expansion of *wujūd* to the created order. So, we exist by participating in God's existence. We manifest the divine qualities to the extent we participate in the divine existence. By participating in *wujūd*, we become qualified with such divine qualities as knowledge, will, and power. And, by participating in divine freedom, we become free. So, this participation does not negate our freedom and causality. It becomes the very ground that makes them real. This is why, for Ibn ʿArabī, the revelation, rational proofs, and spiritual witnessing see both the servant and God as the source of the act.

> There is a partnership between God and the servant in acts. There is no rational proof against this. There is also no textual proof attributing acts exclusively to God or the servant. We have three sources of knowledge: unveiling (*kashf*), law, and reason (*ʿaql*). And none of these sources attribute an act to only God or to only the servant. (1911, V. 244)

One can also find a similar approach to causality in the Illumunationist school (*Ishrāqiyyūn*). Suhrawardī's *continuous-cum-gradational* ontology suggests a participatory theory of causality. God and the world are not two things standing apart from each other. The two constitute a single reality that is differentiated according to the intensity of light. There are degrees of light, but there is no separation. All entities "participate (*madkhulun*) in the luminous reality" (1999, 85). As such, the creaturely causality is not separate from the divine causality and freedom. Once again, beings remain causally efficacious, although the divine light of existence remains the basis of all causal activity.

Mullā Ṣadrā offers a similar participatory perception of causality. He writes, for example, "existence, insofar as it is existence . . . *is the agent of all agents, the form of all forms, and the goal of all goals*" (1981, I. 54). Existence is the source of all acts. Ṣadrā sees all beings as instantiations of the all-encompassing reality of *wujūd*. As such he defends a *continuous-cum-gradational* ontology which we see in the others. Furthermore, God is conceived as pure existence and actuality. With the permeation of *wujūd*, we move from being mere essences-possibilities that cannot smell "the perfume of existence" by itself to being actualities in the world *in concreto*. Because the reality of *wujūd* is "full realization, actuality, and manifestation" (1981, I. 259), to receive *wujūd* is to participate in *wujūd*, and to participate in *wujūd* is to become actual and real. Again, the divine actuality grounds our actuality. The permeation of *wujūd* upon

essences is the basis of our life, knowledge, power, and freedom, thus our causal efficacy.

The participatory account of causality appears to be the natural conclusion of the centrality of the notion of existence (*wujūd*) in Islamic philosophy and spirituality. Once the Necessary Existent is conceived as pure existence and possible existents are seen as its individuations, God becomes present as the innermost principle of every being. We exist and act by participating in the divine existence. There is neither real separation nor complete identification between the pure and absolute existence of God and the contingent and delimited existence of the world. When there is no absolute separation, the causal efficacy and freedom of beings are established through participation in the divine reality. We are now causally efficacious and free by participating in the divine causality and freedom.

1.3.4 Existence-Essence and Freedom

How do the Islamic participatory accounts establish creaturely freedom? Again, the question can be approached by starting from the notions of existence (*wujūd*) and essence (*māhiyya*). Let me examine each one separately.

(1) One way of establishing freedom in the created order starts from the notion of existence. We already discussed that the notion of "permeation of existence" (*sarayān al-wujūd*) or "expansion of existence" (*inbisāṭ al-wujūd*) leads to a participatory view of God and the world. Recall also that such divine attributes as intellect, will, and power are conceived as different aspects of the divine pure and infinite existence. The First's essence is pure existence, and it is in the purity of existence that all divine qualities are found.

Now, if God is pure existence and if pure existence is the source of all divine attributes, then when God shares existence, God also shares divine qualities as concomitants of pure existence, including consciousness and freedom. And these qualities ground human agency. To bestow existence is to bestow consciousness and freedom. We are free by participating in divine freedom. As such, human freedom is not negated by all-permeating divine presence, it is affirmed by it. The divine agency does not annihilate human agency or compete with it. It becomes the very basis of human agency.

It is important to see that this view of human freedom is offered within a *continuous-cum-gradational* ontology. There is neither separation nor identification between God and the world. All beings are instantiations of the all-encompassing reality of *wujūd*. The intensity or diminution of existence in a being distinguishes it from God and other beings. In an ontological context like this, we become qualified with the divine qualities by way of *participation*

and gradation. As Qayṣarī writes, "since the limited (*al-muqayyad*) things are manifestations of the absolute existence, the divine qualities are attributed to them by means of *participation* (*bi-l-ishtirāki*) and by way of *gradation* (or *analogy*) (*ʿalā sabīli-l-tashkīk*)" (1963, 25. 14–15).

Perhaps this can be likened to the radiation of light from the sun. The radiated light loses some energy as it travels away from its source. It gets feebler and feebler. However, feeble light is still light, although it is not as luminous as the light in the source. The difference between the radiated light and the light in the source is one of intensity and diminution. Similarly, the divine light of existence (*nūr al-wujūd*) radiating from God illuminates-existentiates possible beings. The light of existence becomes delimited in essences of beings; it gets eroded, so to speak. However, this erosion of the divine light of existence in beings does not suggest a separation. Feeble light is still light, although it is not the Absolute Light. Within this continuous-cum-gradational metaphysical ontology, possible existents become qualified with the divine qualities by way of *participation and gradation*. They assimilate the divine qualities to the extent allowed by their capacities (*istihqāq*) or essences. It is precisely here that one can say a being is free by participating in divine freedom to the extent allowed by its essence. Divine freedom does not annihilate or compete against our freedom. It becomes the very ground of it.

(2) Another way to establish freedom in the created order can start from the notion of *essence* (*māhiyya*). Recall that individual existents receive existence from God in accordance with their essences. These essences are also referred to as capacity (*istihqāq*), right (*ḥaqq*), particularity (*khusūsiyya*), receptivity (*infiʿāliyya*), possibility (*imkān*), potency (quwwa). All of these terms imply that existence (*wujūd*) becomes individualized in possible existents in accordance with their receptivity and capacity. So, the bestowal of existence is not an arbitrary process. There is a certain reciprocity. The world is not a blank page, so to speak. The world stands before the bestowal of *wujūd* with its own right and receptivity.

How? It can be argued that essences-possibilities hold a certain priority before the divine creative act. They can be conceived as "uncreated (ghayr majʿūl) capacities" concealed within the divine reality. And, "it is with this (uncreated) capacity that beings accept *wujūd* from the Real" (Qūnawī 2014, 24). As such, the uncreatedness of our essences can be the source of our freedom. It is true that God is their ground, and from within the divine reality, they emerge. However, despite their dependence on God, they can be conceived as not being determined by God. It is in this sense that they are "uncreated." God is the ground of essences-possibilities, but God does not determine what type of essence a possible existent has.

The idea of the uncreatedness of essences can also be approached from the perspective of the divine knowledge. God knows all essences-possibilities.

And, as the objects of the divine knowledge, essences share in the divine eternity. I mean, God is necessarily and eternally omniscient, and thus, essences existed in the divine knowledge eternally. The key point to our discussion here is that God does not make essences-possibilities what they are. It only knows them as they are. For, *the knowledge follows the known* (*al-ʿilmu yatbaʿu al-maʿlūm*). The known must have a certain priority in their relationship with the divine knowledge, for it is the known that gives the divine knowledge its content. As Ibn ʿArabī writes:

> God knows things as they are in themselves. Because the knowledge follows the known (*al-ʿilmu yatbaʿu al-maʿlūm*), the creation of a possible being follows knowledge of that being. *The known precedes the knowledge*. The divine knowledge knows possible beings as they are in their nonexistent condition, in a state of fixity. Therefore, *what gives knowledge to God is the known itself*. In this case, God can speak to one in the following way: "this is from you, not from me. I would not know you as you are, if you were not what you are. (1911, VII. 41)

The divine knowledge does not cause the known, it is caused by the known, for "*what gives knowledge to God is the known itself*." The divine knowledge relates to something that precedes itself, and then, God existentiates the world in accordance with this knowledge. As such, the divine knowledge does not negate creaturely freedom, it actually grounds it.

This is to say, we receive existence from God in accordance with our uncreated and uncaused essences, capacities, and possibilities. In this sense, we can be seen as uncaused cause of ourselves and, thus, free. God knows and existentiates essences, but God does not determine what kind of essence a being has. Although we ultimately depend on God for our existence, we remain uncaused with regard to our essence. As such, co-eternal, uncreated, and uncaused essences-possibilities can be perceived as the ground of creaturely freedom, agency, dignity, and value.

In short, freedom is established through our participation in the divine reality. The First is free due to Itself, and we are free due to the First. As Rūmī aptly summarizes, "God's free will has given existence to our free will / His free will is like a rider beneath the dust / His free will creates our free will / His commands are founded upon a free will within us" (1925–1940, V. 3087–3088).

2 Divine Causality and Modern Science

In the next sections, I will consider the three Islamic accounts of causality examined in the first section within the context of the modern discussion on the reconciliation of religious and scientific claims about the nature of the world.

My goal here, however, invites the following question: How can one judge the viability and strength of an account of causality for the task? Let me turn to this question.

2.1 The Question of Divine Causality

A quick look at the recent discussions on the topic of the divine causality and science reveals that there are both scientific and theological challenges for the task. Some theologians offer a helpful distinction between "general divine action" and "special divine action" (Saunders 2002, 21; cf. Draper 2005, 281). General divine actions are "those actions of God that pertain to the whole of creation universally and simultaneously. These include actions such as the initial creation and the maintenance of scientific regularity and the laws of nature by God" (Saunders 2002, 21). Special divine actions can be described as "those actions of God that pertain to a particular time and place in creation," such as miracles and religious experiences (Saunders 2002, 21).

As it pertains to special divine action, the difficulty is obvious. Special divine action proposals suggest interruptions in regular causal patterns. This conflicts with the most basic scientific assumption that the natural processes are consistent, regular, and predictable. And it is precisely on the basis of this assumption that science went a long way in explaining natural events in terms of causality. It can also be added that special divine action suggests some a priori limits to scientific explanations that are provided on the basis of the principle of uninterrupted continuity of causal relations. There are also theological issues. Special divine action trusts the gaps in causal interactions to establish divine action (the God of the Gaps). This appears to suggest excessive anthropomorphism in understanding divine agency in that, in a similar way to human agency, God competes against other causes and is reduced to the level of other causes. There are also issues related to lack of justice and theodicy in that the abundance of evil and injustices in the world is difficult to reconcile with a conception of God who can change the course of events easily by acting in "special" ways (see e.g. Wiles 1999, 16–17). General divine actions may also elicit criticism depending on how one understands them. If general divine action is understood in the sense that God causes everything, then there is no feedback and agency on the part of the created order vis-à-vis the divine action. If we take away real agency from the world, God becomes responsible for all events. This raises many difficult questions concerning freedom, causal efficacy, moral responsibility, and evil. Another major difficulty is to reconcile general and special divine action models (Saunders 2002, 23–36).

So, there appear to be two main issues; one needs to be tackled here. The proposed ways to think about divine causality should *not* be a *science stopper*. They should also be strong enough to respond to theological difficulties. Attempts have been made to address this challenge in modern theological discussions. The major tendency one can identify in these discussions is to utilize modern scientific theories such as quantum mechanics, chaos theory, emergence, and so on, to argue for the divine action in nature without the disruption of regular natural processes (see e.g. Barbour 2000; Peters 1998).

Theologians such as Arthur Compton, Robert Russell, and Nancy Murphy argue that quantum mechanics can allow us to think about divine action without violating the strict regularities in the world (see e.g. Murphy 1997; Russell 1995). For these scholars, the probabilistic laws of quantum mechanics suggest that indeterminacies are fundamental aspects of nature. Perhaps, then, we can think about God "realizing one of several potentials in the quantum system," thus changing the direction of the quantum system. At the end of this process, the wave function collapses into one desired possibility rather than the other. As such, "God's action will remain hidden from science" (Russell, 2006, 587). Basically, the openness in quantum systems allows us to think about divine action without negating natural causality. If the quantum system itself is causally open, then the changes in the quantum level can give rise to changes in the macro level without violating the causality. For example, a change in quantum level might affect a DNA molecule, and this might cause certain macro-level changes through genetic mutations that can be amplified in an organism's evolutionary trajectory (Murphy 1995, 344–348).

Some proposals start from chaos theory. Nonlinear systems can be extremely sensitive to initial conditions. Even a very small change in the initial conditions can change the whole outcome, as suggested in mathematical descriptions of chaotic systems. Theologians like John Polkinghorne believed this feature may allow us to think about divine action. Given our inability to know all initial conditions, chaotic systems remain incalculable for us. Namely, an infinitesimal input changes the whole outcome without adding extra energy to the chaotic system. So, one might influence the direction of a chaotic system in a scientifically undetectable way. Here, Polkinghorne suggests, we might think of God as adding these small inputs and, thus, realizing one output rather than the other (see e.g. Polkinghorne 1989, 1999, 2002). This would not violate the principle of causality yet would allow us to think about the divine influence.

Some theologians focus on emergence theory and system biology to argue for divine presence and causality. Scholars such as Arthur Peacocke and Philip Clayton read these theories in a way that rejects scientific reductionism that suggests that upper-level can always be explained in terms of lower-level

interactions. In a reductionist approach, biology can be reduced to chemistry and chemistry to physics. Emergence theory, however, appears to suggest that there is an irreducibility between these levels. Supervenient properties that "emerge" from lower-level interactions cannot be reduced to them. Consciousness, for example, depends on molecular interactions in the brain, but it is not reducible to them. Moreover, the natural process can be understood from the top-down as well as from the bottom-up. Causality works in both ways. The emergent properties can exercise top-down influence on lower levels. Consciousness, although it depends on lower-level interactions, might causally influence brain activities as an independent causal agent. Once we establish the independence and irreducibility of human consciousness to lower levels of physical interactions, then, one can argue, God can influence human consciousness without undermining the physical causality. Consciousness can be seen as "upwardly open to the influence of the Creator Spirit" (Clayton 2002, 277). For example, an idea of genius such as Einstein's special relativity, Kant's critical philosophy, classical harmony, Sufi poetry, and so on can be seen as signs of "divine lure" and "divine guidance and creativity." Moreover, through the openness of consciousness toward God, one can conceive that the cultural world is also open to the divine influence, for these ideas spread through a large number of minds and shape the world (Clayton 2002, 276–277; also see Clayton 1997, 232–269; Clayton 1999, 290; Clayton 2004, 263–264; Peacocke 1993, 159–160; Peacocke 2004, 105–106).

There are certain difficulties in these proposed solutions, a few of which can be mentioned in what follows.

First, these proposals appear to argue for divine action "with causal spaces in which God could act" (Clayton 1997, 212). The intrinsic presumption is that God competes against other causes and can only influence the world by pushing the causes aside or working in open spaces where other causes do not exist (Tracy 2006, 608). But, is not this reducing God to the level of other causes? If so, we are given a picture of God who conceals Himself by acting at the quantum level by introducing infinitesimal inputs or by making infinitesimal changes in the initial conditions of chaotic systems. If we can think about the divine influence *only* in these domains, then this leaves us with a very limited way of apprehending the divine presence in the world processes.

Furthermore, the perceived causal openings may actually be closed up by advances in scientific knowledge. For example, in regard to chaos theory, advancements in science and technology may provide us with precise knowledge of initial conditions and, therefore, render chaotic systems more calculable. And, if we argue for divine action by trusting in spaces where other causes presumably do not exist, are we, then, not setting some a priori limits to scientific research?

Second, the scientific theories are tentative. Thus, theological solutions that are based on a current state of a scientific theory may also be offering only tentative solutions. Perhaps, one can argue that certain scientific theories are not tentative but established facts, such as the laws of nature, the fact that the earth revolves around the sun, and the cosmos is fine-tuned for life, and so on. This is true. However, the proposed theological solutions mentioned in the preceding pages revolve around theories that can still be in a state of development, not around the established facts.

Moreover, a scientific theory often allows itself to have multiple philosophical and theological readings. A well-known case would be the quantum theory. In the case of quantum theory, both deterministic and indeterministic interpretations are possible and available. The theological interpretations examined in the preceding pages are based on a particular indeterministic reading. However, deterministic readings of quantum theory may perhaps turn out to be more probable with further scientific advances, and this may easily invalidate a theological project based on quantum indeterminacy. Again, we end up with the same problem of tentativeness in the proposed solutions.

Third, even if one accepts a particular interpretation of a given theory, theological problems appear to remain. For example, in the case of quantum mechanics, the Copenhagen interpretation allows indeterministic interactions at the level of subatomic particles. However, according to this interpretation, the probabilistic nature of the subatomic world is also washed out in the more deterministic domains of the physical world. Probabilistic laws still appear to function as "laws" in that, although they may not determine the particular case, they do lead to emergence of strict regularities in the world. So, if God acts at the quantum level, this influence would be eliminated by strict regularities or it would be seriously limited. God would still have to act within the statistical regularities. Then, how can one affirm the emergence of special divine actions in the world, which goes beyond strict regularities? Or, how can one reconcile general and special divine actions in accordance with this model?

Similarly, proposals arguing for divine influence on human consciousness through "divine lure," invitation, guidance, and inspiration may also be susceptible to serious challenges. First, again, the underlying assumption here appears to suggest a competition between God and other causes reducing God to the level of them. Second, if the divine influence is allowed only on consciousness, then how do we conceive its presence in the interactions of purely material beings? Or, how do we conceive such influence if, according to contemporary evolutionary theory and cosmology, there were no conscious beings for God to influence during the most of the cosmic history?

What we can safely say here is that the question of reconciliation of divine and natural causality remains unresolved. The proposals are interesting but are also open to criticism, rendering this an ongoing and vibrant debate.

2.2 The Challenges of a Reconciliation

How can we interpret the convictions of Islamic tradition on causality within the context of this vibrant debate? Can it sustain the certainty about the divine presence without diminishing scientific rigor? Can it establish a sense of human agency and freedom while affirming strict regularities, natural laws, and causal explanations? How can it approach the issue of miracles?

Our examination indicates that there are both scientific and theological challenges, and the proposed account of causality should be strong enough to encounter them. A list of these challenges can be offered here.

First, there is *the question of method*. I mean, *the proposed model of causality should not set a priori limits to scientific research*. This is also to say that it should not suggest an interventionist model of divine action. Interventionism simply does not appear to be compatible with science that starts from the assumption that natural processes are consistent and predictable and that there are no inexplicable "gaps" in causal processes. Science cannot truly sacrifice this fundamental principle without annulling its distinct character. Modern science operates on the basis of the uninterrupted continuity of causality. Even if one encounters anomalies, they are investigated with the assumption that they may still turn out to be part of causal regularities resulting from the known and unknown laws of the nature. And, precisely, on the basis of this methodology, science went a long way toward explaining nature and implementing technology. So, a theory of causality that can sustain the divine presence without taking away scientific rigor by setting a priori limits would have an obvious advantage.

Second, there is *the question of miracles*. The proposed model should be able to account for miracles without turning them into *science-stoppers or metaphors*. By miracles, I simply mean extraordinary events mentioned in the foundational texts of Islamic tradition such as the miraculous uses of Moses' staff or blazing fire turning into "coolness and safety" for Abraham (Qur'an 21:69). The notion of miracles was heavily debated in Islamic intellectual history. There appears to be an agreement among major theological and philosophical schools that these extraordinary events were at work in history. So, turning miracles into mere metaphors may not be an option within the specific context of Islamic tradition. However, one can also find different approaches regarding whether these extraordinary events are

explicable by natural causality or are supernatural, whether they are extremely rare perhaps occurring once in the universe's lifetime or are more frequent such that they can happen to anybody at any time. These debates would be relevant when we contemplate whether a theory of causality can address the challenge here.

Third, there is *the question of freedom*. *Freedom* is understood in this study as a being's capacity to be an *uncaused cause* of itself. As such, it is closely related to the question of causality. So, *if a being has genuine freedom, its behavior would not be fully determined by the antecedent causes*. The proposed model of causality should be able to affirm *creaturely freedom*. For, without creaturely freedom, notions such as human autonomy, moral agency, responsibility, and justice appear to collapse. On the other side of the issue, there is *divine freedom*. This, also, cannot be lost, especially within the specific context of Islamic revelation, which robustly emphasizes the divine will and freedom. Hence, I believe the proposed model of causality should be able to secure freedom both in the world and in God.

Fourth, there is *the question of the divine presence*. I mean, *the proposed model should be able to secure a strong sense of the divine presence*. For, a distant God who is at the beginning of a long chain of causality as the first mover, or an uninterested God who creates the world like an architect and then lets it go, or a God who returns from time to time to fix the world like a repairman would likely not be a viable option, especially when one considers historical convictions of the Islamic philosophical, theological, and spiritual traditions about the active, robust, and uninterrupted presence of God.

I am aware that some of what I listed can be conceived as theological concerns rather than scientific concerns. The notions of miracles, the divine presence, or even freedom can usually be fully irrelevant to the scientific study of the world. However, since they are essential to most religious traditions, in general, and Islamic tradition, in particular, a viable option should be able to secure the rigor of scientific methodology while accommodating these essential theological convictions, in my view.

Thus, in my view, the proposed account of causality should be strong enough (1) to preserve *scientific rigor* without imposing a priori limits to scientific research or falling into *interventionism*, (2) to account for *miracles* without turning them into science-stoppers or metaphors, (3) to secure the *divine and creaturely freedom* without sacrificing the causal rigor in the world, and (4) to establish a strong sense *divine presence* in the world. Now, I will turn to discuss the viability of Islamic accounts of causality examined in the first section in terms of their strength in encountering these four critical challenges

3 The Muʿtazilite Account of Causality and Science

3.1 The Question of Method

Can the Muʿtazilite account of divine and creaturely causality preserve *scientific rigor* without imposing a priori limits to scientific research or falling into interventionism? One of the greatest merits of the Muʿtazilite account of causality in terms of its applicability to the modern religion and science discussion is that its framework entails several presuppositions that overlap with the guiding principles of scientific inquiry. Namely, a Muʿtazilite theologian can easily accept, without contradicting the internal logic of the Muʿtazilite theological framework, that interactions in the world are strictly regular, natural occurrences are lawful, and physical calculations and predictions are possible.

The consistency, continuity, and rigor of natural processes are a basic assumption shared by major Muʿtazilites. This stems from the school's concern for preserving divine justice and, thus, the intelligibility of the divine actions and the world, as already discussed. Such central concepts as nature (*ṭabīʿa*), causal determinant (*maʿnā*), latency-externalization (*kumūn-ẓuhūr*), or generation (*tawallud*) secure a worldview that is based on the notions of necessity and intelligibility. This openness to accept strict causal necessity in natural processes and intelligibility of the world, together with their rejection of an interventionist perception of God, could allow a Muʿtazilite to feel at home in the context of modern scientific inquiry.

In fact, thinkers such as Nidhal Guessoum already proposed that the Muʿtazilite theology is consistent with *methodological naturalism*, which appears to be the shared basis of contemporary scientific research. Methodological naturalism is the idea that the world is to be studied as if it is a causally closed system, with no reference to any sort of intervention. Methodological naturalism does not necessarily entail a denial of other dimensions of reality and, thus, is different from *metaphysical naturalism*, according to which nature is all there is. The strong conviction of methodological naturalism for natural causal explanations, without rejecting supernatural dimensions, makes it, as Guessoum argues, "a neutral standpoint and approach, and it has proven to be fruitful, appearing to correspond to how the world functions." If one can sustain an understanding of methodological naturalism without falling into metaphysical naturalism, then, as Guessoum argues, one can adopt "both a theistic worldview and a thoroughly naturalistic methodology for science" (2023) without being "schizophrenic" (2011, xxvi; see also Bigliardi 2014, 175–176; Guessoum 2011, 110–139).

I agree that the Muʿtazilite account of causality is compatible with methodological naturalism. If this is true, then Muʿtazilism could endorse the idea that

the world is to be studied on the basis of strict causal necessities *as if* there are no causal gaps or violations of the laws of nature. In my view, this is an advantage for the Muʿtazilite account of causality.

3.2 The Question of Miracles

Can Muʿtazilism account for *miracles* without turning them into science stoppers or metaphors? The Muʿtazilite theology rejects an interventionist model of the divine action in the world as already discussed. However, despite their causal necessitarianism, major Muʿtazilites scholars do accept miracles (see e.g. Kandemir 2020, 31–60; Qāḍī ʿAbduljabbār 2013, II. 730).[21] In other words, their insistence on causal necessities in the world does not lead them to deny the possibility of miraculous events. They, however, conceive miracles in consistency with their account of causality as *extremely rare extraordinary events that are specific to the prophets and consistent with causal processes*.

The Muʿtazilite perception of miracles appears to differ from the competing Ashʿarite school in two major ways. *First*, in accordance with the general tendency of the school, they approach the issue of miracles from the perspective of divine justice (i.e. divine moral perfection) and the intelligibility of God and the world. Thus, they deny that an imposter or a liar can be given miracles by God, a position that appears to be accepted by Ashʿarites. Miracles, Muʿtazilites argue, have to be given only to a true prophet. Because miracles have an epistemic function that is to affirm the truthfulness of a messenger of God. Hence, miracles secure the credibility of the divine message. If miracles can also be given to a liar or an imposter, then they lose all epistemic value. Miracles, then, turn into arbitrary events that cannot be conceived as proofs of truthfulness of a messenger of God.

Also, for Muʿtazilites, to be a proof for affirming the prophecy of a person, a miracle must be created by a "just" and intelligible God. If, as Ashʿarites argue, one accepts that God's will cannot be bound by the judgments of human intelligence and moral necessities, then how can one claim that these nullifications of "divine habits" are, in fact, affirming a prophetic claim? If no moral criteria are applicable to the divine actions, how can one attribute moral-teleological value to a miracle? For Muʿtazilites, it is inconsistent for Ashʿarites to present a miracle as proof of something (e.g. prophethood) while removing intelligibility from divine actions.

[21] For Qāḍī ʿAbduljabbār, Ashʿarites, by way of allowing God to commit evil "negated their chance to know the prophethood (nubuwwa)." For this depends on "God's beings just and wise, and that He does not affirm liers by giving them miracles" (*Sharḥ*, II, 730). For different Muʿtazilite scholars' position on miracles, see Kandemir 2020.

Second, the view of miracles as violations of the intelligibility of the world is difficult to accept from the Muʿtazilite point of view. Their perception of causality insists on necessary relations between events. Things cannot violate their God-given natures. Furthermore, God Himself does not (and should not have to) violate the cosmic rules that He Himself created. If He would, then He would be an "arbitrary king" or, perhaps, even a "repairmen" fixing imperfections in the created order. Both views would harm the divine perfection. He creates the laws and bestows natures and then lets things work out according to these laws and natures, as the theory of "authorization" (*tafwīḍ*) implies. Thus, miracles have to be understood consistently with the natural laws, not as nullifications of natural laws.

To conclude, there are two major convictions in the Muʿtazilite position here. *The first is that miraculous events are confined to the demands of a prophetic mission. The second is that miracles should have a causal nature*. When one considers these two major convictions about miracles together, one can safely say that, for Muʿtazilites, *miracles are rare, extraordinary events that are consistent with the known-unknown laws of nature*. These very low-probability events affirming the truthfulness of a prophet occur without violating the principle of causality.

This view of miracles might have certain advantages regarding our discussion on religion and science. *First*, *the rarity and causality of miracles* can mean that if these events occur perhaps only once in lifetime of the universe and if they also have a causal basis, then they should not affect how we study the world and live our lives here and now. Accepting these extremely low-probability events that are consistent with causal processes should not remove the rigor of scientific inquiry.

Second, the notion of *causal miracles* also implies that the causal nexus may be endlessly pregnant with novel and extraordinary possibilities. The causal richness of the world is inexhaustible. The world is a very strange place, perhaps stranger than we can think. Furthermore, if miracles are causal events, then they may be *repeatable*. And, if we can tap into the proper causality, extraordinary results can be achieved to the extent that they might appear "miraculous" to someone unaware of the underlying causal processes. For example, if communicating with someone over very long distances is a possibility hidden in the causal nexus, then when we tap into proper causality, we can repeat it, as we repeatedly do in our modern average everydayness. Thus, miracles are integrated into the intelligibility and causality of the world. As such, the notion of causal miracles turns the concept of miracles from being a "science-stopper" into being an invitation for further scientific inquiry.

At this juncture, however, questions arise. What exactly does Muʿtazilism mean by the notion of "causal miracle"? How can a miracle be consistent with the principle of causality? As far as I am aware, major Muʿtazilites do not provide detailed responses to these questions. Perhaps, however, two explanations can be offered in accordance with the tenets of Muʿtazilism. *First*, God can be conceived as creating the world in the beginning in a way that would allow the emergence of miracles when their proper time comes. This proposal would be in accordance with the latency-externalization (*kumūn-ẓuhūr*) theory defended by major Muʿtazilites like Naẓẓām and Jāḥiẓ. In this case, miracles would occur without violation of the principle of causality.

However, a criticism might be forwarded against this proposal. Such precise determination of the cosmic events appears to conflict with Muʿtazilite doctrine of "authorization" (*tafwīḍ*). God of Muʿtazilites does not set the world like a clock but creates beings with their "natures" and free will and then lets things work out. Moreover, miracles do not happen in a vacuum but in relation to other historical and cosmic events. In this case, one can argue, all moments of the cosmic history in which a miracle happens must also have been determined by God. This would be necessary for the miracle to happen in the exact moment and place that it happens and within the exact context of events that it happens. For example, if God is determining the Moses' staff turning into serpent in $t = 0$, He must also be determining all events leading to that event, such as Moses' life, Pharaoh, Egypt, and, in fact, all cosmic and social history, and so on. The degree of determinism here would be irreconcilable with the Muʿtazilite theology's core that is the protection of divine justice and divine moral perfection by establishing genuine creaturely freedom and agency. Thus, despite that Muʿtazilites could accept the cosmos is orderly and, even, fine-tuned, any fatalistic description of cosmic events themselves cannot truly be embraced by them.

Second, perhaps, a contemporary Muʿtazilite could also argue that modern scientific theories (quantum mechanics, chaos theory, emergence, etc.) may allow us to think about miracles as "special divine actions" that do not violate scientifically explicable causal processes, in a similar way to thinkers like Polkinghorne, Russell, and Peacocke mentioned in the second section. However, if a modern Muʿtazilite accepts these solutions, then he/she would also have to address challenges that can be directed against them. A few of these challenges were already mentioned. For example, these proposals appear to argue for divine action by suggesting open spaces in which God could act. These perceived spaces, however, may actually be closed up by scientific advances. More importantly, the model of divine action implied by these proposals appears to reduce God to the level of other causes. They

presume that God competes against natural causality and can only influence the world by pushing it aside. One can also argue that these proposals are tentative solutions due to the tentativeness of scientific theories and their philosophical interpretations.

To conclude, in my view, Muʿtazilites provide a viable option to think about miracles without turning them into science-stoppers or metaphors. They accept the reality of these extraordinary events while interpreting them in accordance with their convictions about causal necessity in the world. Miracles are not violations of natural laws but externalizations of causal possibilities concealed within the structure of the universe. Their theological convictions also allow us to think about these events as extremely low-probability events that might occur perhaps once in the lifetime of the universe. However, challenges still remain for Muʿtazilites. In my view, their account does not provide a convincing explanation of the notion of *causal miracles*, which is also consistent with the major principles of the Muʿtazilite school.

3.3 The Question of Divine Presence

One of the basic objections directed against Muʿtazilites by competing theological schools is the limitation of the divine presence to the extent that the created order does not really need continuous divine sustenance. God's creative role is limited to the first creation. Namely, God creates all beings with their "natures" and then lets things work out according to these natures. In the case of conscious beings, God also endows them with the power to choose (*istiṭāʿa*, *quwwa*, or *qudra*) and then lets them choose without any divine influence.

So, the makers of the world are basically two things: "natures" and human free will. The involuntary parts of the world are governed by strict causal relations under the guidance of necessitating "natures," and voluntary domains are governed by our power to choose. As human beings, we go toward the causal nexus with our free will and then enjoy or suffer the consequences. We are the creators of our acts. Except the first creation, everything occurs in accordance with the principle of causality and our free choices. Thus, both the domain of will and the domain of nature are handed over to the created order by God.

The problem here, for competing theological schools, is that the theory of "natures" and "authorization" (*tafwīḍ*) leads to the independence of the world from God to the extent that the divine presence, here and now, is lost. In other words, to use modern terminology, they see a *deistic* tendency here in that the world does not need God other than its first creation. Indeed, in comparison to the Islamic occasionalist account of causality (recall the

constant recreation of the world) or the Islamic participatory account of causality (recall the expansion of divine existence upon all beings), the Muʿtazilite account of causality appears to limit the immediate presence of the divine in the world.

This problem becomes more complicated when one thinks about the Muʿtazilite account of suffering and evil. Again, for Muʿtazilites, God does not, and even cannot, create evil and ugly. Why? He cannot be forced to create evil, for He is all-powerful. It cannot be imagined that He needs to create evil, for He is rich (*ghanī*). It cannot be imagined that He creates evil out of ignorance, for He is all-knowing. Thus, one needs to conclude that God is incapable of creating evil by virtue of the fact that anyone who can distinguish evil from good, who is good, who does not need to commit evil, and who cannot be forced to commit evil necessarily does not and cannot commit evil (Gimaret 2004; Qāḍī ʿAbduljabbār 1962–1965, II. 207. 1–7). One sees an attempt here to distance the divine causality from evil and suffering found in the world. The basic conviction is that the divine presence and causality cannot really be reconciled with the presence of evil and suffering. Now, if one's conviction is that the world is full of cruelty, injustices, sufferings, oppressions, and ugliness, not only in the human domain but also in nature, then this conception excludes the presence of the divine causality from a very significant domain of the created order.

How can a Muʿtazilite respond to this objection? Perhaps a Muʿtazilite can argue that their position cannot be equated with a full-blown deism. They strongly establish that God is present with His knowledge in the world. In fact, divine justice cannot be established without the all-pervasiveness of divine knowledge. God knows the world, sends messengers and books, establishes the law, punishes the sinner, and rewards the virtuous, according to Muʿtazilites. Hence, God is strongly present, at least as a knower and guider.

Despite this response, however, God appears to remain as a distant first cause of the world from the perspectives of such attributes as the divine power and will, despite His presence as an interested knower. He is not really present in the world as an immediate sustainer, creator, and willer. Such removal of the divine presence is conceived to be necessary to affirm creaturely freedom and agency according to the Muʿtazilite theology. In fact, Muʿtazilites themselves appear to acknowledge that their theory of the divine causality leads to a certain limitation of the divine presence in the world. Qāḍī ʿAbduljabbār, for example, argues that the meaning of the Qur'anic verse "God is the creator of everything" should be understood in a limited way. For God cannot be the creator of everything if that thing is evil and if we are the creators of our acts. Thus, Qāḍī ʿAbduljabbār appears to accept that Muʿtazilite theories of authorization and evil lead to

a certain exclusion of the divine action from the world. Indeed, a certain dualism is suggested by the Muʿtazilite account. God, as a creator, is present where there is justice and beauty and not present where there is evil and ugliness. As such, as Qāḍī ʿAbduljabbār writes, the Muʿtazilite doctrine might "resemble that of Zoroastrians" because of their affirmation that "acts relate to us and we are their makers" (Qāḍī ʿAbduljabbār 2013, II. 728).

In conclusion, while insisting on preserving divine justice and transcendence, Muʿtazilism appears to have lost the divine immanence and presence to some degree. Their theories of authorization (*tafwīḍ*) and natures, coupled with their fundamental assumption that evil and ugliness cannot directly be related to the divine power, will, and generosity, lead to a certain loss of the divine presence in the world. This dimension of Muʿtazilism becomes more evident, especially when compared to the Islamic occasionalist and Islamic participatory accounts of the divine presence in the world.

3.4 The Question of Divine and Creaturely Freedom

The Muʿtazilite view safely secures creaturely freedom, which is necessary to establish the reality of divine justice. Their doctrine clearly establishes that human agents are creators of their own acts and truly uncaused causes of themselves. The question about divine freedom, however, remains. Is God really free in Muʿtazilism? If not, can God really be morally perfect? Can divine justice be a genuine virtue without divine freedom? Let me turn to these questions.

All Muʿtazilites – perhaps with the notable exception of Bishr ibn al-Mu'tamir – hold that God necessarily does what is the optimum (*aṣlāḥ*) for the created order. God cannot choose to be evil or ugly (*qabīḥ*). He is obliged to do the good (*ḥusn*).[22] Why? Again, nothing can force God to choose evil, for He is all-powerful. It cannot be imagined that He needs to commit evil, for He is beyond all need. It cannot be imagined that He does not know evil, for He is all-knowing. So, someone who knows evil, who is morally perfect, and who does not need to or cannot be forced to commit evil necessarily does not and cannot commit evil.

In sharp contrast, Ashʿarites hold that God is absolutely free and sovereign and does as He wishes (*faʿālun limā yurīd*).[23] God does not owe anything to the created order. He cannot be held responsible for His acts. Any type of moral

[22] See, for example, Qāḍī ʿAbduljabbār 1962–1965, IV, 313 and V, 177; Qāḍī ʿAbduljabbār 2013, 131–132, 301, 510–512; Ashʿarī 1963/1382, 224; Shahrastānī 1934, 397–398.

[23] Qur'an 17/19, 18/29, 36/82, 33/17, 2/253, 13/11, 33/17, 6/125. The Qur'an, however, also emphasizes that God acts in a just and wise manner. See, for example, 7/178, 20/81–2, 14/7.

necessity imposes a limitation upon divine freedom and sovereignty.[24] Thus, for Ashʿarites, the foundation of morality is the divine command. What God permits is good, and what God forbids is evil. If lying is evil, it is because God declared so; if He declared that lying is good, it would be good. The divine command precedes and grounds all moral judgments. The good and bad do not have independent ontological categories with which limited human reasoning can judge God's acts. However, not all Sunni schools shared this opinion. Maturidites, for example, maintained a position comparable to that of Muʿtazilites. God's moral perfection and wisdom requires that God always act in a just and wise manner. Although there is no necessity in divine acts, there is also no absurdity (cf. Māturīdī 2003, 151–152).[25]

Muʿtazilites obviously have to disagree with Ashʿarism here. Indeed, the big question between the two schools is whether God acts volitionally (*fāʿil al-mukhtār*) without the confines of moral judgment or necessarily (*fāʿil al-matbūʿ*) in accordance with the moral truth of justice. Muʿtazilites are open to the idea that God acts "necessarily." For example, it is God's obligation to reward the virtuous and to punish the deviant. Justice is not only a virtue but also a permanent obligation to the extent that this obligation may render other divine acts, such as forgiveness, impossible. Pardoning someone who has not merited His pardon is impossible, for this would undermine divine justice. Pardoning is only possible where there is repentance on the part of the sinner (see e.g. Qāḍī ʿAbduljabbār 2013, 8–44). Similarly, eternal punishment of a prophet or a virtuous believer would also be an impossibility for this would undermine the divine moral perfection.

A critic might however argue that the Muʿtazilite position could undermine divine freedom for it appears to entail that God is subject to moral limitations. The divine commands and acts do not determine moral truths but merely follow them. Can we then say that the Muʿtazilite theology suggests a sort of necessitarianism in the divine acts? Is God acting within a transcending moral universe? Additional difficulties may appear: To what extent can a moral agent that acts out of necessity be called a moral agent? Can a necessary virtue still be a virtue? Indeed, if we lose divine freedom, we may also be losing divine moral perfection, for morality and freedom are so intertwined that it is hard to think about the one without the other.

[24] Ashʿarī 1955, 37; Bāqillānī 1986/1407, 52–55; Juwaynī 2003/1424, 175; Ibn Fūrak 1987, 70; Shahrastānī 1934, 397–398. Cf. Demir 2015, 50. Also see Alousi 1968, 228–230; Brunschvig 1974, 5–23; Frank 1977, 124ff; Gimaret 1990, 433–435.

[25] The Qurʾan, also appears to accept a certain conditionality in the divine acts when it emphasizes justice and wisdom as the ground of divine acts. See, for example, 7/178, 20/81–82, 14/7.

Can the Muʿtazilite theology answer these questions? Perhaps, it can. The solution to the problem appears to be the identification of morality and the divine essence. In this case, when God conforms to moral values, God would be conforming to His own essence. And, when God abides with moral values, God abides with Himself, freely and necessarily. God is free, for there is nothing outside of God that can dictate anything upon God and the divine essence itself is uncaused. The divine conformity to moral values is also necessary, for the perfection of divine essence negates moral arbitrariness, especially if this arbitrariness entails evil and ugliness. Thus, divine essence becomes the very source of morality and, thus, secures both divine freedom and divine necessity.

Now, the Muʿtazilite theology indeed appears to move toward the identification of morality and the divine essence in its theory of the divine attributes. Muʿtazilites affirm that the divine qualities are not separate from the divine essence. God's attributes and God's essence are one and the same thing. If the divine attributes were separate, they would have to exist alongside God constituting, qualifying, or supporting the divine essence. Moreover, to qualify God, they would have to be coeternal with God. This, for Muʿtazilites, is unacceptable because it leads to the problem of "multiplicity of eternals" (*taʿaddud al-qudamā'*). There cannot be more than one eternal being. Thus, to save the divine uniqueness, Muʿtazilites dissolve the divine attributes in the absolute unity of the divine essence. And, they express the relationship of attributes and essence with such formulas as *ʿālim bi-ʿilm huwa huwa* (knowing by a knowledge that is Him), *qādir bi-qudra hiya huwa* (powerful by a power that is Him), *ḥayy bi-ḥayā hiya huwa* (living by a life that is Him), and so on.[26]

Muʿtazilites here appear to take an important step toward the reconciliation of freedom and necessity in God. If the divine attributes can be conceived as one with the divine essence, then, one can argue, when God conforms to moral truth, He conforms to Himself and acts as Himself in the most perfect way, freely and necessarily. However, from a historical point of view, this solution was not utilized by any major Muʿtazilite theologian to address the problem of reconciliation of freedom and necessity in God, as far as I am aware. It has only been used to establish the oneness and uniqueness of God and to discuss the nature of the Qur'an.[27]

[26] Ashʿarī 1963/1382, 165–174, 484, 497; Baghdādī 1948, 76; Shahrastānī 1961, I. 44–46, 49–50; Nasafī 1990–93. Ibn al-Murtazā adds that Kharajites and Shiʿites also believed in this. See Ibn al-Murtazā 1985, cited in Demir 2015, 42. For a good introduction to this debate, see Nader al-Bizri 2008.

[27] Namely, for Muʿtazilites, the Qur'an must be created (*makhlūq*). The "uncreatedness" of the Qur'an is unacceptable, for if the Qur'an is uncreated, then it must be co-eternal with God. But, the co-eternity with God is unacceptable because it undermines the divine unity and uniqueness. So, attributes must be one with the divine essence.

To conclude, Muʿtazilism establishes creaturely freedom with an admirable rigor and passion. As it pertains to divine freedom, challenges remain. A contemporary Muʿtazilite, however, may be able to encounter these challenges in an efficient way, in my view.

4 The Islamic Occasionalist Account of Causality and Science

4.1 The Question of Method

Islamic occasionalism holds that there is no necessary connection between what is perceived as "cause" and what is perceived as "effect." It is God who creates both "cause" and "effect" and then connects them to each other in a self-imposed habitual pattern. In my view, by starting from these convictions, a Muslim occasionalist can argue that Islamic occasionalism can be understood in a way that overlaps with the guiding principles of scientific inquiry. Namely, the regularity of natural processes, the lawfulness of physical interactions, and the precision and predictability of the word order do not contradict the internal logic of Islamic occasionalism. In fact, they are implied in the notion of the "divine habits." There is a strict order in the world due to the self-imposed habitual creation of God.

It is true that Muslim occasionalists deny the notions of natures and necessity in causation. However, denying necessary causation does not lead them to propose a chaotic worldview in which everything happens arbitrarily. The regularity in the world process is established through constant and lawful conjunction by God. The divine habitual patterns are the guarantor of the predictability of natural occurrences. In fact, the way God creates is the same way the world works. At this point, the world of an occasionalist becomes indistinguishable from a world governed by strict causal necessities. *To the extent there are no breaks in the divine habits*, the world can be studied rigorously as if physical laws and necessary causation govern it.

It can further be argued that a "common-sense" view of causality can be preserved to an important degree. While we fail to demonstrate the necessary connection between cause and effect, we must still run our lives *as if* there is a necessary connection. From a metaphysical point of view, one could choose to believe the truth of occasionalist claims, but one would still, from a practical point of view, live life with the world's predictability in mind. As such, Islamic occasionalism endorses the view that despite a qualified skepticism about the metaphysics of causal relations, the idea of the consistency of natural processes is still, to borrow a Kantian concept, a necessary "postulate of practical reason." Thus, it can be argued that a coherent

occasionalist study of the world should resort to natural causes when explaining physical phenomena.[28]

However, despite these merits, Islamic occasionalism is also susceptible to serious challenges. In my view, these challenges must be addressed before it can be perceived as a compelling option.

First, as will be examined in detail in the next section on miracles, there is the issue of nullification of regularities in the world. Major defenders of occasionalism, such as Ghazālī and Jurjānī, argue that strict regularities experienced in the past "fixes unshakably in our minds" that the same regularities will also dominate the present and the future (Ghazālī 1997, 170; Jurjānī 2015, 78). However, occasionalist tradition also strongly affirms that these regularities are nullified from time to time by God. If interruptions occur, then how can our trust in regularities be really "unshakable"? Perhaps, one can attain a sort of practical assumption about regularities in this context, but this would be quite different from an unshakable, unyielding, and systematic insistence that appears to be the basis of the scientific method.

Second, a critic might also argue that the Islamic occasionalist concepts such as divine "preference without reason" (*tarjīh bi-lā murajjīh*) counters scientific search for "reasons and causes" for natural events. Consider, for example, the Ashʿarite atomism where atoms are described as homogenous and neutral loci of the divine action. God assigns accidents to these homogenous atoms and differentiates them from each other. Atoms lack any innate nature and thus do not have any demand or feedback. Thus, they are differentiated from each other solely on the basis of the principle of "preference without reason." The changes in atoms are then reflected in higher levels. From trees to stars, all entities are composed of atoms, and, thus, they are differentiated from each other as a result of the differentiation of atoms. Therefore, what fashions all beings at all levels is the divine "preference without reason."

Aside from the difficulty of accepting such perception of atoms (or particles) in light of modern science, this view of the world seems to counter the rigorous scientific demand for concrete causes. The difficulty arises from emptying the world from all causal feedback. If the ground of the world (atoms) lacks any property that one needs to explore to understand causal relations extending from particles to biological domains, then why search? If the world process is based solely on the divine "preference without reason," then how can we cultivate an unyielding insistence on searching for antecedent causes for natural events, or what follows from those events?

[28] I also discussed this dimension of occasionalism in Koca 2020, 240–249. For a more recent take on the reconciliation of occasionalist view of causality and scientific methodology, see Ahmed Malik and Muhtaroglu 2002.

Perhaps, an occasionalist might choose to leave atomistic description of the world and subscribe to another physical description of the world or might even reject to subscribe to any particular description. Would this solve the problem? I believe not. For, so long as we remove causal efficacy from the world, which is the central tenet of occasionalism, one would need to conclude that everything happens on the basis of the principle of "divine preference without reason." And, if this is the guiding principle of our understanding of the world, then how can an unyielding scientific insistence on searching for "reasons" be cultivated?

I am aware that within the specific paradigm of occasionalism, we would be searching for "antecedent occasions" instead of "antecedent causes." However, even if one replaces the word "cause" with "occasion," the difficulty appears to remain. Because, metaphysically speaking, there really are neither "antecedent causes" nor "antecedent occasions." The previous state of the world does not have any claim on the next instance, neither as a cause nor as an occasion. There is only "divine preference without reason" that continuously differentiates the world process, *out of nothing*, without any necessitating cause or occasion. For scientific research, however, there must be an unshakable, unyielding, and systematic insistence on "reasons" either in the form of "causes" or "occasions." There seems to be a tension here between the scientific method and occasionalist metaphysics.

Third, if beings have no real causal contributions, then the very notion of the "divine habits" appears to collapse. How? The notion of habit appears to presume a certain reciprocity in the relationship between God and the world. For example, if I want to grow a tree, I need to act in a certain way. I need to plant the sapling, water it, fertilize the soil, and so on. When I do these things then, for occasionalism, I can trust in God's habitual creation that the tree will grow. So, there is a perceived reciprocity between my acts and the divine acts. However, if God is also the creator of my own acts, that is, choosing to grow a tree, planting the sapling, watering it, and so on, then this reciprocity appears to vanish. It is no longer my actions vis-a-vis the divine actions, it is only the divine actions vis-a-vis the divine actions.

So, if the world is providing no real feedback, demand, or response, we appear to lose all reciprocity between the world and God. In such a context, what would the notion of "divine habit" mean? It appears to lose its meaning intended by occasionalism. For, when created beings have no real causal contribution, then God would remake the world *out of nothing* at each moment. If so, neither the previous state of the cosmos nor the previous acts of God would have any real claim on the next instance. In a world of continuous creation from nothing, there can only be an *appearance* of "divine habits."

In reality, God fashions the world completely *out of nothing* at each moment based on the principle of "preference without reason."

If this is true, there appears to be an internal tension or inconsistency at the very heart of the Islamic occasionalist doctrine. The central notion of "divine habit" appears to lose its reality and be reduced to an "appearance" when we give all causal power to God and lose agency in the world. If so, how can our trust in divine habits be "unshakable"? Can the notion of "divine habit" still be used to explain strict regularities? If not, then how can we secure the guiding principles of scientific inquiry

4.2 The Question of Miracles

Islamic occasionalism strongly affirms the reality of miracles and describes them as negations of the "divine habits." God can annul the relationship between what is perceived as "cause" and what is perceived as "effect." For example, a fire might not burn cotton, or barley can grow from wheat seed.

Obviously, there is a tension between the idea of the "nullification" of strict regularities and scientific research, which insists on uninterrupted continuation of regularities. These nullifications may also suggest a priori limits to scientific research by proposing inexplicable gaps. Moreover, if these nullifications are envisaged as frequent possibilities describing the world process, then it might be very difficult to cultivate a culture of unyielding and unshakable insistence on causal explanations. One cannot be really sure that a given set of conditions will always give the same outcomes.

Can Islamic occasionalism provide an account of miracles without undermining the guiding principles of science? The first possible occasionalist response may be to marginalize miracles to the extent that the natural laws remain the main explanatory framework for the physical processes. I mean, the nullifications of the divine habits may only be accepted if they are extremely rare and only when there are very strong reasons to believe that causal explanations are completely exhausted. The acceptance of these extremely low-probability events that might occur perhaps only once in the universe's lifetime does not really affect how one studies the world here and now.

Ghazālī appears to propose a similar solution. He accepts that if a necessary connection between cause and effect is denied, then it is possible that "if someone leaves a book in the house, this book, on his returning home, could change into an intelligent slave boy or into an animal" (Ghazālī 1997, 170). Provided that this is not a logical impossibility and that God is all-powerful and absolutely free, then, in fact, a book could turn into "a slave boy or an animal." However, this does not happen, nor should we expect this to happen. For, as he

writes, "God created for us the knowledge that He does not enact these possibilities (*mumkināt*) . . . The continuous habit (*istimrār al-ʿāda*) of their occurrences repeatedly, one time after another, *fixes unshakably* in our minds the belief in their occurrence according to the past habit" (Ghazālī 1997, 170).

According to this version of occasionalism, the world is not governed by an "arbitrary king." At least, this is not the conclusion scholars like Ghazālī mean to invite. Our "unshakable" belief in the regularity of this world depends on the consistency of the cosmic history of the world. If regular occurrences dominate the past, they will also dominate the present and the future.[29] Perhaps this tendency within the Islamic occasionalist tradition, represented by such major figures as Ghazālī, can be used to minimize the possibility of breaks in the divine habits and, thus, in the natural order.

A critic might, however, argue that this solution has serious difficulties. *First*, Islamic occasionalism is based on God's absolute freedom and sovereignty. This theological ground does not easily allow such marginalization of miraculous events. The moment we accept that God is not bound by the necessities of the world or even with His own "habits," then how can we impose limitations on the *frequency* of "the nullifications of habits"? These nullifications do not have to be as radical as "a book turning into a slave boy" as Ghazālī writes. However, within a theological paradigm that accentuates the contingency of the relationship between cause and effect, one can easily expect and hope for "nullifications of causality" in many other cases. What prevents someone who is suffering from a deadly disease from expecting or hoping for less radical nullifications of causality? If God can nullify causality, then it is only normal to hope for such nullifications as near possibilities, especially when we are dealing with the harshness of the causal rigor of the world. Perhaps, such expectations can even be praised from a pietistic point of view. However, from the specific perspective of our discussion, expectations of frequent nullifications do appear to contradict the strong scientific insistence on uninterrupted continuity of causality.

Second, as already discussed, Ashʿarism accepts the possibility of miracles from prophets, saints, and even impostors and liars. If one affirms that the divine habits were nullified in the past and may also be nullified in the present and future, then how can one have an "unshakable" trust in strict regularities? Perhaps, one can still have a practical presupposition that strict regularities will continue. This, however, would be quite different from an "unshakable" trust.

This brings us to, what I might call, the *problem of the frequency of the breaks in the divine habits*. The marginalization of miracles, within the context of the

[29] Ghazālī is not alone in holding this conviction. Many in the later occasionalist *Kalam* tradition agree with him. See, for example, Jurjānī 2015, 512.

Ashʿarite theology, is not an easy task. This is especially clear when it is compared to Muʿtazilism on the same issue. So, the rejection of natures, the removal of causal necessity, the robust accentuation of divine freedom, the acceptance of moral arbitrariness in God, and the affirmation of interruptions in the divine habits seems to lead to a theology of possibility in which miracles, as nullifications of strict regularities, are conceived as immediate and frequent possibilities. Such a conception of miracles is obviously in tension with scientific unyielding insistence on strict regularities in the world.

Third, a critic might also argue that even if we manage to establish for the rarity of miracles within Islamic occasionalism, this might not solve the problem. For so long as miracles are seen as violations of natural laws, they may still affect how one studies the world despite their rarity. For example, the differentiation of animal species can be seen as rare miraculous events. However, if species are differentiated from each other as a result of nullification of causal processes, then this would collide with the theory of evolution, which aims to provide a cause-based explanation. Hence, so long as miracles are seen as inexplicable gaps, the argument from "the rarity of miracles" might not yield the desired result of reconciliation between theological and scientific attitudes, especially when these rare moments are offered to explain the very heart of a scientific model.

Perhaps at this point, a Muslim occasionalist can adopt an entirely different view of miracles that is consistent with natural laws, as Muʿtazilites do. Would this adoption be possible for Islamic occasionalism? I believe the answer should be "no." A natural explanation cannot be offered in accordance with the internal logic of the theory, for it rejects the very notion of "nature" in the first place. Since there are no natural laws but only the divine habits, then I do not see how a *natural* view of miracles can be proposed within occasionalism.

In conclusion, within the framework of Islamic occasionalism, it is a challenge to offer a view of miracles that does not collide with scientific methodology. Despite the admirable efforts of major occasionalists, the logic of the theory can easily lead to a conception of miracles as immediate and frequent possibilities shaping the world alongside regularities. If so, this would cultivate a culture of doubt toward the rigor of natural processes and scientific unyielding insistence on causal explanations.

4.3 The Question of Divine Presence

One of the strongest aspects of Islamic occasionalism is its ability to establish a robust sense of divine presence. It insists on the pervasiveness of divine power, will, and sovereignty. God is the creator of cause and effect and attaches them to each other on a self-imposed habitual pattern. Moreover, God recreates the world

anew at each moment. Substance and accidents absolutely depend upon God for their creation and continuation. God creates *ex nihilo* and continuously.

These dimensions of Islamic occasionalism lead to a robust sense of divine presence in the world. In contrast to the Muʿtazilite account, Islamic occasionalism leaves no domain where God is not immediately and actively present. This is probably why, in Islamic spiritual tradition, certain aspects of Islamic occasionalism were appropriated. The renewal of the world at each moment and the all-pervasiveness of the divine qualities bring one to the presence of the divine. This influences one's spiritual state and presence in all forms of worship. God is no longer a distant cause located at the end of a long chain of causality but immediately and overwhelmingly present.

4.4 The Question of Divine and Creaturely Freedom

A major difficulty for Islamic occasionalism appears to be the question of creaturely freedom. If the Islamic occasionalist tradition subscribes to the idea that both cause and effect are created directly by God and connected to each other upon His self-imposed habits, then a question inevitably has to arise: How, then, can we be uncaused causes of ourselves? If human choice, as a cause, is also created by God, then we appear to lose genuine human freedom.

The Islamic occasionalist tradition is aware that human freedom needs to be established for human accountability and agency. Without a genuine power to choose, we find ourselves in pure determinism and fatalism. As we examined in the first section, the notion of acquisition (*kasb*) is proposed to solve this problem. It is, however, not always intelligible how *kasb* truly secures freedom, for it appears that even our *kasb* is under the influence of divine creation. All-pervasive divine will fashion our choices, all-pervasive divine power creates them. Again, as Ashʿarī himself wrote, "there cannot be, under the authority of God, any acquisition that God does not will" (Ashʿarī 1967, 103). If, as Ghazālī writes, "what is habitually believed to be a cause and what is habitually believed to be an effect" (1997, 166) are both caused by God, then even our mental activities must be caused by God, for we habitually believe them to be "causes" of our acts. If this is the case, then Islamic occasionalism, while introducing a robust sense of divine power, will, and sovereignty to the created order, appears to lose creaturely freedom.

As already discussed, for Muʿtazilites, we are authorized with the power to choose, and this power exists "prior" to act, and it is not under the divine influence in any sense. Islamic occasionalism removes this "priority." *Kasb* is created by God as an accident, in conjunction with the act. It does not exist as an independent reality prior to the act. Now, if human choice is also created by

God, then how can it be an uncaused cause of itself? Moreover, if it is created in conjunction with an act, then what role can it play in choosing the act? If *kasb* is merely a disposition toward the act, how can I have a disposition toward an act if I am causally unrelated to that act?

Can Islamic occasionalism solve this problem? As far as I am aware, some Maturidite scholars attempted to address this problem. They argued that free will can be considered neither existing nor nonexisting. Then, it would be located beyond the pervasiveness of the creative divine power. As such, it is called as a "relational thing" (*amrun nisbi*, *amrun iḍāfiyyun*, or *amrun ʿitibarīyyun*) (see e.g. Ibn Humām 1979, 112–113; Muhtaroglu 2010, 45–62; Ṣadr al-Sharīʿa n.d., 349). Free will is a relational thing for it exists only in relation to something else. For example, rightness-leftness does not exist in itself. It exists in relation to something else. When one constructs a wall, the rightness or leftness of the wall immediately emerges without an "extra" input of power. These notions are neither existent nor nonexistent. They are nonexistent, for they cannot be told to have the same ontological category as the wall. They also are existent for they exist at least in the mind as relational things.

Now, human acquisitive power (*kasb*), according to this argument, can also be thought of as a relational entity. It is neither existent nor nonexistent. Thus, it is suggested that the human will is beyond the scope of the divine will and power. Once we can place human will within this relational domain, we can then say it is free. This would also be consistent with the principal occasionalist conviction that God creates every existing being.

A critic, however, might argue that this proposition does not actually solve the problem. *First*, even if one can imagine such notions as rightness-leftness in an intermediary domain between existence and nonexistence, it is difficult to say whether they are uncaused. The rightness-leftness of a wall emerges as a result of the creation of the wall. This is to say the creator of the wall is causing them. If free will is considered like these relational entities, it is still under the influence of the divine causation. Then, it is not an uncaused cause of itself. *Second*, if *kasb* is a relative entity, then it cannot be truly qualified with existence, as the argument suggests. Then how can it ground human freedom? If *kasb* is in the same category as rightness-leftness, then it appears to exist only as a mental construct. How can a mental construct be the source of human freedom? Is not this suggesting that freedom is an illusion? *Moreover*, how can one truly make sense of *kasb* as being located in the putative intermediate realm between existence and nonexistence (*principium tertii exclusi*)?

These are difficult questions that the Islamic occasionalist tradition must address to establish the reality of free will in accordance with their theology.

What we can safely say here is that it is truly a difficult task within the framework of Islamic occasionalism to achieve a genuine sense of freedom.

If the reality of freedom is not established, then a list of other theological and philosophical problems immediately follows. Without freedom, concepts such as agency, accountability, morality, and justice collapse. Moreover, when we lose causal efficacy and agency in the created order, we appear to lose the created order itself. To have a world at all is to have freedom in it. If beings are making no real causal contributions to the world and lack genuine freedom, how can we establish the reality of the world? What prevents us from eliminating the world if all causality belongs to God?

Another dire conclusion would be related to the presence of evil in the world. If beings are making no real causal contributions to the world and lack freedom, we appear to remove all distance between God and evil. This suggests God's direct involvement with the abundance of evil and suffering in the world. Also, how can one make sense of the notions of divine justice and divine reward–punishment in this context?

These challenges can be addressed more efficiently if the reality of causal agency and freedom is established with clarity. However, as we just discussed, this appears to be a difficult task to accomplish for Islamic occasionalism. Perhaps theoretical possibilities of Islamic occasionalism may not yet have been exhausted; however, despite its certain advantages, these theological and philosophical difficulties need to be resolved before it can be considered a viable option for reconciling religious and scientific claims about the world.

5 The Islamic Participatory Account of Causality and Science

5.1 The Question of Method

Can the Islamic participatory account of divine and creaturely causality preserve *scientific rigor* without imposing a priori limits to scientific research or falling into interventionism? In my view, it can. Let me turn to this.

First, it can be argued that this account allows us to approach the question of causality from two perspectives: *metaphysical and natural*. How? Recall that the Islamic participatory account of causality starts from the notion existence (*wujūd*). All existents are mere possibilities without receiving existence from the Necessary Existent that is conceived as *pure existence*. When possible existents participate in the divine existence, they become actual entities in this-here world. Then, they can interact with each other through natural causality. As such, there are two levels of causality. From a metaphysical perspective, God bestows existence and actualizes possible existents. From a natural perspective, possible existents interact with each other as actual beings through intelligible

regularities. Thus, metaphysical causality refers to the constant flow of *wujūd* upon possible existents from God. Natural causality refers to regularities organizing the relationships of distinct and actual beings in the world.

If so, metaphysical and natural causality does not have to compete with each other. The continuous bestowal of *wujūd* makes all other types of relationships between existents possible. Natural causality is based precisely on the participation of existents in the divine existence. Thus, one can perceive natural causality within the universal framework of metaphysical causality without negating its distinctness that is central to scientific activity. Metaphysical causality can be perceived as the constant background of natural causality.

Second, from the specific perspective of metaphysical convictions grounding the Islamic participatory account, the source of natural causality, laws, and necessities should also be the divine nature. The presence of strict regularities in the world can be traced back to the constancy of the divine nature. In other words, the principle of causality, natural laws, and mathematical necessities is how divine constancy echoes in our world. This is to say, strict regularities in the world are not extrinsic to the divine nature, they follow from it. Then, as a concomitant of the divine nature, natural causality does not have to compete with God, for it follows from God.

If there is no competition between God and other causes, the Islamic participatory account of causality does not have to suggest "gaps" in causal interactions to establish divine presence in the world. The divine presence is not sought in the inexplicable gaps but in the all-pervasive presence of *wujūd*. God is most intimately present in the action of each being through their innermost principle, existence, and does not need to compete against or interfere with natural causality as implied by "the god-of-the-gaps" arguments. In fact, to require such *competition* between God and other causes would be to reduce God to the level of other causes.

Furthermore, this view of causality does not have to conflict with a particular scientific theory. For it does not have to commit itself to a particular scientific explanation. When we conceive the divine action through *wujūd*, the specific structure and order of natural causality become secondary to understand the divine action. The focus is now on *wujūd* itself, which encompasses and permeates into all causality. The divine presence is established by recalling existence as the background of all causality rather than the specific order of causal relations. To use an analogy, the focus here is not the specifics of the causal map but the ink with which the map is drawn, the paper on which it is drawn, or the light with which we see the map and all its colors.

Thus, no scientific theory should be "theologically risky" from the perspective offered here. Again, the Islamic participatory view of causality could

remain fully coherent regardless of the specifics of scientific explanations. It would have the plenitude to adopt different causal scenarios explaining natural phenomena (quantum theory, evolution, systems biology, general–special relativity, chaos theory, string theory, etc.) within the infinity of *wujūd*. Consider string theory, quantum mechanics, chaos theory, systems biology, general-special relativity, or evolution. These theories would be compatible with the participatory account of causality, given that *wujūd* always remains the constant background and principle of all natural causal relations. Causal networks and scenarios may take various shapes, yet *wujūd* would remain unchanged, given that natural causality describes the relationships of possible existents. Thus, within the larger context of *wujūd*, different physical ontologies can be absorbed and integrated. In my view, such an approach also invites a sort of confidence before the scientific inquiry that asks and answers its questions in the domain of natural causality without entertaining the question of existence itself.

Another key point to our discussion is that a study of the world through natural causality does not necessitate us to contemplate the notion of existence. When we examine the world through natural causality, we may just "bracket" the question of existence and describe the relationship of individual existents. This is to say science can perfectly function without thinking about the notion of existence (*wujūd*). A natural scientist does not have to deal with the question of existence to conduct a rigorous study of the world. However, from the perspective of metaphysical causality, the question of existence is at the center. God acts in the world by sharing existence with each possible existent. Each being is causally efficacious due to its participation in the divine existence. Since existence is the innermost principle of all beings, the divine action can be perceived as present in the world in the most intimate and universal way. With the bestowal of *wujūd*, all essences-possibilities become actual, and the world continuously moves from possibility into actuality.

Therefore, it can be concluded that the participatory account of causality does not have to clash with the guiding principles of the scientific inquiry, such as the world being predictable, causal continuities not being broken, and physical interactions being lawful and calculable. Natural and metaphysical causality do not compete with each other. Natural causality can be preserved with all of its rigor within the larger metaphysical framework of *wujūd*.

5.2 The Question of Miracles

How can the issue of miracles be understood from the perspective of Islamic participatory account without turning them into science-stoppers or metaphors? I would argue that the participatory view of causality could allow us to approach the notion of miracles from a novel perspective by starting from the notion of

existence (*wujūd*) that could preserve the scientific rigor and the reality of miracles. This perspective might also have the potential to reconcile the Ashʿarite and Muʿtazilite accounts of miracles. How?

First, one can argue that in human experience, we are able to find a certain reconciliation of causality and freedom. I mean, I experience myself in two different ways. First, I am given to myself in the form of causal relations as liable to the laws of nature. Second, in an entirely different way, I am given to myself in my capacity to step out of causality, to be an uncaused cause of myself, and to be free. Freedom and causality come together in my average everydayness without negating each other. My freedom enables me to enter the domain of causality as an uncaused cause. Causality translates my free choices into actual realities. For example, when I wish to raise my arm as a result of conscious choice, I simply can.[30] Of course, a causal account of my arm's movement can be given by examining physical interactions in my body. Yet, if to be free is to be an uncaused cause, this causal account cannot include my free choices. By definition, I am stepping out of causality when I act as a free agent. Again, *if a being has genuine freedom, its behavior would not be fully determined by the antecedent causes*.[31] Hence, in all events that include the exercise of freedom, one perceives strange togetherness of causality and freedom. If this is true, I can be seen as a reconciliation of causality and freedom.

At this juncture, a critic might argue that what we perceive as "freedom" may just be an "illusion." And, if freedom is an illusion, the relationship between causality and freedom cannot be conceived as a reconciliation. For, my experience of freedom would also be caused by underlying physical interactions. If so, there really is no freedom but only natural causality. Indeed, this belief is widespread among the defenders of materialistic philosophies.

Now, my aim in this section is not to solve the age-old debate of free will versus determinism. All I can say here is that my thoughts presented in this section is based on the assumption that we are genuinely free beings in that it is possible for us to break the chain of causality. If the reader does not share the same assumption, he/she will probably not be convinced by what follows. However, if one is open to the possibility that our freedom is *real*, then one can – perhaps even must – conclude that we experience both freedom and causality in a state of reconciliation in our very own beings. This reconciliation is precisely what concerns us here.

[30] I am aware that a famous experiment of Benjamin Libet examining the relationship between the brain activity and a decision to flex a finger has been used to question the efficacy of our free will. However, this and similar researches is far from being the definitive answer to the extremely complicated question of human free will, as many scientists and philosophers contested.

[31] To use a Kantian expression, in exercising our freedom, we are beyond the domain of phenomena organized by causality.

At this juncture, perhaps, one can conceive a similar reconciliation between divine freedom and natural causality. God can be perceived as influencing causal events without canceling their causal intelligibility in a similar way we influence causal events as free agents without cancelling their causal intelligibility. In other words, by starting from our own immediate experience, we can conceive the possibility of a similar reconciliation of causality and freedom in the relationship between God and the world. As we give direction to causal processes with our freedom, God can be conceived as giving specific directions to causal processes without negating the causal rigor of the world.

How do we apply the perceived reconciliation of natural causality and divine freedom to the question of miracles? I would argue that miracles can also be understood in light of the reconciliation of divine freedom and natural causality. They can simultaneously be seen from the perspective of divine freedom and from the perspective of natural causality. On the one hand, miracles can be seen as novel expressions of divine freedom. Obviously, there is something very unusual about miracles narrated in sacred texts. On the other hand, one can also argue that causality is present in the case of miracles because they are manifested in the natural world governed by causality. The two perspectives do not have to negate each other, as they are reconciled in my own experience. Therefore, one can conceive the presence of both divine freedom and natural causality in the case of miracles in a state of reconciliation.

If so, this view of miracles might allow us to reach a reconciliation of the Muʿtazilite and Ashʿarite approaches to miracles. Together with Ashʿarites, one can see miracles as expressions of divine freedom or even as "nullifications of the divine habits." However, in this specific context, the notion of "nullifications of the divine habits" does not have to mean violations of natural causality, as Ashʿarism argues. What is nullified is the divine habits or regularities, not causality. How? It is possible to conceive "nullifications of the divine habits" as an exercise of divine freedom that does not violate natural causality, again, by starting from our own experience of the reconciliation of freedom and causality. For example, when I decide to fast in the month of Ramadan, I am certainly "nullifying" my habit of eating three times a day. I now proceed toward the domain of causality with a different attitude as a novel expression of my freedom. Then, the domain of causality translates my free choice into an actual reality. Both freedom and causality are preserved in this interaction. I exercise my freedom without violating causal relations in the world. If this is true, one can conceive that in "nullifications of the divine habits," both divine freedom and natural causality are preserved.

So, this view of miracles agrees with Ashʿarites in that miracles can be conceived as novel and extraordinary exercises of divine freedom. It also agrees

with Muʿtazilites in that miracles do not have to violate the natural laws. In these "nullifications of the divine habits," the laws of the universe, known or unknown, are protected. In the case of a miracle, both divine freedom and causal rigor are preserved.[32]

Thus, one can conceive of God influencing causal networks, sometimes in extraordinary and miraculous ways, as novel expressions of divine freedom without violating the natural laws. The natural world translates the specific will of God into our perception in the language of causality. From this perspective, the prophetic miracles, such as Jesus' walk on the water or Abraham's deliverance from Nimrod's fire, and so on, can be seen, at once, as miraculous and causal. They are miraculous, for these special moments in history would not be possible without the specific will of God. Hence, miracles do preserve their transformative and awe-inspiring influence and do affirm the truthfulness of a messenger. This, however, does not have to suggest that they are also violations of natural causality. If, as I argued, our freedom and natural causality can be conceived in a state of reconciliation in our own immediate experience, then miracles can also be seen as moments of reconciliation of divine freedom and natural causality.

Key to our discussion is that my belief in my freedom does not have to prevent me from pursuing causal explanations. Natural causality can remain the principle of explanation despite the presence of freedom in our experience. A free agent can give novel directions to causal processes in the world without cancelling their causal intelligibility. To believe in freedom does not take away the value and rigor of the scientific explanations. In other words, *one does not have to be a strict determinist to conduct successful scientific research*.

If this is true, conceiving the presence of divine freedom in miraculous events does not have to prevent one from searching for the underlying causal relations realizing these events. Both divine freedom and natural causality may be present in these moments in a state of reconciliation.

Such a view of miracles may also imply that the causal nexus of the world may endlessly be pregnant with novel and extraordinary possibilities. If the causal capacity of the universe can translate such extra-habitual and extraordinary demands of divine freedom into actual realities, then if we can tap into proper causality by using our freedom, we can also achieve extraordinary results. As such, miracles can be perceived as invitations to inquire into inexhaustible causal possibilities concealed within the universe. Scientific activity can be seen as precisely such an inquiry.

[32] Perhaps, in this context, miracles can also perform a heuristic role. They can be seen as special events leading us to the specialness of all events.

To conclude, I believe the Islamic participatory account of causality could preserve the reality and awe-inspiring quality of miracles as well as the presence of natural causality in these events. Perhaps, then, miracles can be seen in their uniqueness without turning them into science-stoppers or metaphors.

5.3 The Question of Divine Presence

The Islamic participatory view of causality is based on a very robust presence of God, as the very notion of participation suggests. Once we understand that God is pure *wujūd* and bestows *wujūd* upon all essences-possibilities, God is no longer the distant first cause or the first mover. He is the immediate "principle (*mabdaʾ*) and giver (*mufīd*) of existence." As such, an Islamic participatory account of causality leads to a very strong sense of divine presence in the world. For, *wujūd* remains as the constant background of all causal activity. This secures a certainty about the divine presence through our precognitive awareness of *wujūd* as existence and consciousness. *Wujūd* is always intuited before and in the causal relationships of existents. When the divine presence is constructed through existence, God is known as the absolute and infinite ground of all natural acts. It is important to see here that the perception of divine presence through *wujūd* does not compete with natural explanations. It only offers a metaphysical framework to apprehend the divine presence without ruling out natural explanations.

At this point, a critic might argue that such a robust conception of the divine presence might imply God's direct involvement with evil in the world. How can the divine transcendence and purity be protected? Is God also causing the evil in the world? Perhaps this objection can be answered in the following way. Recall that a possible existent is conceived as a combination of existence (*wujūd*) and essence (*māhiyya*) and the Necessary Existent as "pure existence." To say "pure existence" is to say "pure good (*khayr maḥḍ*)" as already discussed. So, what comes from God to the possible existents is "pure existence" and, thus, "pure good." Also recall that essences are conceived as principles of delimitation and differentiation of *wujūd*. So, "pure good" coming from God is necessarily delimited in the essences of possible existents. This delimitation is necessary, for possible existents are "other" than "pure existence." And, it is this delimitation of *wujūd* in essences that implies a departure from pure good, and hence imperfections and evil. In a way, the pure light of existence radiating from the Necessary Existent becomes feebler in the essences of possible existents as it illuminates them. This erosion of the divine light in possible existents is metaphysically necessary, for by definition, all possible existents have delimiting essences. At this point, one can say *all acts are fully from God and from the*

creature to the extent that the creature participates in the perfection of divine nature. And, actions belong to the creature to the extent the creature diverges from the perfection of divine nature.

5.4 The Question of Divine and Creaturely Freedom

How can creaturely and divine freedom be established by the Islamic participatory account of causality? Again, as discussed in the first section, this question can be approached by starting from the two central notions of Islamic metaphysical tradition: existence (*wujūd*) and essence (*māhiyya*).

First, *freedom in the created order* can be understood by starting from the notion of existence (*wujūd*). Recall again that the Necessary Existent is conceived as "pure existence." Then, all divine attributes are traced back to the undifferentiated purity of the divine essence. In other words, all divine qualities such as the divine will, power, and knowledge are perceived as concomitants of pure and infinite existence. Now, with the expansion of existence upon possible existents, these qualities are shared with the created order. Due to our gradational (or analogical) participation in pure existence, we also become qualified with the divine qualities to the extent our essences allow. Freedom in the created order can be traced back to our participation in divine existence. In other words, human individuals can experience freedom to the extent they participate in *wujūd* because by participating in the divine existence, they also participate in the divine qualities, including divine freedom. Our participation in the divine reality becomes the ground of our freedom, value, and dignity.

Second, the question of freedom in the created order can also be approached by starting from the notion of *essence* (*māhiyya*), as examined in the first section. Recall that an individual being receives existence from God in accordance with its essence. These essences can also be referred to as capacity (*istihqāq*), right (*ḥaqq*), particularity (*khusūsiyya*), receptivity (*infiʿāliyya*), and possibility (*imkān*). It is important to notice here that essences of possible existents are not to be conceived as determined by God, although they are grounded and known by God. It is possible to conceive essences-possibilities as uncreated (*ghayr majʿūl*) concomitants of the abundance and infinity of the pure existence of God. Essences are also eternally known by God. And, in their relationship with the divine knowledge, they have a certain priority, for the knowledge follows the known (*al-ʿilmu yatbaʿu al-maʿlūm*).

It is this *co-eternity and uncreatedness* of essences-possibilities-knowns (*māhiyyāt-mumkināt-maʿlūmāt*) that might allow us to conceive them as principles of creaturely freedom. God does not determine what type of essence a possible existent has although God knows all essences as they are and

existentiates them as they are. Although we are totally dependent upon God for our existentiation, in terms of our essence, we can be seen as uncreated, uncaused, and free.

How about *divine freedom*? I think, in light of what we have discussed thus far, divine freedom can be conceived from ontological and moral perspectives. From an ontological point of view, we can consider the issue by starting from the notion of existence (*wujūd*). First, if the divine essence is pure existence, God can be conceived as free due to infinity, expansion, and plenitude of the divine essence. As the source and possessor of all possibilities, God is free. Second, the Necessary Existent exists due to Itself and everything else exists due to It. The Necessary Existent, then, does not have antecedent causes. It is then an uncaused cause. Therefore, It is free.

From a moral perspective, the identity of pure *wujūd* with pure good (*khayr maḥḍ*) removes the distinction between God and morality. All absolute moral qualities can be seen as concomitants of the purity of *wujūd*. This is to say that all moral values are different manifestations of the divine essence. Morality is one and the same with the divine essence. If so, God's conformity to moral values such as justice is His conformity to Himself. And, conscious and volitional conformity to one's own essence is the definition of freedom. There is no outside cause effecting, imposing, or determining the divine acts other than the divine essence Itself. Thus, all acts of God are absolutely free.

At this juncture, one can find a reconciliation of freedom and necessity in the divine acts. A sort of necessity can also be conceived in the divine acts without negating divine freedom. This necessity stems from the divine perfection because if God is necessitated, He is necessitated by His own absolute perfection, not by anything outside.[33] Such necessity does not negate freedom. God's conscious, volitional, and compassionate conformity to His own perfect essence is necessary and free. The presence of necessity in the divine acts does not take away divine freedom, although it negates the divine arbitrariness. God does what God is, necessarily and freely.

So, the divine perfection introduces both freedom and necessity. The Real is free due to Its perfection and necessitated by Its perfection. Within the plenitude of *wujūd*, freedom and necessity are reconciled. In this reconciliation, they find their perfection. Due to the presence of necessity in God, divine freedom saves itself from arbitrariness. Due to the presence of freedom, the divine necessity saves itself from compulsion.

[33] As Abu Hanifa asks, "[D]oes God manifest the world as He eternally knows it or in a different way? If the latter, then His knowledge turns into ignorance (*jahl*)." See Sabūnī nd, 149.

Conclusion

In this study, I examined three major accounts of causality offered by Islamic intellectual and spiritual traditions and their possible bearings upon the contemporary discussion of religion and science. I discuss the viability of these accounts in terms of their strength in encountering four critical challenges for reconciliation of religious and scientific modes of explaining the world. The proposed account of causality should be able to (1) preserve *scientific rigor* without imposing a priori limits on scientific research or falling into *interventionism*; (2) account for *miracles* without turning them into science-stoppers or metaphors; (3) preserve the *divine and creaturely freedom* without sacrificing the causal rigor in the world; and (4) establish a strong sense of *divine presence* in the world. I am aware that some of these tasks are not central to the scientific study of the world; however, they are theologically and morally essential, and if we are looking for a genuine reconciliation, they cannot be discarded.

In light of these tasks, as it pertains to the *Muʿtazilite account of causality*, the following can be observed: The Muʿtazilite account, due to its insistence on the causal necessities and intelligibility of the world, can preserve the guiding principles of the scientific activity such as that the natural processes are lawful, regular, and calculable. Even in the cases of miracles, Muʿtazilism insists, the principle of causality is preserved. Moreover, the Muʿtazilite theology allows us to "marginalize" miracles to the extent that they may be happening only once in the lifetime of the universe. Thus, these extremely low-probability events should not influence how we scientifically study the world, especially if causality is preserved even in these cases. As such, in my view, Muʿtazilism can secure the causal rigor of natural processes and pave the way for a serious engagement with physical sciences.

However, there are also challenges one can pose to the Muʿtazilite account. For example, although the major Muʿtazilites support the idea of causal miracles, it is difficult to find any further explanation in their writings about how the principle of causality and miracles can actually be reconciled. The Muʿtazilite account may also be susceptible to challenges concerning divine freedom, although it establishes creaturely freedom with an admirable rigor. I also discussed how the issue of divine freedom can be addressed within the Muʿtazilite paradigm. Another difficulty can be found in how the Muʿtazilite account of divine causality might lead to a certain loss of divine presence. Muʿtazilites remove the divine causality from important parts of the world to establish creaturely agency and to save divine moral perfection from involvement with evil in the world. The issue of divine presence becomes especially evident when the Muʿtazilite account is compared to competing Islamic

occasionalist and Islamic participatory accounts of causality. The school also appears to presume an intrinsic incompatibility between divine causality and creaturely causality.

Concerning the *Islamic occasionalist account of causality*, the following can be observed: This account can be interpreted in a way that preserves the major principles of scientific methodology. Based on the notion of "divine habits," one can argue God creates the world in a consistent fashion. The world is not an arbitrary show or an unintelligible chaos. The intelligibility of the world can be preserved through constant and regular conjunction of events by God, although there is no causal necessity connecting them. Islamic occasionalism also robustly preserves the divine presence. The idea of the constant recreation of the world and the permeation of the divine power and will to every part and instant of the created order establishes the absolute dependency of the world on God.

However, Islamic occasionalism is also susceptible to serious challenges, and without addressing them, it is difficult to perceive it as a compelling option, in my view. The Islamic occasionalist concepts such as "preference without reason" (*tarjīh bi-lā murajjīh*) might easily erode scientific unyielding insistence on identifying "reasons" for natural events. We may also be losing the very reality of the "divine habits" when we remove all causal efficacy from the world. Another challenge stems from the Islamic occasionalist view of miracles. The perception of miracles as nullifications of the "divine habits" that secures regularities in the world poses a serious difficulty, suggesting inexplicable gaps in natural processes and a priori limits to scientific explanations. Moreover, Islamic occasionalism does not allow a perception of miracles as extremely rare phenomena as easily as the Muʿtazilite account does. The robust accentuation of divine freedom, the removal of causal necessities from the world, the acceptance of moral arbitrariness in God, and the approval of the possibility of miracles not only from prophets and saints but also from impostors and liars do suggest that miracles can be, and even should be, seen as immediate possibilities. When we theologically fail to marginalize the nullifications of strict regularities, this perception of causality may easily distance one from an unyielding insistence on the uninterrupted causal continuity of the world, which is the most fundamental presumption of the scientific method.

Another, perhaps the major, difficulty for Islamic occasionalism is creaturely freedom. When we remove all causal efficacy from the world, we also appear to lose human agency and freedom. Islamic occasionalism attempts to solve this problem by proposing the notion of "acquisitive power" (*kasb*). However, it appears that even this acquisitive power is under the influence of the divine

causality. Different suggestions to solve this problem also suffer from serious difficulties. If we cannot establish genuine freedom and a real "uncausedness" in the created order, then human agency and responsibility appear to collapse. This problem brings about a list of other serious theological problems related to theodicy and divine justice.

Regarding the *Islamic participatory account of causality*, the following can be observed. In my view, this account of causality can be understood in a way that preserves the guiding principles of scientific methodology, such as lawfulness, consistency, and precision of natural processes. For, it establishes the reality of natural causality within the larger context of the divine existence (*wujūd*). All causal activity is possible due to the participation of beings in the divine existence and actuality. God does not compete with natural causality, it becomes the very source of it. As such, one does not need "gaps" to establish the divine causality. If *wujūd* is the principle and permanent background of all causal relationships, then no scientific theory should be seen as "theologically risky." Thus, in my view, Islamic participatory accounts can secure the rigor of causal processes in the world and can pave the way for serious engagement with the natural sciences.

Islamic participatory view of causality also strongly preserves *the divine presence* through our participation in divine existence. God is not a distant first cause but present in all beings through their innermost principle, existence, that is immediately known to us, perhaps before any other cognitive process.

I also argued that the Islamic participatory account of causality can secure *creaturely and divine freedom*. Our participation in the divine reality is the ground of *creaturely freedom*. In accordance with our share of the divine existence (*wujūd*), we participate in the divine qualities, including divine freedom. In other words, we are free by participating in divine freedom. I also argued that the idea of the "uncreatedness" of essences-possibilities-knowns (*māhiyyāt-mumkināt-maʿlūmāt*) could provide another perspective to affirm a genuine uncausedness and, thus, freedom in the created order. Similarly, *divine freedom* is preserved. The Necessary Existent can be conceived as free due to the infinity, vastness, and plenitude of Its essence that is *pure existence*. The Necessary Existent is also free because It is due to Itself and, hence, an uncaused cause of Itself. From a moral perspective, the identity of *pure wujūd* with pure good (*khayr maḥḍ*) could allow us to see the divine conformity to the moral values, such as justice, as an act of freedom. The necessity of conformity between God and moral values does not negate divine freedom but only perfects it. In God, freedom and necessity are reconciled. It is in this reconciliation that we find the perfection of freedom, for it is saved from arbitrariness, and the perfection of necessity, for it is saved from compulsion.

Per *miracles*, I offered a possible interpretation. I proposed to think about miracles through the lenses of the reconciliation of freedom and causality in human experience. This reconciliation that is immediately present to us could allow us to conceive a similar reconciliation of divine freedom and natural causality. Then, miracles can be seen as manifestations of divine freedom that are translated into real events through natural causality. I believe if the Islamic participatory account is interpreted in this way, it might have the capacity to reconcile the Muʿtazilite view of miracles, which preserves natural causality and the Islamic occasionalist view of miracles, which preserves divine freedom. If so, such perception can secure the reality and awe-inspiring transformative quality of miracles as well as the presence of causal relations in these events. The uniqueness of miracles can be affirmed without turning them into science-stoppers or metaphors.

One of the most distinct advantages of the Islamic participatory account is that it sees a compatibility of natural causality and divine presence in the world. For, all causal relations are possible due to the participation of beings in the divine existence and actuality. God's pure existence is the background of all causal relations. Moreover, both causality and freedom follow from the divine nature. In strict causal regularities, natural laws, and mathematical necessities, we hear the echoes of the divine constancy. In freedom, novelties, and unceasing change, we witness manifestations of the divine infinity. As such, neither freedom-novelty nor causality-necessity is extrinsic to the divine nature. Thus, God does not need to compete with natural causality. The friction between divine presence and natural causality is removed. Causal necessities, strict regularities, as well as creaturely agency and freedom are preserved as concomitants of the divine nature.

The reconciliatory success of the Islamic participatory account invites us to think about the Muʿtazilite and occasionalist accounts of causality as parts of a larger investigation into the nature of the world and the divine reality. These accounts provide us with two distinct perspectives starting from the notions of freedom and necessity. These perspectives may appear in a state of clash at a certain level. However, within the larger context of *wujūd*, they can be reconciled. As such, Islamic participatory accounts do not negate the other two competing theories. It simply contextualizes them.

To conclude, in my view, the Islamic participatory account of causality appears to encounter four challenges more effectively than the Muʿtazilite and the Islamic occasionalist accounts of causality. Perhaps the theoretical possibilities of the Muʿtazilite and Islamic occasionalist accounts might not yet have been exhausted; however, despite their advantages, theological and

philosophical difficulties remain, and they need to be resolved before these accounts can be considered as compelling options for the task.

Due to these considerations, I believe that the Islamic participatory account of causality grounded on the notions of existence (*wujūd*) and essence (*māhiyya*) offers a more promising path for reconciling religious and scientific modes of explaining the world.

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Islam and the Sciences

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