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SECONDARY CAUSALITY IN THE WORLDS OF

FAKHR AL-DĪN AL-RĀZĪ

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Abstract

This study builds on the work of Ayman Shihadeh, Bilal Ibrahim and Michael Noble, among others, and explores the place of secondary causality in scientific and theological accounts of the universe offered by the Ash‘arī philosopher-theologian, Fakhr al-Dīn al-Rāzī (d. 1210). Three of his works, the *Mabāḥith al-mashriqiyya*, the *Sharḥ al-Ishārāt* and the *Maṭālib al-‘āliya* provide the primary focus.

The study investigates how Rāzī, a thinker in the Ash‘arī tradition, discusses secondary causality in his critical but creative dialogue with Ibn Sīnā’s thought and with the wider philosophical traditions of East and West. It traces how he develops a distinctive account of the world and its relation to God that is philosophically respectable and satisfies Ash‘arī *kalām*’s concern to protect divine power and freedom of action.

The investigation is set in the context of Rāzī’s account of the content and substructures of the universe, his epistemology and logic and his treatment of *kalām* and Avicennan arguments for the existence and wisdom of God. It analyses his response to Ash‘arī criticism of philosophical positions on divine freedom, God’s knowledge of particulars, the origination of the world and the resurrection of the body. It reflects on his own deeper purposes and commitments apropos reason, salvation, science and religion.

The argument concludes that Rāzī does accept some form of secondary causality throughout his work. Though he is not an Ash‘arī occasionalist, he nevertheless answers a major theological concern of Ash‘arism, and affirms the absolute sovereignty of God over all events, while also affirming a universe that includes natural and intelligent agent causes. In the course of his writing, he moves beyond narrow *kalam-falsafa* debates into an eclectic search for universal wisdom guided by reason and confirmed by revelation.

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Conversations have been very important throughout, and I am much indebted for fruitful exchanges to Professor Charles Burnett, Hanna Erlwein, Francesco Zamboni, Maryam Shehata, Bea Bottomley, Vivian Brown and Tariq Mir. Charles Burnett's Arabic philosophy reading group at the Warburg has been a mainstay during this time, offering both good company and an invaluable opportunity to deepen understanding of the wider context of Rāzī's work. Exploring some of the myriad parallel approaches, in the company of those with a deep knowledge of the language and the texts, has enriched my understanding of the language of philosophy and the nature of *kalām-falsafa* debate to the benefit of this study.

For language acquisition itself, I am very grateful to Ahmad Alkhashem and Wael Odeh for their Arabic teaching in my first two years at SOAS, without which it would not have been possible for me to access the range of texts necessary for this study.

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Introduction

This study explores the place of secondary causality in scientific and theological accounts of the universe offered by the Ash‘arī philosopher-theologian Fakhr al-Dīn al-Rāzī (d. 1210), with a primary focus on three of his works, the *Eastern investigations* (*al-Mabāḥith al-mashriqiyya*), his *Commentary on the pointers and notes* of Ibn Sīnā (*Sharḥ al-Ishārāt*) and his *Higher enquiries from the science of divinity* (*al-Maṭālib al-‘āliya min al-‘ilm al-ilāhī*).

The quality of his thought and of his impact on subsequent generations of thinkers has made him a subject of growing interest to western scholars over the last three decades. Of particular interest is his creative position with respect to two dominant strands of the Islamic intellectual life of his time that for many of their proponents were considered both independent and incompatible: *kalām* in the Sunnī school of Abū l-Ḥasan al-Ash‘arī (d. 936 CE) and *falsafa* as it evolved in the light of the work of Abū ‘Alī ibn Sīnā (d. 1037 CE).

There were, of course, many *falsafa* writers before and after Ibn Sīnā, however (as Ayman Shihadeh puts it) his philosophical system ‘appeared to many to surpass, even abrogate previous philosophy’ and thus became the main reference point for later intellectuals.¹ Rāzī’s distinctive response is a gradual synthesis of *kalām* and *falsafa*, so that (again in the words of Shihadeh) ‘he presents for the first time, an ‘Islamic Philosophy’.

Secondary causality is at the heart of the perceived incompatibility. Al-Ash‘arī himself advocates a radical occasionalism.² Nothing happens in the world other than the phenomenal properties (accidents) God creates in its bare atoms from moment to moment. This position on causality is driven by a theological concern to defend the absolute power of God freely to perform God’s will in the world, and the belief that this is incompatible

¹ Shihadeh 2005: 142.

² Dhanani 1994; Perler and Rudolph 2000: 1-56.

with rival sources of agency, whether freely choosing humans or material elements acting according to their natures.³

Ibn Sīnā, however, building primarily on the Peripatetic tradition of Aristotle, presents a creation of noetic entities, souls and celestial and sublunary bodies, emanating from an eternal One. Their multi-level interactions in a complex system of causes produce the world that scientists (and theologians) investigate. To many of al-Ash‘arī’s later followers, Ibn Sīnā’s system appeared not merely to allow rivals of God back into the universe, but even to deny God real agency, since it proposed a One from whom the universe *necessarily* emanated. Many of Ibn Sīnā’s ideas were expressly attacked in the *Incoherence of the Philosophers (Tahāfut al-falāsifa)* of Ghazālī (d. 1111), and Rāzī’s contemporaries al-Mas‘ūdī (d. before 1208) and Ibn Ghaylān (d. ca 1194) also testify to a living tradition of criticism and polemic.⁴

This study, then, will investigate how Rāzī, as a thinker in the Ash‘arī tradition, approaches the thorny issue of secondary causality as he enters into a critical but creative dialogue with Ibn Sīnā’s thought and engages with the wider philosophical traditions of East and West. We shall attempt to retrace some of his steps in developing a distinctive account of the world and its relation to God that is philosophically respectable and satisfies Ash‘arī *kalām*’s core theological concerns.⁵

³ Al-Ash‘arī was primarily rejecting two doctrines (the origination of God’s attributes and real human freedom) associated with the Mu‘tazilī school of *kalām* in which he trained. However his own *Maqālāt al-islamiyyīn* shows that the range of available Mu‘tazilī views on key topics was very varied and that much of al-Ash‘arī’s own doctrine is culled from pre-existing (if occasionally marginal) opinions.

⁴ See Shihadeh 2015a and 2013a.

⁵ Since this thesis was originally submitted, Frank Griffel has published his magisterial account of post-classical Islamic philosophy (Griffel, 2021). Much of it is taken up with exploring the same range of background questions concerning Rāzī, with a breadth and depth beyond the scope of this study and the capacities of its author. Though it is not possible to engage with his work in any depth, for the benefit of the reader, in this corrected version, I draw attention to some of the areas where my conclusions converge with or diverge from those of Griffel.

§1 Life and (select) works⁶

Fakhr al-Dīn al-Rāzī was born in Rayy, (now a suburb of Tehran) to the local preacher in 1149 CE.⁷ He initially trained as an Ash‘arī school *kalām* theologian or ‘Mutakallim’, first under his father, Ḍiyā’ al-Dīn al-Makkī (d. ca. 1164) the pupil of al-Anṣārī (d. 1118), himself a pupil of al-Juwaynī (d.1085), the Ash‘arī theologian who taught the key figure of Ghazālī (d. 1111).⁸ Later he studied (on the road) under a number of masters. He struck out on his own intellectually, engaging intensely with the work of Ibn Sīnā, as well as with medicine, astrology and alchemy and the occult, and creating, in his latter years, a ‘new synthesis’ of *kalām* and *falsafa*.⁹ He managed to maintain good relations with the regional rival dynasties of the Khwarazmshahs and Gurids, receiving support and honours from each.¹⁰

Griffel considers how Rāzī managed to maintain good relations with the two sides, who ‘during all these years... were in open war...over the possession of the rich province of Khurasan’, concluding that both parties had high regard for his scholarship and were vying for his services. One of the Gurid factions in particular desired to establish a rationalist form of Sunnī Islam in their territories in the face of the dominant popular literalist and anti-rationalist religion of Karrāmiyya and Ḥanbalī groups. The former had a large following in Transoxania as well, and according to Margaret Malamud, were not just anti-rationalist, but were also social revolutionaries.¹¹ The fact that Ash‘arīs were neither may explain the appeal of Rāzī’s high-quality religious rationalism for those trying to govern the

⁶ Griffel explores the detail of Rāzī’s career in its wider context in Griffel 2021: 263-304.

⁷ See Lagarde 2008: 18-20; Shihadeh 2006: 4-5; Arnaldez 1960: 311-313; Griffel 2007: 313-344.

⁸ Shihadeh 2013b: ix.

⁹ Shihadeh 2005: 178.

¹⁰ Griffel 2007: 328, 332-340. For his developed account of the political and social context of intellectual enquiry and its patronage in the region, see Griffel 2021: 25-59.

¹¹ Malamud 1994: 37-51.

region. Rāzī engaged in hefty debate with the Karrāmiyya, and at one point was run out of town.¹²

The ongoing projects of the last decade or more of his life were a vast commentary on the Qur'an, exploring the meanings hidden within the text and an extensive synthesis of philosophical theology, the *Maṭālib al-ʿāliya*. He died in Herat (where one of his Gurid patrons had earlier allowed him to set up school) in 1210 CE. Along with Ghazālī he is identified as one of the renewers of the Muslim faith by the fourteenth century CE author Tāj al-Dīn al-Subkī.¹³

Our main texts for this study are taken from the last thirty years of his life. We will focus on *al-Mabāḥith al-mashriqiyya fī ʿilm al-ilāhiyyāt wa-l-ṭabīʿiyyāt* (*the oriental investigations into the science of divinity and the natural world*) for Part I and the *Sharḥ al-Ishārāt wa-l-tanbīhāt* (*commentary on the pointers and notes*, sc. of Ibn Sīnā), for Part II, with a nod to *al-Mulakhkhaṣ fī l-ḥikma wa-l-mantiq* (*the epitome of philosophy and logic*) and the *Nihāyat-al-ʿuqūl fī dirāyat al-usūl* (*the limit of intellects in understanding first principles*) in both parts. *Muḥaṣṣal afkār al-mutaqaddimīn wa-l-mutaʾakhhirīn min al-ʿulamāʾ wa-l-ḥukamāʾ wa-l-mutakallimīn* (*the compilation of the thought of the scholars, philosophers and mutakallimūn ancient and modern*) and *al-Maṭālib al-ʿāliya min al-ʿilm al-ilāhī* (*the higher enquiries from the science of divinity*) will provide the material for the bulk of Part III along with the Physics section of the *Sharḥ al-Ishārāt*.¹⁴

The *Mabāḥith* (c.1180) is Rāzī's first attempt to present a thorough, positive theological account of the universe in philosophers' terms that meets at least some of the

¹² Griffel 2007: 336. Griffel 2021: 283 ff. There are also reports that Rāzī had to be buried in secret, for fear his enemies would dig him up, though here Griffel is sceptical (Griffel 2021: 299).

¹³ Shihadeh 2006: 141.

¹⁴ For the relative (and occasionally exact) dating of these within Rāzī's corpus followed here, see Shihadeh 2006: 6-11; Shihadeh 2014b: 2. For a narrative account of the progression they evidence, see Shihadeh 2005: 163-177.

criticisms of Avicennan *falsafa* raised in Ghazālī's *Tahāfut*.¹⁵ The *Mulakhkhaṣ* (c.1183) offers a slightly later more concise reworking and development of the same material, and usefully has an expanded section on logic and epistemology.

The earlier *Nihāya* (c.1175, though referencing the *Mabāḥith* in a later recension) is written in *kalām* mode. It establishes that philosophical logic and epistemology are superior to the classical *kalām* rules of argument as tools for fulfilling the religious injunction to investigate the world. However, it is less interested in an integrated, scientific understanding of the world than in attending to the neuralgic issue of its origination, within the standard sequence of *kalām* topics. It does, however, include responses to further doctrines of the *falāsifa* and other faith-traditions.

The *Sharḥ al-Ishārāt* (c.1184 – 1185) is Rāzī's creative exegesis of Ibn Sīnā's *al-Ishārāt wa-l-tanbīhāt* (*Pointers and Notes*), a gnomic, if not cryptic, set of summary statements on logic and physics. The logic section is particularly useful, because Rāzī's modifications of Avicennan logic and epistemology reveal his own concerns and priorities, some of which will appear in action in the *Maṭālib*.

The *Muḥaṣṣal* (1190s?) is a compendium of arguments from the different traditions within *kalām* and *falsafa*, focusing more on philosophical topics directly relevant to theological questions. Though he speaks with an Ash'arī 'we', and affirms some recognisable *kalām* positions, his text is intriguing for the way it makes space for common ground between different schools, and resolves some disputes while leaving others open. In its arraying of parallel arguments from different traditions, it reads as a preliminary

¹⁵ Specifically: God as *choosing* rather than *necessarily necessitating*; the non-eternity of the world; God's knowledge of particulars; the resurrection of the body. For a detailed sketch of the chronology and trajectory of Rāzī's works see Griffel 2021: 307-340.

sketch for the *Maṭālib*. It was certainly read as a substitute for the more intimidating work by later generations.

The *Maṭālib* itself (c.1207-1209), though unfinished, provides both a discussion on the relation between reason and belief in God, and powerful examples of what can be achieved through thoroughly elaborated argument, setting *kalām* and *falsafa* treatments of topics side by side, noting convergences and acknowledging the limitations of argument. The topics blend the directly theological (existence of God, wisdom of God, theodicy, other attributes of God, prophetology and humanity in relation to God) with questions recognised by peripatetic philosophy and *kalām* alike as intimately bound up with rational accounts of the divine: form, matter, body, time, place, void, nature, necessity, soul, causality, of course, and, with it, agency.

These texts will allow us to trace common threads illustrating Rāzī's thinking on secondary causality, and to observe the development of his synthesis as that thought matures.

§2 The focal points of this study

'Secondary causality' comes in several guises. Aristotle's science describes a quasi-autonomous Nature operating with a complex system of causes (secondary causes), whose ultimate source of being and change is God, the first cause. Al-Ash'arī's world is without natures, and has one unique divine cause of all things, generating predication events in atoms from moment to moment. There are no secondary agent causes, though some accidents implanted in atoms are the formal cause of perceptible properties. For Aristotle, on the other hand, understanding the complex of secondary causes and agents is precisely what makes the world intelligible. There is a spectrum of positions in between, with Ibn Sīnā in some respects already a few shades away from Aristotle and closer to al-Ash'arī.

Our task is to see where Rāzī ends up on that spectrum. That requires a number of points of focus.

(a) *Universes*

Causal accounts are observer narratives about the relationships between entities within a universe. We will need to look at the contents and substructures of the different universes that Rāzī considers. The list is long, including matter, form, prime matter, atoms, accidents, motion, generation, souls, time, space, infinity, void, powers, stars, spheres, talismans, intellects, genera, species. Rāzī's engagement with the topics goes at times into mind-numbing detail. But it is only when we have a picture of the universe as Rāzī envisages it that we shall be able to see where he stands on the question of secondary causality.

(b) *Epistemology and Logic*

Because causality belongs in an observer narrative, we have to consider epistemology and logic. Several arguments deployed to undermine Peripatetic notions of causality tap into the Hellenic sceptical tradition. The scientific language of the Peripatetics, in contrast, carries assumptions about a deep metaphysical connection between the necessitation of argument and necessitating causality in the world. We want to assess how far Rāzī appropriates the epistemology of the Peripatetics or whether he shifts towards something like a moderate Humean scepticism about scientific fact, as some of the arguments of Bilal Ibrahim might suggest.

(c) *Purpose (1) The rational apologetic of kalām*

We need to develop a sense of how far secondary causality can sit with Rāzī's own apologetic purposes. As an Ash'arī *kalām* thinker he is clearly committed to the rational proofs of the existence and wisdom of God, and to offering an account of God's attributes,

human agency, prophetology and the miracles that supports divine revelation. We will observe him recognising how aspects of peripatetic thought can support those goals.

(d) *Purpose (2) Challenging four errors of falsafa*

Many of Rāzī's works are indeed written in *falsafa* mode. Under challenge, he claims that precisely these works (including the *Mabāḥith*, the *Mulakhkhaṣ*, and the *Sharḥ*) successfully defend orthodox positions. He highlights four critical *falsafa* errors that he claims to refute: (1) God 'necessarily necessitates', (2) God does not know particulars, (3) the world is eternal (4) there is no bodily resurrection.¹⁶ We will use these self-acknowledged criteria of success to explore how Rāzī modulates his synthesis from the *Mabāḥith* (Part I), to the *Maṭālib* (Part III).

(e) *Purpose (3) Religious politics, scientific method, revelation and universal reason, personal salvation.*

More diffusely, we will keep an eye out for his wider concerns around the intellectual project of rational theology. Several suggestions of recent authors in this regard affect how we read his claims in different texts.

How sensitive does he have to be to the sensibilities and capacities of his readers? Frank Griffel has suggested that Rāzī works with a 'double truth' approach, in which the higher-status truths of philosophy sit alongside the (occasionally divergent) truths of revelation that are good enough for ordinary believers.¹⁷ Thus he writes differently for different audiences.

¹⁶ *I'tiqādāt*, 91-92. Griffel points out that this work, originally written in Persian (and this section in particular) is probably a response to his brush with heresy hunters in Fīrōzkōh in 1199CE. Griffel 2021: 283-287

¹⁷ Griffel 2018: 205-216. Griffel suggests there is a sharp distinction between how Rāzī writes in 'philosophical' books and how he writes in 'theological' books, a thesis developed in Griffel 2021.

Is his life's project, as Shihadeh proposes, creating a genuine synthesis, a truly Islamic philosophy? Or is there a gulf between Rāzī's theological concerns and methods (as represented in, say, the *Maṭālib*) and his philosophical concern to develop a new science, as represented in the *Mabāḥith* and *Mulakhkhas* as Ibrahim suggests?¹⁸

What does he think about his life's work in the end? Does he become more sceptical as Shihadeh has suggested, placing more focus on spiritual insight from the Qur'ān and the pursuit of personal perfection?¹⁹ Noble has explored Rāzī's spiritual concerns and reads his presentations of the practice of magic and astrology as hinting at a new pathway to spiritual perfection.²⁰ For Lagarde, Rāzī's commentary on the Qur'ān helps the reader to recognise the cosmic and theological insights hidden in the text, nevertheless, human reason *can* still be capable of achieving understanding of the physical world.²¹ Street examines an ancient polemical claim that Rāzī's final 'Testament' shows him to be repudiating not just philosophy but reason and *kalām* itself.²² His careful reading of the text suggests, however, that Rāzī is actually commending his intellectual life's work to the reader, and simply wants to acknowledge its inevitable limitations.

To summarise, we shall be looking at Rāzī's approach to secondary causality in the contexts of (a) his account of the content and substructures of the universe (b) his account of epistemology and logic (c) his treatment of *kalām* and *falsafa* arguments for the existence and wisdom of God (d) his defence of specific Ash'arī positions on divine freedom, God's knowledge of particulars, the origination of the world and the resurrection of the body (e)

¹⁸ Ibrahim 2020: 71, fn. 9.

¹⁹ Shihadeh 2006: 182-203.

²⁰ Noble 2021: 229.

²¹ Lagarde 2008: 36.

²² Street 1997: 135-146. He attributes the perception that this constituted a death-bed repentance to a partisan paraphrase by Ibn Taymiyya (d. 1328). Street 1997: 138.

indications of his own deeper purposes, commitments and diplomatic manoeuvres in his presentation of reason, science and religion.

§3 Recent literature important to this study

Shihadeh, in addition to his account of Rāzī's ethical theory in *Teleological Ethics*, has written widely on the intellectual milieu in which Rāzī operated and Rāzī's own reaction to it. In *Doubts on Avicenna*, he presents the critical commentary of the older contemporary (and sparring partner) of Rāzī, al-Mas'ūdī, on a range of topics in physics and metaphysics from Ibn Sīnā's *Ishārāt*.²³ Among other things, it helpfully reveals that a choice of some form of Peripatetic hylomorphism over Mutakallim atomism appears to be respectable in contemporary *kalām*.

Shihadeh also presents a discussion and text of the triumphant exposure of errors in Ibn Sīnā's canon of medicine by Ibn Ghaylān, another of Rāzī's sparring partners.²⁴ Shihadeh reads this as a polemical attack on the whole of Ibn Sīnā's thought achieved not by testing his arguments, but by undermining his credibility as a witness. His comments on an early text by Rāzī responding to Mas'ūdī's critique, and his analysis of the hot topic of 'bodily form' highlight Rāzī's crucial methodological break with his contemporaries, and his option for a critical but *positive* attitude to Ibn Sīnā from within *kalām*.²⁵ Rāzī will reject the presumption in favour of a hostile reading of Ibn Sīnā's text and the limitation of discussion to *ad hominem* refutation. Instead, he will, where possible argue to 'save' a position, even if he eventually disagrees with it, and he will look to discuss a question in a way that considers all possible positions, not just those the opponent happens to have come up with.

²³ Shihadeh 2015a.

²⁴ Shihadeh 2013a.

²⁵ Shihadeh 2014b; 2014a.

Heidrun Eichner's habilitation provides a substantial analysis of the structure and content of the *Mabāḥith*.²⁶ William M. Hutchings' doctorate also offers helpful structural pointers, with a focus on its epistemology.²⁷ Adi Setia has a number of expository articles on elements of Rāzī's physics. Of immediate interest is his article on time and change drawn mostly from the *Maṭālib*.²⁸ Here, according to Setia, Rāzī favours a Platonic account of time as an independent reality. The arguments in the *Maṭālib* for the existence of time have also been carefully examined more recently by Peter Adamson, and his later collaboration with Andreas Lammer evaluates Rāzī's Platonising account of its essence.²⁹ The development of Rāzī's thinking on time is an important focus of this study, crucial for appreciating his eventual philosophical choice of an atomistic account of basic matter and an account of space that is neither Ash'arī nor Avicennan.³⁰

Ayman Shihadeh's account of Rāzī's ethical theory, and Bilal Ibrahim's analysis of Rāzī's scientific epistemology in different ways set important parameters for investigating Rāzī's views on causality and the substructures of the world. These, together with Noble's work on the *Sirr al-Maktūm* set the scene (and provide some content) for many of the discussions of this study.

Shihadeh: Determinism and Human Action, Pessimism about the World

Shihadeh's *Teleological Ethics* draws on a wide variety of textual sources and incorporates a text of Rāzī's late writing the *Risālat dhamm ladhdhāt al-dunyā* (letter denouncing the pleasures of the world).³¹ Ethics inevitably touches on the issues of agent-

²⁶ Eichner 2009.

²⁷ Hutchings 1974.

²⁸ Setia 2012: 393-409.

²⁹ Adamson 2018b: 65-98; Adamson and Lammer 2020: 95-122.

³⁰ I am grateful to Francesco Zamboni, for pointing this out in conversation in 2019. Adamson has also analysed Rāzī's late account of place/space in the *Maṭālib* in Adamson (2017).

³¹ Shihadeh, 2006: 155-265.

causality and material causality in the world, and some of Shihadeh's conclusions suggest important directions for this project.

The question whether humans, as well as God, have agency in the world is at the heart of the theological debate between the Ash'arī and Mu'tazilī schools of *kalām* and finds its due place in the Rāzī's writings.³² The latter argue for human freedom to affect things in their environment, through the extended transmission of causes (*tawallud* - engendering) originating with their own basic actions. Thus, humans have a real ethical responsibility, the precondition for divine justice. Al-Ash'arī himself strongly denies such freedom, limits human power to act to basic actions, and sees no scope for humans to make any claims about divine justice independently of revelation.

According to al-Ash'arī's account of human action, the basic act of a human (the moving finger) was a necessary result of a momentary power/capacity (*qudra*) created by God in her at that instant. The elements of the extended act (the switch being flicked, the current flowing, the light going on) were *created* by God, according to a regular pattern, and the human *acquired* (*iktasaba*) the extended action (switching on the light). The human does not bring the extended act into being, yet the action is theirs.

Shihadeh notes however, that Rāzī, in a range of writings, advocates a different understanding of *qudra*, whose adherents include Mu'tazilīs, philosophers, Māturīdīs and (of the Ash'arīs), al-Juwaynī. 'Capacity' now refers to physical capability plus freedom-from-constraint, a continuous, predisposing state of a person. This capacity only produces action when combined with a decisive will (*irāda jāzima*) as a form of tipping factor (*murajjih*).³³ *Qudra* is thereby reduced to a state of potential that can exist in the human

³² *Muḥaṣṣal*, 251-259; 416-421 and 455-459. See Gimaret 1978: 401-405. For the Mu'tazilīs 'l'homme produit des actes en autre chose que lui-même, au moyen de causes qu'il produit en lui-même.' For al-Ash'arī, 'la puissance humaine pour al-Ashari est sans effet hors de l'atome même dans lequel elle réside'. Also, Thiele 2016: 226-228.

³³ Shihadeh 2006: 16-19.

agent prior to, as well as during the action and has at least as much in common with a naturalist account of the world as an occasionalist one.

However, Rāzī continues to accept that both power and motivation come from God. The combination of human capacity and human motivation necessitate the act, thus the act belongs to the human agent, but since both of these are ultimately created by God, it is God who ultimately determines the actions of human agents just as much as God determines any other event in the world.³⁴ Nevertheless, this does not commit him to a merely tweaked form of the classical Ash‘arī, occasionalist model. Shihadeh notes the formal similarity between Rāzī’s differentiated position and that of the Peripatetics with respect to material (passive) causes. These are not ‘proper’ causes, but provide the preconditions for divine action.³⁵ This is an important pointer to where we should be looking for Rāzī’s wider understanding of causality in the world vis-à-vis divine action.

Interesting ambiguities in Rāzī’s position appear throughout the discussion of ethics and motivation. Foremost of them is the idea (established by introspection) that we can actually work on our motivations.³⁶ That idea is presumably entailed by the mature Rāzī’s ‘perfectionist theory of virtue’ discussed in Shihadeh’s third chapter and is of a piece with a not-entirely-Ash‘arī interest in the place of soul in the cosmos.³⁷ Nor does it sit easily with a straightforward (divine) deterministic account of human psychology. Another is the scepticism that Shihadeh notes developing in the later Rāzī (along with a Hobbesian pessimism about happiness and the political and social life of humans).³⁸ Rāzī comes to the view that there are a range of philosophical (and theological) questions that we cannot

³⁴ Shihadeh 2006: 41.

³⁵ Shihadeh 2006: 42. In Ibn Sīnā’s spin on the four causes of Aristotle (matter, form, agent, purpose) the first two are passive or perhaps inertial, the latter two are active, initiating new events.

³⁶ Shihadeh 2006: 30.

³⁷ Shihadeh 2006: 109ff.

³⁸ Shihadeh 2006: 155-203.

answer with certainty, but only with probability. Shihadeh notes the roots of this in ancient scepticism, though he points out that it is unclear how this tradition can have reached Rāzī.³⁹

Bilal Ibrahim: Phenomenological Science and Beyond Atoms and Accidents

The sceptical theme hovers in the background of Bilal Ibrahim's doctorate, and its distillation in an extended article from the same year.⁴⁰ Ibrahim argues that Rāzī rejects Ibn Sīnā's logic and epistemology, which allow for knowledge of the essence of things and the deduction of necessary scientific truth, in favour of an approach that begins and ends with the 'concomitants' – the colours, shapes and sizes etc. of things that we actually see – without making any claims about what 'must' lie behind them.

We can therefore analyse and classify objects according to the distinguishing features that present themselves to us and their regular patterns of effects on other objects.⁴¹ However we cannot determine that those distinguishing features belong to a graspable 'essence' nor that a sequence of events necessarily flows from the real nature of their subjects. It is not that objects do not have essences or natures, but that we cannot know what those are, because all we have to go on is those aspects of them that we can see.⁴² The rest is a construction of ours. It may be plausible, but it cannot be maintained with absolute certainty. This means (amongst other things) that we are not in a position to adjudicate between *falsafa* hylomorphism and *kalām* atomism.⁴³

Ibrahim attributes Rāzī's perspective to a close reading of Ibn al-Haytham's (d. ca 1040) work on optics, the *Kitāb al-Manāẓir*, in which the latter suggests that we construct the

³⁹ Shihadeh 2006: 198.

⁴⁰ Ibrahim 2013a.

⁴¹ Ibrahim 2013b: 395.

⁴² Ibrahim 2013b: 409 fn.

⁴³ Ibrahim 2013b: 414.

forms that we see and assign them unity out of the array of colours presented to us. This is very different from the model of Ibn Sīnā, for whom the real, sensible form of the object imprints itself in the sensory organ and is matched to its cognate, a real, intellectual form. Ibrahim describes the science that emerges from the corresponding epistemology as phenomenalist as opposed to essentialist.

A recent article of Fedor Benevich concurs that Rāzī in his response to the Meno paradox rejects any notion of essential, or real definition accessible by spontaneous human enquiry, in favour of immediate concept-acquisition through outer or inner sense.⁴⁴ He puts this move, that seems to threaten the scientific project, in the wider theological context of an Ash‘arī denial of acquired understanding, comparing similar developments in two other twelfth century thinkers.

From the point of view of this project Ibrahim’s thesis leaves open the possibility that Rāzī may be working with a causality (primary or secondary) in what we might call Humean mode: that is, one that is perception-based and without necessity, and which therefore does not interfere with theological concerns about divine omnipotence and does still allow a provisional, Popperian pursuit of explanatory science. In Part II we will largely agree with Ibrahim and Benevich, but conclude that Rāzī is probably *not* a proto-Humean with regard to causation. Wider questions about the nature of his scepticism require a more complex answer.⁴⁵ In a recent article, Ibrahim expands on his thesis specifically on the topics of bodily form, suggesting that Rāzī’s new science rejects peripatetic hylomorphism. We will discuss this in Part III.⁴⁶

⁴⁴ Benevich 2020: 3-14.

⁴⁵ Such as those raised in Shihadeh 2006: 181-203, discussing Rāzī’s *Risāla dhamm al-ladhdhāt*.

⁴⁶ Ibrahim, “Beyond Atoms and Accidents”.

Noble: Perfection through engagement with celestial archetypes

Michael Noble's recent study of the *Sirr al-Maktūm* explores Rāzī's abiding interest in the 'Sabian' traditions of astral and talismanic magic and gives a rich context for the range of cosmological accounts that he discusses at great length in the *Maṭālib*. Following Van Bladel, he points out that although 'Sabian' was a broad-brush term for pagans and idolators of all kinds, there was also a history of legal efforts to identify the Sabians approved in the Qur'ān (2:62; 22:17 for instance). Rāzī himself differentiates between three degrees of Sabian (of varying degrees of proximity to right religion). What they have in common is that they relate individual cosmic beings with sets of individual humans.⁴⁷

For Ibn Sīnā, there is only one source of separable (rational) souls for humans, the 'giver of forms', and thus all souls have the same essence. In the Sabian tradition, different sorts of soul are produced by different celestial spirits, who are their archetypes, and remain in a special relationship with 'their' souls as tutelary spirits. There are therefore different kinds of human soul, but each kind, when it establishes a relationship with its tutelary spirit (its 'true nature') is able to progress towards whatever limit of perfection and power that distinctive nature allows. The end result of the journey is to become an angelic, celestial being, 'angelomorphosis'.⁴⁸

Noble notes the ethical tension between Rāzī's commitment to the pursuit of perfection and the extravagant sexual and bloodthirsty behaviours that are demanded by some of the rituals of planetary ascent. But he suggests that while Rāzī is prepared to include appropriately orthodox criticism of behaviour contrary to the law, he finds the cosmic salvation narrative that lies behind them a compelling alternative to Ibn Sīnā's. There is

⁴⁷ Noble 2021: 6-8. He points out that Rāzī's commentary on the Sabians in the Qur'ān 'equivocates between designating them as privileged *ahl al-kitāb*... and relegating them to an intermediary status between this dignified category and that of degenerate polytheists'.

⁴⁸ Noble 2021: 3. For 'angelomorphosis', see Noble 2021: 52.

potential for something that would be faithfully Islamic but would also acknowledge cosmic forces and the salvific importance of connecting with one's 'perfect nature'.⁴⁹

Rāzī is interested in magical powers over nature conveyed in the course of the spiritual progress towards a set of cosmic relationships mediated by the individual's celestial 'perfect nature'. This hints at a significantly more complex attitude to human agency than the schematic determinism of the will that appears in his more Ash'arī-friendly discussions.⁵⁰ Noble points out one significant theological advantage that this model has over Ibn Sīnā's. For the latter, all souls have the potential to achieve prophetic knowledge and powers. In a quasi-Sabian system, however, there is a nature peculiar to prophetic souls that sets them apart from other mortals.⁵¹

Noble's work also offers important insights into Rāzī's understanding of psychology and epistemology, through the rôle of the *wahm* – the faculty of speculative imagination – and meditative focus on desired outcomes in magic rituals and in prophetic miracles.⁵² This points us again to an interesting dissonance at the human level between the pursuit of perfection and the pursuit of earthly powers, which implies a similar ambivalence in the celestial realm.⁵³ Noble's text, therefore, opens up a space to explore the detail of Rāzī's science against the wider background not only of his theological, but of his soteriological concerns.

⁴⁹ 'Razi never states explicitly that a Sabian science, sanitised by Ash'ari theology is not inconceivable. But it is an inference which he allows his readers to draw.' Noble 2021: 228.

⁵⁰ Noble notes an affirmation of the Ash'arī position on causality in the *Sirr* that manages to be both robust and equivocal. Noble 2021: 228.

⁵¹ Noble 2021: 168-198, 228-248.

⁵² Noble 2021: 198-216.

⁵³ An inevitable clash perhaps between the 'Homeric', occasionally badly behaved deities preserved in the pre-philosophical traditions of astrolatry, and the exemplary 'Platonic' celestial beings of Plotinus and Ibn Sīnā.

Griffel – Rāzī between Ash‘arism and Avicennism in a post-Ghazālian world⁵⁴

Griffel’s new study of post-classical philosophy in Islam, though published since the submission of this thesis, cannot be passed over in this corrected version, since it offers parallel accounts of key areas investigated in this study. Griffel’s work has the overriding aim of decisively laying to rest the ghosts of a post-enlightenment Western scholarship that saw Ghazālī’s condemnation of certain Avicennan positions as ‘unbelief’ (at the end of his *Tahāfut*), as the trigger for the collapse of intellectual freedom and the end of genuine philosophical endeavour in the Islamic world. The first two parts of his book, accordingly, are taken up with a thorough investigation of the persons, texts, politics and social context of Avicennan philosophy and *kalām* from modern Afghanistan to Damascus in the 11th-13th Centuries CE, highlighting Suhrawardī and Rāzī as two major thinkers from the post-Ghazālian era who left a lasting impact on the Islamic intellectual scene.

He determines that, contrary to the claims of an older generation of Western scholars, there is no evidence for a systematic persecution of philosophy in spite of Ghazālī’s *fatwa* calling for those who teach key Avicennan beliefs (about the eternity of the world, God’s knowledge of particulars and the afterlife) to be executed without the traditional legal opportunity for repentance. He examines two cases, where philosophers were in fact executed in this way (‘Ayn al-Quḍāt: Hamadan, 1131; Shihāb al-Dīn Yaḥyā al-Suhrawardī: Aleppo, c.1192), but notes that these were exceptions, whose connection with Ghazālī’s interdict are blurred by a context of local politics and personal animosities alongside (in the case of Suhrawardī) the suspicion of a claim to prophetic status.⁵⁵

In fact (as others have noted) Ghazālī’s intervention prompted the creative flowering of a number of parallel intellectual endeavours in response to an Avicennism, labelled as

⁵⁴ Griffel 2021.

⁵⁵ Griffel 2021: 108-159.

'*falsafa*' and identified by Ghazālī (according to Griffel) as an independent religious sect, by thinkers who self-identified as authors of *kalām* or of philosophy in the wider sense, using the non-partisan term *ḥikma* (wisdom). Ghazālī's own work, with its emphasis on inspirational knowledge, can thus be regarded as a strand of post-Ghazalian philosophy ('Ghazalianism') in this wider sense, which leaves its trace on later authors, including both philosophers and *kalām* authors who engaged philosophically with Ibn Sīnā's writings.

For Griffel, Rāzī provides the one of the main reference points throughout. He explicitly writes works under the separate headings of *falsafa* and *ḥikma*, seeks a middle way in the treatment of Avicennan philosophy and evidences the 'dialectical turn' in philosophical argument foreshadowed by Abū Barakāt al-Baghdādī.⁵⁶ Griffel analyses closely, as does the following study, Rāzī's different treatments of the critical areas identified by Ghazālī and places these in the context of the evolution of the wider intellectual tradition.

In so doing he looks for an answer to a puzzle in the post-Ghazālian intellectual genres, which he believes is particularly evident in the writings of Rāzī. How is it that his writings as a philosopher and his writings as a mutakallim come to such different conclusions?⁵⁷ He suggests that they represent distinctive genres of writing that emerge in the post-Ghazālian intellectual climate, the one (*ḥikma*) presenting theological claims as they can be established by purely rational argument, the other (*kalām*) only accepting the non-demonstrative claims of rational argument insofar as they accord with revelation. He suggests that a context had evolved in which both *ḥikma* and *kalām* writings could legitimately be taught as separate disciplines, the one supportive of more Avicennan positions, the other promoting Ash'arī occasionalism. The limits of rational inquiry according to the differing methods of the two systems created a space in which it was

⁵⁶ Griffel 2021: 481ff.

⁵⁷ A question he raised in Griffel 2018.

possible to live with an intellectual ambiguity about key topics like God's free choice and the eternity of the world.

The theological focal points of Griffel's argument overlap with many of the individual discussions of this study, and I will try to note some of the divergences and convergences where they occur. Most importantly, if he is correct that Rāzī self-consciously writes in two discrete genres throughout his life, and acknowledges that it is impossible to make a final judgment about their respective conclusions, then the argument of this study is misconceived, claiming that Rāzī, in the *Maṭālib*, does finally argue in favour of a specific sort of secondary causality in a specific sort of universe.

However, Griffel himself acknowledges that 'if anything, *al-Maṭālib al-ʿāliya* combines the two genres of *ḥikma* and *kalām* and transcends them', and wonders whether, 'this is the book in which al-Rāzī wished to put down his final assessment of those subjects that are disputed between *ḥikma* and *kalām*.'⁵⁸ He notes some cases (divine freedom and atomism) where Rāzī favours *kalām* positions others (prophecy, psychology and ethics) where the positions are influenced by *ḥikma*. The analysis of this study, however, goes a step further and suggests that the worlds Rāzī prefers in the *Maṭālib* (including God's relation to them) are neither classical Ashʿarī nor Avicennan. Their atomic structure gives them the outward appearance of occasionalist worlds, but their structure and inner relationships demonstrate a clear commitment to a modified hylomorphism and some form of secondary causality. On this reading, the *Maṭālib* is the product of an integrating process that leads Rāzī beyond the dichotomy *kalām-falsafa* to a richer form of *ḥikma* that embraces reason and revelation. The reader will decide if that analysis has any force.

⁵⁸ Griffel 2021: 546. He notes from the *Wirkungsgeschichte* that any such results were poorly received, but that says nothing about Rāzī's intentions.

§4 Structure of this study

The study is divided into three parts. The first part provides some intellectual background to and an analysis of the *Mabāḥith* in the light of our five focal points. Chapter one highlights a number of accounts of the universe from the Hellenic tradition that are significant for Rāzī's thought-world. This yields a table allowing us to compare the causal elements of rival universes more precisely. Chapter two contrasts the universes of al-Ash'arī and Ibn Sīnā in detail, and considers briefly some of the responses to the latter from Ghazālī to Rāzī's contemporaries. Chapter three explores the *Mabāḥith* in the light of the five questions and the preceding background.

Part II looks at Rāzī's response to the epistemological issues bound up with theology and science, primarily through the lens of his commentary on the logic of Ibn Sīnā's *Ishārāt wa-l-tanbīhāt*, but with reference to the *Nihāyat al-ʿuqūl* and the *Mulakkhkhaṣ*. Chapter four considers the problems raised by Ghazālī's sceptical arguments in *Incoherence* 17, the epistemology of subjective and objective certainty, and the connection between the conceptual necessity of logic and definition and the necessity of science and the world embedded in concrete reality (distinguished by Strobino as 'substantial' and 'descriptive' necessity).⁵⁹ Chapter five explores Bilal Ibrahim's thesis that Rāzī is moving away from an essentialist, Avicennan metaphysics towards a phenomenalist approach to scientific enquiry, and goes on to explore Rāzī's account of acquiring knowledge of essences and their entailed accidents in the *Sharḥ*. Chapter six explores Rāzī's elucidation of Ibn Sīnā's scientific method in the *Sharḥ* with a particular emphasis on explanatory universal syllogisms and 'empirical reasoning' (*tajriba*).

Part III returns to the main theme of secondary causality with reference to the *Maṭālib al-ʿāliyya* and with attention to the five focus points. It draws in additional material

⁵⁹ Strobino (2015), 338.

from the *Muḥaṣṣal* and the *Physics* of the *Sharḥ*. Chapter seven examines the discussion of substructures (time, body, space, dimension) in the *Maṭālib* that goes beyond the Avicennan and the classical Ash‘arī models. Chapter eight considers the higher structures of the universe relevant to science and the problem of miracles, and discusses Ibrahim’s recent article suggesting that Rāzī abandons a classical hylomorphic account of the world. Chapter nine considers Rāzī’s doctrine of souls as separable, non-material substances with agency in the material world. It compares various accounts of celestial agency in the Peripatetic and astrological traditions in the light of a narrative of human destiny. Chapter ten summarises the causal narratives that emerge in these contexts, and reflects on Rāzī’s own commitments to the tension between classical Ash‘arism and a scientific world view.

Broadly, I will argue that Rāzī does appear to accept some form of secondary causality, in slightly different forms, throughout his work. Though he rejects Ash‘arī occasionalism, he achieves its major theological goal and affirms the absolute sovereignty of God over all events. Quasi-independent, interactive causes do not restrict God’s power to act at will because such causes (including choosing agents) can be the instruments of God’s will at any given moment. Provided there is absolute determinism in the causal chains, God remains the ultimate source and agent of everything that exists as it happens. However, his commitment to honest reasoning leads to some interesting ambivalence in his responses to the four critical problems raised by *falsafa*.

* * * * *

As can be seen from the foregoing sections, there is already substantial material that discusses elements of the relationship between secondary causality in Rāzī’s accounts of the cosmos and classical Ash‘arism. However, there has hitherto not been a study in English dedicated to the question of whether Rāzī is in the end an occasionalist, or whether he believes in secondary causality. My chosen approach to the question cannot match the

depth of scholarship in the parallel accounts of the interrelated topics offered by Griffel and others. Nevertheless, I hope the reader will find here perspectives and analysis that helpfully advance the discussion of how Rāzī's integrates his theological commitments with models of secondary causation.

Part I

Intellectual Hinterland and the first Sketch of a Theological Science.

Chapter 1: First and Second Causes in the Hellenic Schools.

This chapter has two main sections. The first explores how talk of first and second causes functions in explaining why the universe is the way it is. Since the primary-secondary causal relationship can mean different things in different universes, it presents some alternative models of the universe discussed in antiquity and highlights key features for classifying the causal models of different universes. The tabulated results give us a crude framework for an initial comparison between Ibn Sīnā and al-Ash‘arī. Since all the ancient discussions, whether they include divine agency or not, have some influence on the tradition received by Rāzī, I also take the opportunity in both sections to highlight in advance themes that will resurface in Rāzī and his immediate predecessors.

The second part focuses specifically on the competing analyses of the underlying *substructures* of the universe from the Hellenic tradition. These centuries-old bones of contention (continuous matter or atoms, place and the void, time and the moment, non-bodily substances etc.) are very much present in both *kalām* and *falsafa* and will dominate much of the discussion of this study. I will also introduce the epistemological theme of scepticism in this section.

We shall see later that Rāzī sometimes appears closer to the Avicennan tradition and sometimes to the classical Ash‘arī tradition, but he will also strike out in different directions. He often does so with express reference to alternative elements of a Hellenic heritage more diverse than the labels ‘*falsafa*’ or ‘peripatetic’ imply.

§1.1 First and Second Causes in the Universe

Looking for causes of things is a human activity bound up with human concerns and purposes. For Aristotle knowing causes, principles and elements is what enables us to

understand our world.⁶¹ We can add to this. If we understand causes, we know when to plant the crops, how to stop wounds bleeding and how to make a smooth-running chariot. More contentiously, we can know the correct form of words and ritual to bring on rain or bring down a love rival. Abstract modern physical theories may dispense with both things and causes in anything like our everyday sense, reducing objects to field fluctuations (whether in spacetime or in the quantum vacuum) governed by equations for which the direction of time (and thus of causality) is meaningless.⁶² However, for us the direction of time is far from meaningless, and unless the equations show us how to predict usefully the path of future events, and effectively intervene, they remain just pretty pieces of mathematics.⁶³

Many inner-world causes, one cause or none?

There is thus a close relationship between causation and conscious existence in time, both in the backward-looking activity of explanation and the forward-looking activity of intervention.⁶⁴ But the relation is complex. Ibn Sīnā for one observed, the fact that one event follows another, or one object precedes another in time tells us nothing decisive about a causal relationship between them.⁶⁵ The problem of how we ‘know’ causal relations are real fuels scepticism from Sextus to Ghazālī to Hume and opens the possibility of universes that are either random, or have, as al-Ash‘arī and Malebranche proposed, just one single agent cause.

⁶¹ Aristotle *Physics* A, 1, 184a10-15.

⁶² For the reduction of massive bodies to fluctuations in the space-time field see Sorabji 2010b: 62; for ‘time symmetrical dynamical determinism’ see Penrose 2004: 686-687.

⁶³ Though physicists do worry about the entropic ‘arrow of time’. See Penrose 2004: 688-732.

⁶⁴ For cause as explanation, see Hocutt 1974: 385-399.

⁶⁵ Ibn Sīnā, *Metaphysics*, I, 1, §16, 5.

Simultaneous cause and effect or preceding causes? Time and the moment of change.

Must the agent of change be present with and to the object that undergoes a change? Consider the fishermen pulling a boat up the shore with ropes. Then consider the hand that fires the arrow that strikes the target. These are two different pictures of how first and second causes relate. In the first (simultaneous cause), the priority of the fishermen is ontological. Remove their action, and the secondary causal action of the rope ceases along with the motion. In the second the priority of the archer's hand on the bow is temporal, and the motion of the arrow and its arrival on target are states caused by their preceding states, but ontologically independent of the state that initiated the sequence. This is a significant parameter for classifying cosmologies. We will find Ibn Sīnā and al-Ash'arī on the same side against some Mu'tazilī authors – and some causal sceptics. The question also forces attention on the relation between extended time and the moment of change, that take us into substructure questions we will discuss below.

Causal complexity, the first agent and secondary agents. Free will and determinism.

Aristotle's influential model of four explanatory causes formalises four intuitive ways of answering the question 'why?' Why is that statue holding a thunderbolt? – Because it is a statue of Zeus (formal); why is that statue green? Because it is made of bronze and it's been exposed to the rain (material); why is that statue there? So that people can come and worship Zeus at the shrine (purpose); because the craftsmen put it up yesterday (agent). It also highlights that compelling causal accounts require a nexus of different factors, each of a very different quality. The agent of change – whether a natural object or an animal or a rational being – initiates a movement against the background conditions of formal and material properties and purposes.

But an agent of change can either be self-moving, or can itself be the product of the sequence of actions of agents preceding it either temporally or ontologically. A tension

arises. The immediacy of our experience of the world tells us that we are free agents. Our theories construct remote, ultimate causes of our actions. Agents too can be secondary, instrumental causes, cogs in the mechanism (simultaneous) or dominoes in the row (sequential). The conflict between our sense of agency and the attraction of cosmic determinism runs through ethical and religious debates from Epicurus to Calvin and is central to al-Ash‘arī’s rejection of Mu‘tazilism.

Mechanical, intentional, coincidental, spontaneous

Our everyday explanations include mechanical causes (bleach whitens the cloth) intentional (I went to see the play), coincidental causes, where separate causal chains just happened to converge in space and time (we met at the market) or spontaneous (nothing made this happen it just did). All of these are discussed in Aristotle’s *Physics*, and each provides a different frame of reference for those looking to expand explanations beyond the immediate to the ultimate cause of everything.⁶⁶

This set of distinctions offers another way of contrasting causal relationships across universes. Most modern cosmologies (and some ancient ones) privilege a combination of the spontaneous, the mechanical and the coincidental to explain why the universe looks the way it does. The knowing, observing, explaining, purposing mind of our experience is then an epiphenomenon, whose deep causes are of a radically different category from purpose and intentionality. Most ancient ones (and some modern ones) privilege the intentional. Some of these are monist holding that mind and intentionality are intrinsic to matter. Some are dualist, holding that mind, intentionality and purpose are distinct from matter, but can nevertheless manipulate it and be ontologically prior to it. It is the last category in particular, that will dominate in Rāzī’s thought.

⁶⁶ Aristotle, *Physics* B, 4-9, 195b31-200b8.

These general indicators will help us build the framework of comparison for the different universes of al-Ash‘arī, Ibn Sīnā and Rāzī. But there are further markers to glean from the heterogeneous model universes of Hellenic antiquity, which also shape the thought-world of our *kalām* and *falsafa* thinkers.⁶⁷

§1.1.2 The ‘Physicalists’: First causes without a creating or originating God

Empedocles (5th Century CE)

Aristotle attributes his four-element theory (earth, air, fire and water) to Empedocles.⁶⁸ Their interactions are governed by eternal impersonal forces labelled ‘love’ and ‘strife’, that cause them to agglomerate and to dissolve.⁶⁹ Though his universe is mechanical, Empedocles allows for coincidences in the pathways taken by the elements and articulates an early form of natural selection. Animal parts emerge from the earth at random. Successful combinations survive and propagate.⁷⁰ A natural order emerges spontaneously out of the elements. Diogenes Laertius hints that he nevertheless has an understanding of a world ‘soul’ and believes in reincarnation.⁷¹ The gods, however, appear in his writings as mere allegories of the elements.⁷²

⁶⁷ For the appropriation of Hellenic material through the 200 years of the ‘translation movement’ in the Mu‘tazilī tradition, see Adamson 2016a: 10-25. For the complex social and political drivers of the movement see Gutas 1998. For possible Greek influence on specific early Mu‘tazilī doctrines, see van Ess 1991-7 (III): 42-44 (Ḍirār), 394 (Nazzām); van Ess 1991-7 (IV): 463 (atomism), 665-666 (Galen and logic). For the interaction of Mu‘tazilī scholars on the translation movement and the development of *falsafa*, Bennett, 2016: 142, 147. Adamson 2016b: 298. The aim of the ancient Greek examples here is not to commit the sin of reductionism (Wisnovsky 2003: 17), but to introduce ideas and themes that one way or another end up in the philosophical kaleidoscope available to our thinkers, and are given an individual twist by the likes of al-Ash‘arī, Ibn Sīnā and Rāzī.

⁶⁸ Aristotle, *Physics* A, 4, 187a12-188a18.

⁶⁹ Aristotle, *Physics* Θ, 1, 250b26-251a5.

⁷⁰ Aristotle, *Physics* B, 3, 196a20-24; 8, 198b10-32.

⁷¹ Diogenes Laertius (II), “Empedocles”, §77, 390.

⁷² Diogenes Laertius (II), “Empedocles”, §76, 388. Empedocles’ own extravagant claims to divinity reported by Diogenes suggest that he was not too worried about the existence of actual, touchy superior beings.

Democritus (5th Century BCE)

Democritus' atomic theory from the same era has a cosmic 'whirl' moving indestructible atoms around in the void. The atoms cluster to form infinite, temporary worlds in the infinite void. According to Diogenes his atoms take on different sizes (though Rāzī's source implies they are all the same size and spherical).⁷³ They cluster to form the higher order elements, from which are formed the minerals, animals, plants and material souls of our particular world. The events of the world are governed by necessity. The universe is mechanical and evolves deterministically. Orderly worlds and sentient individuals come into being by coincidence of forces. Mind and intentionality are epiphenomena. Diogenes interestingly notes that Democritus considers the end of human existence tranquillity, a quasi-Buddhist position that would pre-echo Epicurus.

Epicurus (4th Century BCE)

Epicurus uses Democritus' theory as the basis for a way of life centred on the private pursuit of *ataraxia* – freedom from distress.⁷⁴ Now, however, the motion of atoms is a constant downward drift, punctuated by the occasional random horizontal swerve (*rhopē*) rather than Democritus' 'whirl'. The universe therefore evolves through a mixture of mechanical and spontaneous forces and is not deterministic. Souls are made of atoms and dissolve like any other conglomerate when the time comes. Only the gods, thanks to their fine atoms, escape violent interactions and remain eternal.⁷⁵ Intention, purpose and rule-governed orders of nature are epiphenomena in the different worlds that emerge around the universe. The interactions of the atoms are fundamental.

⁷³ Diogenes Laertius (II), "Democritus", §§44-45, 452-454; Rāzī, *Maṭālib*, I, 196.

⁷⁴ Diogenes Laertius (II), "Epicurus", 528-676.

⁷⁵ David Furley has argued that the differently sized and shaped Epicurean atoms are made up of facetless point-particles. Dhanani suggests that this may ultimately lie behind the very similar *kalām* discussions. Furley 1976: 17-27; Dhanani 1994: 102. Van Ess 1991-7 (IV): 460-470.

In all three cases the ultimate cause of every phenomenon in this universe is the immutable nature and behaviour of its ultimate constituents. The causes and effects that we observe (including the regularities of nature and the effects of our own actions) are secondary in the sense that they are strictly epiphenomena.

Stoics (from 4th Century BCE)

The Stoics vied with Epicureans for the best part of five hundred years to provide a grand narrative for humans to live by. Their cyclic universe too is just there, and does not originate from a God or gods.⁷⁶ It begins, evolves, is annihilated in a cosmic conflagration, and then starts all over again *ad infinitum*. Nevertheless, it is divinely governed. Two of Empedocles' elements, fire and air, have a dual nature as matter and as 'spirit' or 'word' (*logos*).⁷⁷ This divine agency permeates the world and works on the passive elements of earth and water to shape a world of higher order beings that all share to some extent in the divine spark. Order in nature is thus a reflection of the divine purpose that runs through the whole world, creating a world soul. Human souls are both material and divine, sharing in agency and purpose. The souls of those who live good lives join the gods in the heavens on death, before returning to bodies in the next world cycle.

That crucial distinction between active causes (agents) with intention and purpose and inert but pliable material reappears both in Ibn Sīnā's modified Peripatetic system and in the limiting Ash'arī position that there can only be one true agent in the universe. First causes are not just first in the sequence. They are more importantly *agent* causes whose

⁷⁶ See Long and Sedley 1987, §§43-55, 264-341.

⁷⁷ The physical concept of a material spirit that conveys purpose and action to inert matter becomes important in medical theories of the operation of the nervous system, without necessarily implying Stoic mind-matter monism. See Nemesius, *De Natura Hominum*, 8, §§191-193, 64-65; Rāzī, *Mabāḥith* II, 321 (sleeping and waking).

effects originate in intentions, while second causes are passive and mechanical, providing instruments for agents.

Stoics lived with a tension between their ethical imperative to live virtuous lives, and the belief that fate and prophecy work themselves out through fundamentally deterministic causal nexuses in the world.⁷⁹ Chains of causation reach from the heavens and ultimately determine the course of at least some earthly events. According to Cicero's Chrysippus, however, it is only *antecedent* causes that are determinate, i.e., everything that has happened up until the moment of choice. Intentional agent-causes always have a freedom of spontaneity, though they may sometimes be helpless in the face of overwhelming events.⁸⁰ That could allow multiple 'first (i.e. agent) causes' of new causal chains. Ontologically they would be sources of a change in a present world state, and temporally the first in a new sequence of events.

However, according to Alexander of Aphrodisias, Stoics also argued that things in the universe could legitimately be 'up to us' (*eph' hēmin*) by analogy with animals who act with a spontaneous impulse (*hormē*).⁸¹ The impulse is a part of the natural order, yet it also genuinely comes from them. Alexander criticises this for twisting the accepted sense of 'up to us' (the power to do an action or its opposite) to mean 'in accordance with our particular nature'. That would actually make human choice a consequence of the complex deterministic causal nexus, not something independent of it. That is, of course, just the position Rāzī adopts, as noted by Shihadeh.

⁷⁹ These nexuses, though, are non-reductive, including choices and higher-order 'mechanical' interactions.

⁸⁰ Cicero, *De Fato*, §§41-43, 236-240. It is not clear from this passage how Chrysippus relates earlier agent choices (as antecedent causes) to later agent choices in a narrative of destiny. Cyclic accounts of world histories, in which the same sequences of events recur, suggest inevitability. See Vergil, *Ecloques* IV, 4-45, Nemesius, *On the Nature of the Human*, §§309-310, 111-112.

⁸¹ Alexander, *On Fate*, §38, 75.

Aristotle (4th Century BCE)

Though Ibn Sīnā's peripatetic universe depends on a creator God, Aristotle's God in *Metaphysics* Λ is the ultimate being who explains the nature and the eternal motion of the heavens - not their origin.⁸² The existence of beings (*ousiai*) is presumed. Scientific questions concern why they have these properties and why they change their locations and transmute.

His physics is based not on the generation of something out of nothing, but on the transformations of existing things that either have the potential to be this-sort-of-thing or actually are that-sort-of-thing. The bronze *could be* a statue, or *actually* be a statue. The woman could be a musician, or actually be a musician. The eternal actualisation of his primary being in the *Metaphysics* (as in *Physics* Θ) moves the outer circle of the heavens. The eternal motion, transmitted downwards, is the ultimate cause of all transitions from potentially-being (these elements could be a mollusc) to actually-being (a mollusc) in the universe. The *Metaphysics* goes beyond the *Physics* by identifying this 'changeless mover' as a mind thinking its own thought and calling it God.⁸³ But it is a source of being as actualisation, not of being as bare existence.

However, it is on such a being that 'the heavens and nature depends'. There is an implication that the divine mind is also the source of the purposiveness that runs throughout the natural order, even though all the ingredients of the cosmos seem to be just

⁸² Aristotle, *Metaphysics* Λ, 5-10, 1070b36-1076a4. Particularly the argument of 1071b2-1072b4. Gutas notes Ibn Sīnā's initial criticism of Aristotle for limiting God's action to motion. He also notes his later more favourable re-interpretation of Aristotle. Gutas 1988: 299.

⁸³ Aristotle, *Metaphysics* Λ, 1072b18-24.

there. In Aristotle's universe, there may also be more than one unmoved mover. Thus he accounts for the eternal motion of the spheres of the planets.⁸⁴

Intention is embedded in the universe, though the relationship is partially dualistic, partially monistic. The eternal noetic beings interact with the protean material entities but are distinct from them. Plant souls and animal souls, however, are integral, formal parts of the plant and the animal. They sustain purposive life functions and, in the case of animals, perception and spontaneous locomotion. Like all other natural objects compounded of form and matter, they are subject to the transitions from potential to act, to generation and corruption. Animal souls cease to exist. The mind (*nous*) of the human animal is, however, capable of contemplating eternal verities and may therefore be separable and eternal.⁸⁵

There is ambiguity about whether Aristotle is a determinist or not. In the debates reflected by Cicero, writing three hundred years later, he clearly is.⁸⁶ In the commentary of Alexander, writing five hundred years later, he is no longer.⁸⁷ His multiple unmoved movers and rational humans suggest sources for an independent chain of causality in the natural world. His frequently use of the phrase 'always or for the most part' when describing the natural order seems to imply indeterminism. Ibn Sīnā will very definitely exclude that interpretation. 'Always or for the most part' expresses the limits of our understanding of nature, not a lack of consistency in its causation.

⁸⁴ Aristotle, *Metaphysics* Λ, 1073a29-1073b1. Ptolemy will create the systematic account of the motions of 9 or 10 spheres five hundred years later, that becomes standard science (in spite of dissenting voices) until the early modern period.

⁸⁵ Aristotle *De Anima* III, §§4-5, 429b3-430a25.

⁸⁶ Cicero, *De Fato*, XVII, §39, 234.

⁸⁷ Alexander *On Fate*, §38, 75. See Bobzien 2016: 125-160.

§1.1.3 First causes with a creator God

We can now turn to two accounts where God as creator comes to the fore. One is Plato's *Timaeus*, from which Rāzī references elements approvingly in the *Maṭālib*.⁸⁸ The other is the patchwork commentary on Plato's and Aristotle's corpus in Plotinus' *Enneads*, which provides the model for Ibn Sīnā's distinctive theology.

Creating order out of pre-existing chaos

The *Timaeus* does not describe creation *ex nihilo*, but it does provide a narrative explanation of a cosmic order that begins in time and arises for intentional rather than mechanical reasons. It also features the absolute contrast between a world of changeless, eternal being and the world of becoming that typically distinguishes Platonic from Aristotelian language about the world.⁸⁹ It is a step closer to the theological idea of 'creation out of nothing' than Aristotle's unmoved mover.

The narrative has the form of a philosophical myth and does not attempt to reconcile the paradox implied by a *process* of creation taking place in an eternal and changeless realm before the beginning of time. It also offers a dual account of causality in the universe, the first based on the purposes of the divine artificer, the second on the mechanical properties of matter. The latter are auxiliary (*xunaitia*), instrumental causes in the creation of the natural order – though 'most people, mistakenly, think of them as causes in their own right'.⁹⁰ In fact the 'lover of intellect and knowledge' must first seek the causes associated with the 'intelligent nature' (*tēs emphronos phuseōs*) and secondly all those

⁸⁸ *Maṭālib* V, 64, 76, 88 (time as pre-eternal substance) cf. Plato, *Timaeus* 37c-38b; V, 111-113 (space as bodiless dimension) cf. Plato, *Timaeus* 48e-52d.

⁸⁹ And which possibly lies behind the *qidam/ḥudūth* distinction in the *kalām* proof for the existence of God.

⁹⁰ Plato, *Timaeus*, 46c-e. An account of the mechanical elements of the universe, beginning with place and going on to the structures that underlie the elements (triangles) begins at 48a. Physical considerations of this kind are then woven into the medical narrative of the structure of the human body by the subordinate deities from 69a onwards.

that ‘come into being, being changed by others and in turn changing yet others by necessity’. The second causes are the mechanical causes of Democritus and Empedocles, and operate by necessity. The primary causes are the intentional causes associated with the divine agent, who operates purposefully, to produce what is utterly good.

The pre-existing elements of the changeless realm are the beneficent craftsman (*dēmiourgos*), an eternal archetype (*paradeigma*) of the universe and visible matter (*horāton*), initially in a state of chaos.⁹¹ Working on the basis of the archetype, the craftsman shapes the raw material into an immortal living rational animal with a soul. Within that world are subordinate, immortal beings who (in time) shape the material at their disposal into the mortal, physical forms of the sublunary world.⁹² The result is, of course, very much like the world of Aristotle or the Stoics. The difference is that it is not pre-eternal (though it is everlasting) and the relationship between intentional agents and instrumental matter is unambiguously dualist. They are different sorts of reality. We shall see that stark dualism reappearing in the *Maṭālib*.

Existentialism as the basis for a Creation Narrative

Finally, we can turn to Plotinus and add in the element of ‘existentialism’ as a flow of being from the One. A large portion of his *Enneads* had been translated into Arabic as the ‘Theology of Aristotle’ (with some significant adaptations) and were commented on by Ibn Sīnā, who used some of the material for his own theology. Plotinus attempts to reconcile the conflicts in the Platonic and Aristotelian heritage with a highly abstract, timeless emanation theory. He describes a fundamentally Peripatetic universe but blends in Plato’s disparate narratives from the *Timaeus* and *Philebus* and elsewhere. As an emanation theory it is an explanation for the origin of being as *existence* and thus lends

⁹¹ Plato, *Timaeus*, 27d-30c.

⁹² Plato, *Timaeus*, 69b-c.

itself, more than other philosophical accounts, to a crossover with religious narratives of creation out of nothing.

Plotinus attempts to resolve the paradox of how the One who ‘can only generate one’ can produce the plurality of the universe. The One who is absolute pure goodness and beyond being, inevitably generates a single intellect (*nous*), an image of itself. This intellect (effectively the *nous* of Aristotle’s *Metaphysics*), in turn generates the universal soul, which will eventually engage with and shape the material world of potential or ‘non-being’.⁹³

Following Plato’s *Timaeus*, the souls of individual humans are made by subordinate deities, with their ‘lower’ character part-determined by the deity that fashioned them, part by the circumstances they encounter. However, their ‘true self’ binds them to the world above and, by the pursuit of virtue, enables them to separate themselves from the world below and make the journey of return towards the One who is source of all.⁹⁴ Plotinus is clearly more interested in a narrative of personal salvation than in an account of the physical universe, but nevertheless, the account he gives unambiguously equates the flow of existentiatio from the One who is beyond being, with the flow of actualisation from Aristotle’s intellect intellecting its own intelligibility.

⁹³ See Plotinus, *Enneads* V, 1-6, 10-217. Especially V, 1 §§6-7, 28-38; V, 4, 140-149. For the separate discussion of matter see *Enneads*, II, 4-5, 106-171. Equating ‘non-being’ and ‘potential’ will be important for Ibn Sīnā’s reworked account of the generation of all reality from the One. For the handing on of form from intellect to world-soul to the material world, see *Enneads* II, 3, §17, 96-99. This is not yet Ibn Sīnā’s carefully constructed eightfold celestial hierarchy of intellects ending in the ‘giver of forms’.

⁹⁴ Plotinus, *Enneads*, II, 3, §9, 72-76 (commentary on *Timaeus*, 69c-d).

§1.1.4 Tabulating universes

We can now gather some of the indicators we have highlighted into a rough framework for categorising different models of causality in universes with God. This allows an initial comparison between the worlds of Ibn Sīnā and al-Ash‘arī.

God (Origin)	God (Interactive)	Subdeities Celestial Agents	Universe Free/Determined	Universe Causal Arrays
A1	B1	C1	D1	E1
Craftsman shaping pre-existing matter	No direct action on particular entities in time	No direct action on particular entities in time	Materially Deterministic no purpose	Temporal Causal Sequences only (Dominoes)
A 2	B2	C2	D2	E2
Source of being as actualisation	Occasional direct action on particular entities in time	Occasional direct action on particular entities in time	Purposive and Deterministic	Simultaneous, (ontological) causal sequences only (Cogs)
A3	B3	C3	D3	E3
Initial Existentialiation (Origination, Generation)	Continuous direct action on particular entities in time	Continuous direct action on particular entities in time	Materially deterministic with agent freedom	Simultaneous and Temporal causal sequences
A4	B4	C4	D4	E4
Continuous Existentialiation (sustaining)	Timeless interaction with the universe	Timeless interaction with the universe	Purposive Nature with agent freedom	No non-formal causal sequences

There is an important notional distinction between the A and the B column (which will be crucial for appreciating Rāzī’s criticism of Ibn Sīnā). Crudely, the A column is about setting up the universe and the B column is about interacting with it once it exists. God may do one or the other or both. Epicureans and Democriteans stop at the D and E

columns, Stoics and Aristotelians stop at the B and C columns. In our scheme Plotinus' universe is A4 (God sustaining), B1 (no interaction), C3 (continuous actualisation by subordinate deities), D4 (purposive, material determinism, human freedom) and E3 (simultaneous ontological and sequential conditional causes). Ibn Sīnā's universe, we shall see, is broadly similar to Plotinus', though D2 rather than D4, that is, purposive, but without genuine human freedom.

At first sight al-Ash'arī's universe seems radically distinct: A3 (God's generation of atoms and their initial properties), B3 (God's continual assignment of properties - accidents- to individual atoms) and E4 (the only causes are a sort of formal cause).⁹⁵ However, Ash'arī's God assigns atoms (in B3) the property of 'endurance' from moment to moment. We could, therefore, as easily redescribe this as sustaining the atoms and their properties in being from moment to moment, that is, as continuous existentiatio.

We can also recognise that, even though al-Ash'arī allows no substantial simultaneous causes (intelligent agents) other than God or any sequential antecedent causes (materials with reliable properties) at all, for both Ibn Sīnā and al-Ash'arī effective causation takes place in the present moment.⁹⁶ These two observations suggest that though Peripatetic and Ash'arī causal narratives form mutually incompatible explanatory sets, their physical (observable) and theological truth conditions are the same. Ash'arīs and Peripatetics will disagree about whether the fire is heating the water now, but both can agree that God is causing both the fire (with its properties) and the water (with its properties) to exist *now* (theological), and that the fire is hot and the water is becoming hotter *now* (physical-observable). Thus the contradictory claims 'this fire is making this water hotter now' (Peripatetic) and 'this fire is hot now and this water is getting hotter now, but the fire is having no effect on the water now' (Ash'arī) share significant physical

⁹⁵ Distinct also from Mu'tazilī universes, A3, B2, C2, D4, E1 (domino-like, sequential causality).

⁹⁶ That Ash'arī's moments are atomic and ibn Sīnā's continuous makes no difference here.

(observable) and theological truth conditions. This would not be the case if in one of the narratives God merely existentiated the universe, its material properties and initial conditions and then left the universe to its own devices (A3, B1), or if one of them preferred sequential causation (cause at t1, effect at t2) to simultaneous causation.

We can finally note that in a fully determined Peripatetic-like universe a further, intermediate theological proposition will share the same truth conditions: ‘God is now heating the water *through* the fire’. The free will of a God acting on the world (B2-B4) can be fulfilled through a universe of secondary, instrumental causes. This seems, consistently, to be the key to Rāzī’s reconciliation of scientific approaches to nature with Ash‘arī theological concerns about God’s freedom and sole agency. In his first thoroughgoing engagement with *falsafa*, the *Mabāḥith*, his major difference with Ibn Sīnā is not in columns A, E, D or C, (the theological origins of the universe, events in the world and their secondary causes) but in column B, the question of whether God can act directly on the sublunary world or not, with or without the use of instrumental secondary causes.

§1.2 Bones of Contention in Antiquity

It is impossible to discuss causation and explanation apart from the context of a model universe. It is important, then, to flag up at this point themes that Rāzī returns to again and again as he builds his model, working through key points of dispute between Mu‘tazilī’s and Ash‘arī’s, between *kalām* and *falsafa* and within the wider philosophical traditions of East and West, about the substructure and contents of the universe. Since many of these are echoes of long-running disputes among Hellenic thinkers, in §1.2.1 we will highlight some of the Hellenic philosophical background to the key disputes that feature in Rāzī’s discussions.⁹⁸

⁹⁸ Rāzī identifies and discusses the thought of named Hellenic thinkers throughout his works.

It is also impossible to discuss causation and explanation abstracted from a theory of knowledge. Though that topic will be deferred to Part II, it is appropriate here to explore the sceptical critique of scientific explanation from within the Hellenic tradition. Sceptical motifs appear in al-Ash‘arī’s own teaching, in Ghazālī’s critique of *falsafa* and in arguments recorded by Rāzī himself. So in §1.2.2 I want briefly to present Jonathan Barnes’ account of ancient scepticism and use it to suggest an answer to Shihadeh’s question of how sceptical themes may have entered the *kalām* tradition.

§1.2.1 The Contents and Structures of the Universe

Zeno, the paradoxes of infinity and their implications for time, body, motion.

Zeno’s paradoxes of motion from the fifth century BCE raise conceptual problems for physicists about time, motion, body and space whose solutions include the Peripatetic theory of continuous matter infinitely divisible ‘in potential’, *kalām* theories of minimal atomic dimension and the early modern mathematics of infinitesimal calculus. Aristotle, who presents and discusses them, points out usefully that the concepts of extension, time and motion form a set.⁹⁹ If one is continuous, then all of them are continuous, if one is divisible into discrete units (atomic) then all of them are so.

Two of the paradoxes are particularly significant for discussions in the Islamic tradition. These are the first and third in Aristotle’s list:¹⁰⁰

- [1] (Impossibility of crossing a space) There is no motion, because the mover cannot reach any given goal until it has first reached the half way point. But

⁹⁹ Aristotle, *Physics* Z, 9, 238b5-240a18 (Zeno’s paradoxes); *Physics* Δ, 11, 219a10-13 (continuous extension [megethos] entails continuous motion entails continuous time); *Physics* Z, 1, 231b18-20 (extension, motion and time are either all divisible to a limit of indivisibility, or none of them is) with accompanying proof.

¹⁰⁰ For the doctrine of the leap see al-Ash‘arī’s *Maqālat al-Islāmiyyīn*, II, 19; for motion as being in a place after being in another place see *Muḥaṣṣal*, 238.

it cannot reach that intermediate goal until it has reached the half-way point of that... etc.

- [3] (The arrow moving and resting) Whatever is in a stable state is at rest.
 Whatever is moving is always in a stable state at any given moment.
 Therefore, at any one moment, the moving arrow is motionless.

The first gives a helpful context for the *kalām* author Nazzām's (d. ca 845) doctrine of the 'leap' (*tafra*), a dramatic solution to the problem of traversing an infinity of atoms, the second a context for *kalām* definitions of motion as 'being in a place after being in an adjacent place'.

Aristotle himself argues from the continuousness of motion to the continuousness of matter and time, and his solution to the problem of actual infinities is to say there aren't any. Using his explanatory categories of 'potential' and 'actual', he suggests that matter is infinitely divisible 'in potential' (*en dunamei*), but is never infinitely divisible 'in actuality' (*en energeia*).¹⁰¹ Any given length of matter can therefore properly be taken as an actual unity, thus allowing finite measurement, proportion and motion. His solution to the related problem of the arrow is to deny that time is a sum of moments. Rāzī will (eventually) definitively reject that position, and will also explore the cracks in Aristotle's concept of 'potential infinite divisibility' that emerge in late antiquity.

Rival theories of atomic matter (and possibly Plato's theory of elemental polyhedra in the *Timaeus*) solve the measurement problem by denying infinite divisibility at all. There are objects that occupy a minimal possible volume and cannot be divided further.¹⁰² Democritus does suggest that his atoms are *notionally* infinitely divisible, which leaves the door to the paradoxes open (or anticipates Aristotle). Furley has argued that Epicurus'

¹⁰¹ Aristotle, *Physics* Γ, 7, 207b10-27.

¹⁰² Plato, *Timaeus* 53c ff.

atoms break down to facetless objects occupying discrete quanta of pre-measurable space, similar to those proposed in the *kalām* tradition.¹⁰³ That would be a genuine alternative solution to Aristotle's and (Dhanani has suggested) may be the ultimate source of the similar elements in the *kalām* atomist tradition. This is the position Rāzī will (with reservations) eventually adopt.

Substructures of the universe: Matter, form, bodily form v atomic structures in space

But, besides the paradoxes, there are other issues around the structure of physical bodies that divide Epicurean atomists from Peripatetics and reappear as important themes in *kalām* and *falsafa* debates. One is how basic matter relates to the higher properties of complex objects. The Peripatetic answer to this includes the theory of 'bodily form', a source of hot debate in post-Avicennan discussions by Rāzī and his older contemporaries.¹⁰⁴ That theory then raises the further question whether there can be dimensions in a space without bodies, to which Rāzī will devote considerable attention in the *Maṭālib*. Epicurean atomists offer different solutions to those questions. The comparison will reveal another surprising crossover between *kalām* atomism and the Peripatetic tradition.

We begin by contrasting Aristotle's hylomorphism, the relationship between matter and form, with Epicurus' account of higher order properties in matter.

Matter and form or higher structure

We have seen two fundamentally different patterns of explanation for the universe we experience. In one the universe is essentially simple, material and mechanical. All higher order structures and properties are to be explained as emergent phenomena. In the other, the whole universe is fundamentally intentional and the mechanics of primitive

¹⁰³ Furley 1967: 17-27, 76-77. Van Ess spells out the probable route into *kalām* through Iranian dualism, suggested by Dhanani. Van Ess 1991-7 (IV): 460-464.

¹⁰⁴ See Shihadeh, 2014a: 364-396. For ancient background discussions on the properties of basic matter (Plotinus, Philoponus) see Lammer 2020: 140-141.

material elements are co-opted to allow higher order entities to be realised in the material world. Stoics, Platonists and Peripatetics share versions of this latter point of view, Democritus and the Epicureans the former. Nevertheless, all are agreed that there are higher order beings with stable properties that are a part of their identity, while other properties may vary or come and go.

Aristotle distinguishes between formal or essential properties on the one hand, (what it is for giraffes to be giraffes – having long necks and grazing from treetops) and accidents on the other (a particular giraffe being exactly sixteen foot high and having a patch on the middle of its forehead). The set of essential properties, which any member of a given kind can be expected to have, he calls variously *ousia* (being/reality), *ti ēn einai* (what-it-is-to-be) or *phusis* (nature), rendered into Arabic respectively as *ḥaqīqa*, *māhiyya*, and *ṭabīʿa*. The non-essential properties he calls *sumbebēkota*, normally translated as ‘accidents’, and usually translated in Arabic as *aʿrāḍ*.¹⁰⁵ Entities in the material world are composites of a form (being a living giraffe) and underlying matter (bones, blood, arteries etc), in ontological layers that go down to the elemental forms of earth, air, fire and water which supervene on a notional prime matter. Essential properties associated with the form and essential properties associated with the matter equally have explanatory power when accounting for why things happen in the world.

This hylomorphic scheme is vital to Aristotle’s account of change as the transition from potential being (the unmoulded bronze) to actual being (the statue of Zeus). Among other things it allows him to account for the mutual transmutability of the primary elements of earth, air, fire and water (each being potentially the other), which provide the

¹⁰⁵ In the *Categories* he lists accidents under the heading of responses to possible questions about a given entity: How big, how many?, What does it look like? Relative to what? Where is it? When was it? How arranged? What state? What is it doing? What is it undergoing? *Categories* 4, 1b25-28. ‘Accidents’ in the *Physics* are more analytic, closely tied to definable essences (a human is not a musician in virtue of being a human), whereas in the *Categories* they are linked to our perception of objects in the world.

basis for narratives of material causation affecting higher order phenomena, particularly in biology and medicine.

Epicurus makes a similar division between permanent and impermanent properties, but uses the world *sumbebēkos* in a subtly, but significantly different way from Aristotle. He is interested in the permanent qualities of shape, coloration and weight that ‘supervene’ on whole sets of atoms concatenated into perceptible bodies, that determine their perceptible nature.¹⁰⁶ These are not the incidental accidents described by Aristotle in the *Physics*. Nor are they immediately the sort of essential properties that enable us to classify the member of a natural kind. They are enduring phenomenal properties of individual entities. In that respect they are more like essential properties, perhaps providing the basis for scientific classification of class members. Seen as a whole, this is what this set of atoms (that constitutes a particular giraffe) looks like. For accidents in the incidental sense, he uses a different word, *sumptōma*. This suggests the need for caution when translating the Arabic *‘araḍ* as ‘accident’ in non-Peripatetic contexts.

Overall, then we can note that this is not a hylomorphic scheme. The phenomenal properties that identify the nature (*phusis*) of this particular entity are a second order product of the primary natures of the differently-shaped atoms that make it up. Insofar as the natural world of our experience regularly throws up entities that look like *this*, it is because of the mechanics of the underlying materials, not because of any purposiveness embedded in it from a higher order of intentional being.

Space, bodily form and Philoponus’ critique of Peripatetic theory

There is an important divergence in the understanding of bodies in space (or place) that goes with this. For atomists, a void with infinite extension in three dimensions is a given. The position of any given atom at any point in it is determined by their prior

¹⁰⁶ Epicurus, “Epistula ad Herodotum”, §§68-71, 19-21.

motions in infinite time. Physical structures of interconnected and interacting atoms that have dimension in space are a primary, brute fact.

For those developing Aristotle's principles, however, size is an accident, and accidents have to have a substance to inhere in, and a substance, to be actual, must be composed of form and matter. The most basic form of matter – the prime matter that is potentially one of the four changeable elements – must therefore already have a form (bodily form) in order to be actual. But that in-formed substance cannot have dimension, because size is an accident, and accidents are secondary to substances. Thus, on the one hand there is nowhere for pre-dimensional matter to go, on the other, because Aristotle argues vehemently against the possibility of void, without matter there are no dimensions at all. Acquiring dimension is then a necessary step in the actualisation of matter, but matter thereby *creates* dimension for other matter to be in (place) rather than existing *in* dimension.

This account is implied in Plotinus' scheme of the descending flows of actualisation followed by Ibn Sīnā, in which a material, dimensioned reality emerges from placeless, dimensionless mind. However, as a way of scientifically conceiving body in space, it was clearly already creaking in late antiquity, under pressure from the less mind-bending atomist models of space, as the critique of John Philoponus (6th Century CE) shows.¹⁰⁷ Philoponus robustly attacks all Aristotle's arguments against the void together with his definition of place as 'that which encloses', and argues for the possibility of dimensions

¹⁰⁷ Philoponus, *Commentary on Physics* IV, 211b19-25; IV, 215a24-216a21. Philoponus is, however, no atomist. For his reception in the Islamic world see Sorabji 2010a: 13; van Ess 1991-7 (III): 42; Rashed 2004: 35-58; 2013: 261-292; the latter includes a quote of Rāzī from a lost passage of Philoponus (*Al-Riyāḍ al-mu'niqa fī āra' ahl al-'ilm*. Rashed 2013: 271). According to Gutas, Ibn Sīnā is unflattering about Philoponus' critique of Aristotle. Gutas 1988: 327. However, this does not stop him adopting Philoponus' theory of impetus (*rhōpē*) as *mayl*.

independent of bodies. Similar discussions will resurface in Abū l-Barakāt al-Baghdādī and in Rāzī.

A Peripatetic-kalām crossover

One of the *kalām* arguments for the origination of atoms depends on the pair of notions that the accidents that inhere in atoms must have an origin, and that there are certain accidents (accidents of location) that atoms cannot exist without. The conclusion is that atoms too must have an origin.¹⁰⁸

We can note two things that set such atomism apart from that of an Epicurus or Democritus. The first is that higher, phenomenal properties in atoms are not generated mechanically as a function of the spatial properties of atoms, but through the intentional action of a higher being. The second is that the logic of the argument for origination bears a structural resemblance to the logic of the argument for bodily form. Just as a Peripatetic body cannot be there until it has the accident of dimension, so too the *kalām* atom cannot be there until it is given the accident of location. In both these respects, *kalām* accidents behave more like Peripatetic forms than like either the primary Epicurean properties of position, motion, shape and size, or the secondary phenomena arising from whole concatenations of atoms. It is effectively a sort of single-layer hylomorphism whose prime matter consists of atoms.

This observation will help us make sense of Rāzī's complex approach to prime matter (*hayūlā*) as a substructure for four (or five) element science in the *Maṭālib* in Part III.

Other contentious topics

These foundational discussions give context for other physical detail that will resurface in Rāzī's writings: the debate about whether entities can interpenetrate (initially

¹⁰⁸ See Gimaret 1978: 47.

a Peripatetic-Stoic contest); the analysis of change, motion and substantial change and its relation to time; whether there can be non-bodily entities; the nature of the soul; whether the celestial spheres are made of an indestructible element (with important ramifications for the theology of creation and the end time). These pieces of the jigsaw, critical for Rāzī's account of causality, will emerge in due course.

Now we turn to a brief discussion of the anti-dogmatic, sceptical approach to the same range of questions that has such strong echoes in the Ash'arī tradition, and underpins denials of secondary causation.

§1.2.2 Scepticism and *kalām*: Sextus Empiricus and Galen

Sextus Empiricus, in his *Outlines of Pyrrhonism* and *Against the Professors* provides us with a detailed account of the Pyrrhonian tradition of scepticism that he represents. Its purpose, he says, is to heal the soul from worries about inconclusive abstract arguments, allowing it, untroubled, to get on with normal life.¹⁰⁹ Sometimes this will involve pitting argument against counter-argument, sometimes ideas against experience. Both the style of argument and some content appear in the *kalām* tradition as reported by Rāzī and others.

It should be noted at the outset that such *kalām* authors, including al-Ash'arī and Ghazālī, clearly have dogmatic commitments of their own, and so are not full-blown sceptics (Adamson prefers the phrase 'negative dogmatism'). Nevertheless, the tactical use of recognisable sceptical attacks on specific areas of Peripatetic and Mu'tazilī doctrine suggests at the very least some affiliation with a tradition of what Jonathan Barnes (as we will see below) labels 'sober scepticism'. Particularly important here is Sextus' claim that the purpose of such argument is not to deny reality, but to help people accept everyday

¹⁰⁹ Sextus Empiricus (C2nd/3rd CE) *Outlines of Pyrrhonism* 1, 4-6, §§8-12, 6-8. According to Diogenes Laertius, Pyrrho, the founder of the school (C4-C3 BCE) studied under Indian 'Gymnosophists' and Magi, see "Pyrrho", §61, 475.

reality (*τον βιον*) as they find it. Such scepticism leaves us free to believe what we ‘naturally’ believe with quiet minds. A key question for this thesis is whether Rāzī, who certainly rehearses fragments of sceptical argument at points, and certainly suspends judgment at others, can be regarded as showing those sorts of sceptical tendency at different points in his intellectual journey. For that will clearly impact on our assessment of his ultimate commitment to secondary causation in the world.

A common pattern in the arguments reported by Sextus is to begin with a disjunctive premise based on a school’s claim, and to work through all the sub-branches, until it is shown that neither of the alternatives in the disjunction works.¹¹⁰ For instance, in *Against the Physicists*, Sextus presents a range of arguments against causes, active or passive. One such argument turns on the idea that the causal relationship is a relation and that relations are non-entities.¹¹¹ The ontological status of relations will be an important theme in Rāzī’s discussions around time and divine knowledge.¹¹² And we shall find him using disjunctive arguments both aporetically (as in Sextus) and conclusively (like any respectable metaphysician).

Another argument reported by Sextus focuses on the time at which a change takes place. Does Socrates die at the moment when he is still alive, or at the moment when he is dead?¹¹³ Again, both Rāzī and al-Ash‘arī before him report hefty debates within the *kalām* tradition about the moment at which changes take place.¹¹⁴

¹¹⁰ E.g. “If there exists any cause of anything, either the unmoved is the cause of the unmoved, or the moved of the moved, or the moved of the unmoved, or the unmoved of the moved” Sextus Empiricus, *Against the Physicists* I, §227, 227.

¹¹¹ Sextus Empiricus, *Against the Physicists* II §§207-208, 104-105.

¹¹² Relations of one sort or another are widely discussed in the *Muḥaṣṣal*. E.g. the non-reality of the relationship ‘simultaneity’ (*ma‘iyya*) (*Muḥaṣṣal*, 219); divine knowledge is not an alteration in God’s essence – because it is a relation and relations are non-real (*Muḥaṣṣal*, 412).

¹¹³ *Against the Physicists* I, 132-133.

¹¹⁴ See al-Ash‘arī, *Maqālāt* I, 300-301 (Mu‘tazilī concern around human agency); *Muḥaṣṣal*, 109 (the problem of coming to be).

An important feature of such sceptical challenges is the binary language of existence or non-existence of things-in-a-state. It contrasts with peripatetic language which assumes enduring objects and focuses on their properties, potentials and actualisations. The sceptics offer an alternative way of seeing change in the world, as a shift from one state of affairs to another from the point of view of a particular observer in two identifiable moments of time. Such a punctuated view of predication-event sequences is characteristic of al-Ash‘arī himself, and several of his Mu‘tazilī predecessors.

Perhaps the most obvious example for this study of an exemplary link with the sceptical tradition is Ghazālī’s use of the fire and the cotton to suggest that natural causality is not an object of experience.¹¹⁵ This is in the service of the Ash‘arī maxim that God is the only real agent cause in the universe. Perler and Rudolph point out its prehistory in the *kalām* tradition and before.¹¹⁶ The epistemological point deployed by Ghazālī can be found, attributed to the sceptics, by Diogenes Laertius:

We also perceive that fire burns. As to whether it is its nature to burn, we suspend our judgment.¹¹⁷

Ghazālī at that point is arguing like a genuine sceptic. Al-Ash‘arī himself, on a similar point, appears to be a negative dogmatist. Fire does not have a ‘nature’.

The quotation also highlights a general characteristic of the sceptical approach to knowledge, which will be important for us to consider in evaluating Rāzī’s approach to scientific knowledge. Immediate appearances provide the most reliable primary data (for all that they can be misleading), abstract explanations of those appearances are objects of suspicion.¹¹⁸ We can see the fire and we can see that it burns, but whether there is some

¹¹⁵ Ghazālī, *Incoherence* 17, §5, 167.

¹¹⁶ Perler and Rudolph 2000: 32 ff. Van Ess 1991-7 (IV): 475.

¹¹⁷ Diogenes (II) “Pyrrho”, §§104-105, 515.

¹¹⁸ The primacy of immediate perception is also a feature of Epicurean epistemology. There may thus be multiple notional accounts for phenomena. See Epicurus, “Epistula ad Pythoclem” §§94-95, 32-33.

abstract entity called a nature that resides within it and is what makes it burn is impenetrable to us. According to Diogenes, a similar point would hold for the argument for the existence of invisible pores, on the basis of perspiration.¹¹⁹ It is interesting, then to see Rāzī in the *Nihāya* (a robustly *kalām* work) rejecting the theory of sound as waves in the air, as the essence of sound, over and above the actual experience of sound.¹²⁰

The material from the sceptical tradition has obvious advantages for anyone at odds with a particularly dominant school of thought, as it provides a ready supply of ammunition for set-piece exchanges. Rāzī is certainly prepared to use such material for apologetic purposes, but he seems (we shall suggest) more concerned to face the fact that there are arguments that cannot be definitively resolved and to acknowledge the limits of certainty. Insofar as he is influenced by scepticism, it leaves him a critical realist, as opposed either to an uncritical realist or to an antirealist.

Shihadeh raised the question of how sceptical approaches and themes might have entered the *kalām* thought-world. The answer may be through the medical tradition. Galen's writings and other medical texts had been available from the early years of the translation movement. What might the Arabic writers find there?

Jonathan Barnes describes the emergence of an empirical school in medicine that grew impatient with the elaborate theoretical superstructures deployed by the 'logical' school in explaining why certain actions had certain effects, and opted instead for a pragmatic matching of observable symptoms, observable actions and observable results:¹²¹

The Empirics relied solely on "experience"; they studied symptoms observed by themselves or recorded by others, and grouped them into "syndromes"; they sternly rejected any inquiry into "the nonevident," *ta adēla*. They thus "embraced

¹¹⁹ Diogenes (II), "Pyrrho", §89, 500.

¹²⁰ *Nihāyat-al-ʿuqūl* I, 118 (we cannot define sound as waves, the immediacy of experienced sound is primary); nuanced at *Mabāḥith*, I, 305: air waves are the proximate cause of the experience of sound.

¹²¹ Barnes 1983: 152. Frede, "Empiricism", 229.

evident causes as being necessary, but contended that inquiry into hidden causes and natural actions was superfluous, since nature is not apprehensible”.

Barnes highlights (among other things) an early (C3 BCE) conflict reported by Galen between Erasistratus and Herophilus as an example of a medical – rather than purely philosophical – challenge to theories of causation.¹²² The latter accepted such causes at least hypothetically, but the former denied any ‘antecedent causes’ in the explanation or treatment of an illness. The presenting symptom was what mattered, and all other circumstances were irrelevant.¹²³ For Barnes, ancient physicians are unquestionably significant in the development of sceptical arguments against causation.¹²⁴

Barnes also notes levels of scepticism about causality. Sextus (a doctor himself) actually relies on causal language in an everyday sense. Barnes distinguishes accordingly between a sober scepticism at one end, appropriate to the medical profession, about inobservable, hypothesised or notional causes (like invisible pores or underlying bodily states) and an increasingly extreme scepticism that calls into question the possibility of causes at all. All shades of scepticism are to be found in the arguments reported by Sextus and, by implication, in the discussions of the wider tradition.¹²⁵

Van Ess draws attention to accounts of doctors among the early Mu‘tazilīs and the possible influence of Galen’s reports of alternative modes of reasoning on the development of *kalām*.¹²⁶ So medical science may not only help explain how sceptical themes and attitudes find their way into the Ash‘arī tradition (more clearly at the sober end), but may

¹²² Barnes 1983: 152-153.

¹²³ For Galen’s account (in the Latin rendition of Nicolo da Reggio) of the debate see Hankinson 1998: 102-146. There are some interesting forensic problems with denying antecedent causes (Orestes did not kill his mother, she bled to death) relevant to religious or ethical questions about human agency.

¹²⁴ Barnes 1983: 153.

¹²⁵ Barnes 1983: 158-160.

¹²⁶ Van Ess 1991-7 (I): 51; (II): 396; (IV): 665.

also offer us a helpful background for interpreting Rāzī's adaptation of Ibn Sīnā's scientific method in Part II.

§1.3 Conclusion

In the first two sections of this Chapter I have used 'whole universe' accounts from Hellenic philosophers directly or indirectly familiar to the Islamic tradition to illustrate the different ways that first and second causality can be understood. In mechanical universes where mind and intention are epiphenomena, first causes are either the first member of a 'domino' sequence of causes in time, or the eternal laws (like Democritus' 'whirl' and the basic properties of atoms) that govern the evolution of such sequences. In universes where mind and intention are at least as fundamental as matter, first causes are the initiating activity of intelligent agents or of purposive non-intentional agents.

Where universes have a God who creates *ex nihilo*, either in a single act of initial existentiation or in a sustaining existentiation, such a being is a first cause of existence, but may or may not be a first cause of causal chains (simultaneous or sequential in time) *within* the universe. Intelligent or purposive (natural) agents who, internally to the universe, initiate events are secondary causes in a slightly different sense in each case.

Tabulating the universes gave us a helpful way of classifying the Ash'arī occasionalist universe and showed the clear contrast with the Avicennan universe populated with secondary causes. But the common interest in sustained existentiation and simultaneous causality, also presented an important crossover. Because of it, God-centred descriptions of existentiation can share truth values with descriptions of inner-world causation. With a determinism that allows the spontaneous (but not indifferent) choices of subordinate agents, the scene is set for the rapprochement between these apparently divergent world views evidenced in the work of Rāzī and other *kalām* authors.

The second and third section also brought some key topics into relation with their Hellenic roots. The discussion of hylomorphism, bodily form and the nature of space in particular threw up another point of crossover between the diverse Ash‘arī and Avicennan systems, namely that the former, as a lean, atom-based form of hylomorphism, already has more in common with Aristotle and Plato than with Epicurus. We shall see how Rāzī exploits this in Part III.

The final section considered sceptical influence on Ash‘arī arguments and followed Jonathan Barnes, in surmising the influence of the medical tradition. This material will inform some of the epistemological discussions of Part II.

We can now look in detail at al-Ash‘arī and Ibn Sīnā and their reception, before exploring Rāzī’s first systematic engagement with Peripatetic science in the *Mabāḥith*.

Chapter 2: Al-Ash‘arī, Ibn Sīnā, and the Critical Reception of Ibn Sīnā

In the first two sections of this chapter, I want to sketch and contrast in more detail the very different universes of al-Ash‘arī and Ibn Sīnā and their accounts of causality. I will note how different epistemological approaches affect judgments about the structures of the world. I will also highlight points significant for Rāzī’s appropriation and reworking of the two traditions. In the third section I expand on the critical reactions to Ibn Sīnā’s work up to the time of Rāzī. This will give a richer context for evaluating Rāzī’s own critical engagement with Ibn Sīnā’s writings in the remainder of this study and help us appreciate how his own approach to causality in the world, while not occasionalist, preserves distinctive *kalām* themes and achieves core Ash‘arī goals.

§2.1 Causality in Al-Ash‘arī’s Occasionalist Universe

Al-Ash‘arī’s universe, aside from God, consists of pre-dimensional, indivisible particles without any properties apart from weight and the occupation of points in space.¹²⁸ These can be aggregated to form three-dimensional bodies with a minimum volume, with each atom located in a lattice of discrete, empty predimensional spaces, for one or more discrete, minimal moments of time.¹²⁹ The properties or ‘accidents’ (*a‘rāḍ*) associated with location in space (position, arrangement, juxtaposition, separation, motion, rest) are known as *akwān*, and, as we saw in the last chapter, are the basis for one of the *kalām* proofs of the origination of matter. Other properties, ranging from obvious phenomenal properties like colour, taste, etc. to more complex ones like ‘life’, ‘knowledge’ inhere in

¹²⁸ Dhanani attributes the development of atomism in *kalām* to Abū l-Hudhayl (d. 841). Dhanani 1994, 9: van Ess suggests the ultimate spur is Ḍirār. Van Ess 1991-1997 (IV): 460. For Ash‘arī’s own account of the palette of opinions available to him on the topic of body and atoms, see *Maqālāt*, II, 1-10. Most of the specific doctrines that follow are taken from the compilation of the Ash‘arī scholar, Ibn Fūrak (d. 1015), *Mujarrad Maqālāt al-Ash‘arī*.

¹²⁹ For the notion attributed to al-Ash‘arī that an atom is its weight, see *Mujarrad*, 206, 246. Weight here, importantly, does not mean that which makes an object move downwards, but that which is associated with the perception of heaviness (*Mujarrad*, 275).

individual atoms themselves, generating the attributes of objects that we perceive (moving, living, knowing).¹³⁰ Some of these (like colour and location) are accidents that atoms cannot be without. The set of accidents in each atom is renewed from moment to moment by God. The atoms themselves (according to al-Ash‘arī) continue to exist from moment to moment because of the (renewable) accident of endurance (*baqāʾ*).¹³¹ Mental objects (perceptions, beliefs, thoughts, desires) are similarly created from moment to moment, but have no cause other than God.

This is occasionalism. The universe is a discrete set of predication events existentiated by God in atomic particles from discrete occasion (*waqt*) to discrete occasion in the temporal sequence. There are neither temporally antecedent causes in the universe nor simultaneous ontological causes. The only inner-world causality is in the quasi-analytic relation of the accident inherent in the atom to the phenomenal attribute displayed by the visible body. The appearance of secondary causality and necessitation among inner-worldly entities arises because God chooses to create the predicate events in regular patterns (*‘ādāt*). God could always choose to break that pattern, though God rarely does.

This has consequences for science. Fire does not have a nature which makes it hot. We call ‘fire’ those bodies that share a particular structure (*binya*) of observable attributes, including ‘hot’. But it is God who creates the heat in those bodies. Nor is there a nature which makes the fire move upwards. It is God who moves the particles. In a distant echo of Diogenes’ Pyrrhonists, ‘nature’ is an empty concept.¹³² It is true that fire *blazes* (the particles

¹³⁰ Motion and knowledge in an object are each an *‘illa* (determinant/analytic) cause of that object’s being moving and knowing respectively. Ibn Fūrak, *Mujarrad*, 288. For *‘illa* as an ‘entitive determininant’ see Thiele 2011: 65. Once the accident is in the atom, the phenomenal effect follows necessarily.

¹³¹ Gimaret 1978: 49. Ibn Fūrak, *Mujarrad*, 238.

¹³² See Ibn Fūrak, *Mujarrad*, 271 (conventional application to a set of properties), 132 (upward motion), 76 (no natures), 131 (‘nature’ useless concept), 289 (fire as a *bunya*, a visible structure of properties). Compare Pyrrhonist scepticism about natures: Diogenes (II), “Pyrrho”, §§104-105, 515. We should note that al-Ash‘arī is making a negative dogmatic claim (nature is an empty concept) rather than a properly sceptical claim, suspending judgment on whether there are natures or not. However, as we have seen, Barnes’ ‘sober’

of fire visibly move among the moving particles of wood) but not true that fire *incinerates* (it is God who separates the particles that manifested ‘wood’ and gives them new attributes).¹³³

It also has consequences for human action, central to the dispute with the Mu‘tazilīs over divine power (*qudra*). For any given action, whether basic (the movement of a finger) or extended (switching on the light), God creates both the *qudra* (capacity) for the action and the action in the same moment. What is an act of existentiation for God is an act of acquisition (*kasb*) for the human. The expression ‘God creates the act (of moving the finger) in the human and creates its ‘effect’ (the light being on)’ is co-extensive with ‘the human acquires that action’ (switching on the light).¹³⁴ This expressly challenges Mu‘tazilī doctrines that humans have genuine choice over their actions and can initiate necessary, temporal causal chains (of efficient causes, *asbāb*) linking basic actions with their effects.

For Mu‘tazilīs the movement of a body at one set of points and one moment in discrete space-time can engender (*tawlīd*) a ‘pressure’ (*i‘timād*) in an adjacent body which causes it to move a unit of space in the next discrete moment of time, simultaneously engendering a further pressure that will lead it to move again in the third moment of time and so on.¹³⁵ This theory of action allows Harold to fire an arrow and kill Egbert, even if Harold himself perishes the moment his arrow leaves the string.

scepticism, does indeed allow the affirmation of patent realities, while refusing to engage with theoretical explanatory constructs inaccessible to the senses.

¹³³ Ibn Fūrak, *Mujarrad*, 271.

¹³⁴ Ibn Fūrak, *Mujarrad*, 91-92. A paraphrased example of acquisition might be: ‘switching on the light becomes an attribute of this person’. A dynamic predication-event.

¹³⁵ Though Ibn Sīnā will criticise this theory (a cause must be simultaneous with its effect) there are clear analogies with Philoponus’ theory of *mayl*. Ibn Sīnā, *Physics* IV, 14, 504-512. It is effectively a grainy space-time version. For descriptions of the theory, see al-Ash‘arī, *Maqālāt*, II, 43, Abū l-Barakāt al-Baghdādī, *Mu‘tabar*, II, 113 (hammer blows on an anvil), and the Mu‘tazilī contemporary of Rāzī from Yemen, al-Ḥasan al-Raṣṣās, in Thiele 2011: 6 (text).

However, for Ash‘arī, because that engendered sequence evolves necessarily, according to inner-world rules, this, just as much as a genuine human freedom of indifference, sets a limit on God’s power over all things. The *qudra* (capacity) for an action is a property of an individual atom alone, and the associated act is restricted to that atom. However, God could create a *qudra* (like motion) and not create the act (the movement). One of al-Ash‘arī’s examples is pushing the stone which doesn’t move.¹³⁶ Something similar applies to extra-mental events and their perception. All the conditions for vision may be present (light, proximity, healthy organs), but God can still create the visible object without creating the perception in the human onlooker (and vice versa).

Al-Ash‘arī’s universe consists only of atomic bodies, accidents and God, so questions about anthropology are reduced to questions about observable attributes. His answer to ‘what is the human?’ relies in this way, analogously to the definition of fire, on the definitions of grammarians.¹³⁷ He rejects the philosophers’ definition of the human (the human is a rational, mortal animal) as incoherent: ‘he used to say that this definition was composed of things that that could not be combined, namely life and death’.¹³⁸

There is no place in al-Ash‘arī’s universe of atoms and accidents for separable souls. Personal identity in the world is provided through atomic bodies on which the appropriate set of accidents has been bestowed by God. ‘Self-moving’ beings like humans, angels and demons are combinations of atoms with particular properties that can be removed or reconstituted by God at will.¹³⁹ The equivalent of the soul for Al-Ash‘arī is thus a single

¹³⁶ Ibn Fūrak, *Mujarrad*, 131 (*qudra* independent of action), 132 (the rolling stone). Note that al-Ash‘arī allowed the *‘illa* language even though he denied necessitation.

¹³⁷ Ibn Fūrak, *Mujarrad*, 215.

¹³⁸ Ibn Fūrak, *Mujarrad*, 217-218. For a very similar attack on this definition, detaching phenomenal properties from a supposed ‘essence’, see Sextus Empiricus, *Against the Logicians* I, §§269-279, 144-148. Note again that al-Ash‘arī’s use of the argument challenges an essential definition of humanity and prefers a definition based on directly observable properties (life, knowledge, physical structure) alongside the putative atom. This is dogmatic, but compatible with ‘sober’ scepticism.

¹³⁹ For the mortality of angels and demons see Ibn Fūrak, *Mujarrad*, 217.

atom that has the accident ‘life’ etc. and renders the whole of the body ‘living’.¹⁴⁰ Formally, this has affinities to Aristotle’s hylomorphic animating soul, (‘the soul is the form of the body’), but is clearly distinct both from a purely material entity like Epicurus’ concatenation of fine atoms and from the non-material souls of Aristotle and Plato. This is one point at which Rāzī will very clearly diverge from the classical Ash‘arī position.

§2.1.1 Al-Ash‘arī and Mu‘tazilīs – Interaction.

Some theological positions of al-Ash‘arī and the Mu‘tazilīs are significantly different. Nevertheless, his cosmology is largely drawn from diverse ideas already available within the tradition in which he began to practise *kalām*.¹⁴¹ Much of this can be appreciated by a trawl through al-Ash‘arī’s *Maqālāt*, his own compilation of his predecessors’ key doctrines.

Perler and Rudolph note that scepticism about ‘natures’ (the capacity of fire to burn) and acknowledgement of direct divine involvement in the natural order is already found in the atomism of Abū l-Hudhayl (d. 841). Abū l-Hudhayl also discusses the issue of atomic time – bound up as we saw with the question of continuous or discrete space and motion – and the related question of endurance.¹⁴² However, in Abū l-Hudhayl there is still ‘a certain independence of bodies, and the course of natural events follows its own laws’.¹⁴³ Atomism is not *ipso facto* incompatible with a natural order, and accepting atomic time (a time with minimal, momentary parts) does not mean committing to occasionalism. This is important for appreciating the distinctiveness of Rāzī’s affirmation of atomism in the *Maṭālib*.

¹⁴⁰ Ibn Fūrak, *Mujarrad*, 216-217.

¹⁴¹ See Rudolph 2016a: 356-357. Rudolph credits al-Ash‘arī with combining the different fragments from his predecessors to produce a coherent concept of occasionalism.

¹⁴² Perler and Rudolph 2000, 47-48.

¹⁴³ Perler and Rudolph 2000, 31-32, 36-37. For Mutakallimūn using ‘nature’ language in the physical account of the human self, see al-Ash‘arī, *Maqālāt*, II, 29.

The principle that physical human action is limited to the basic acts of bodily movement is found in Sāliḥ Qubba (d. 860?). Abū ‘Alī al-Jubbā’ī (d. 915, al-Ash‘arī’s mentor) introduces God’s custom (*‘āda*) to explain the regularities in nature. God acts according to a rule that he has established, but God could change the rules at any point.¹⁴⁴

In a significant discussion between the Baghdad Mu‘tazilīs and Ibrāhīm al-Nazzām, the Baghdādīs press for a distinction between the causality of *change* in objects, dependent on their interacting natures, and the causality of their *existence*, dependent on God.¹⁴⁵ This points us back to the crucial point made in the last chapter. The narrative of interactive inner worldly causality and the narrative of divine existentiatio are formally distinct, but can share the same theological and physical-observable truth conditions. Al-Ash‘arī’s account of *kasb* presupposes such logical equivalence.¹⁴⁶ When he reports on the school of Ḍirār ibn ‘Amr (d. ca 815) in the *Maqālāt*, which introduces the language of *kasb*, he notes the oxymoron ‘that both God and human genuinely perform the action’.¹⁴⁷ In his own modification of this language, however, he is careful to avoid any hint of paradox. There cannot be more than one agent of a single action, nevertheless it is true to say of the same physical event that God is the creator of the action and that the action belongs to the human.

Perler and Rudolph thus sketch an organic relationship between Ash‘arism and a range of earlier Mu‘tazilī thinkers. Ideas from their physical philosophy (in the broadest

¹⁴⁴ Perler and Rudolph 2000, 44-46.

¹⁴⁵ Perler and Rudolph 2000, 50.

¹⁴⁶ ‘The works of the servants are created, and if a single action belongs to two agents one of them creates it (namely God) and the other acquires it (*iktasaba*), namely the servant’, Al-Ash‘arī, *Maqālāt*, I, 339.

¹⁴⁷ Ḍirār contrasts *khalaqa* and *iktasaba* and glosses these as ‘God on high is the agent of the servants’ actions in reality, and they are the agents of them in reality’. The clear implication is that ‘performs’ or ‘acts’ has two senses. Van Ess suggests Ḍirār means that the human agent really performs the basic action and that God (through nature) accomplishes the extended action. Van Ess 1991-7 (III): 45-47: ‘Ḍirār...spricht deutlich von zwei Tatern, er ist Synergist’. Al-Ash‘arī will reject that language. “Yes” to the numerical identity of the existentiatio event and the acquisition event. “No” to any suggestion that the acquirer is a real agent. Ibn Fūrak, *Mujarrad*, 91, 106.

sense) are freely co-opted to support theological goals. That creative interaction with the Muʿtazilī physical tradition continues, and informs Rāzī’s work, in the more expository *Muḥaṣṣal* as well as in the elaborate reasoning processes of the *Maṭālib*.¹⁵¹ *Kalām* is a seedbed of ideas and approaches out of which the rival schools co-evolve.

§2.1.2 Al-Ash‘arī, *falsafa* and Philosophy.

Sabra’s account of *kalām* atomism describes it as an ‘alternative philosophy to Hellenizing *falsafa*’, that is, an alternative to the conscious appropriation of identified Hellenic sources in the Peripatetic tradition.¹⁵² However, Dhanani suggests that its ultimate origin may plausibly be Epicurean atomism or possibly the Vaiśeṣika atomism of Epicurus’ Indian contemporaries Gautama and Kanada.¹⁵³ But the ultimate origins are less important for our purposes than the fact that the elaborations of the theory from al-Ash‘arī to Rāzī take place in a context in which Hellenic writings, which include atomistic accounts, provide a constant intellectual reference point for the evolving discussions around atomism and the theology it underpins.¹⁵⁴ Dhanani reminds us that Hellenic philosophy does not just mean the Aristotelian/Platonic ideas foregrounded in the *falsafa* of al-Farābī and Ibn Sīnā. It includes competing ideas from rival schools reported within that tradition and the parallel traditions (mathematical, medical, Christian and Jewish theological) that each have their own evolutionary history.

It is not surprising, then, that we seem to find in al-Ash‘arī hints of alternative approaches that are just as Hellenic as Peripatetic *falsafa*: an atomic theory with echoes of

¹⁵¹ Jan Thiele gives the language of *ḥāl* (the state) as an example of a term that is taken from its original Muʿtazilī context and appropriated in later Ash‘arī theology. Thiele 2016b: 377- 382.

¹⁵² Sabra 2006: 199-272.

¹⁵³ Dhanani 1994: 164-166. For an account of atomic theory in the Indian tradition see Mishra 2006. Since there was clearly intellectual contact between India and the Hellenic world from the 4th Century BCE, mutual influence would be unsurprising, particular in ninth century Persia. See also van Ess 1991-7 (IV): 467.

¹⁵⁴ See Cornelia Schöck’s discussion of Ḍirār’s distinctive ontology of accidents, Christian neo-Platonist elements, and reactions to Aristotle. Schöck 2016: 66-77.

Epicurus; a sort of refraction of hylomorphism based on atoms exhibiting phenomenal properties; an epistemology that privileges the infallibility of immediate sense experience (reminiscent of Pyrrho and Epicurus); a ‘conventional’ definition of natural kinds in terms of presenting properties, rather than in terms of a notional inner essence (reminiscent of Sextus); passages of argument that echo sceptical challenges to dogmatic positions on nature, causality and time.

Philosophy, rather than *falsafa* (as the Aunt Sally of later polemic) is a palette of disparate ideas and approaches that uses and constantly renews a common language of argument. It too is a seedbed from which individual schools emerge and evolve, and eventually themselves become part of the intellectual compost. This diversity is something Rāzī seems to recognise. He refers to the philosophers of antiquity as *ḥukamāʿu*, sages and, as Griffel suggests, identifies with the emerging, broad-based practice of *ḥikma*, rather than Avicennan *falsafa*. As he engages with the diverse arguments of the *kalām* and Peripatetic traditions, he constantly searches for convergences towards a truth established by the highest quality reasoning.

§2.1.3 Theological Goals and Epistemology

Al-Ash‘arī, like any Mutakallim, accepts that God can be known through reason – indeed he affirms a Qur’anic obligation to use reason to show the existence of God and God’s attributes.¹⁵⁵ He is committed to two sets of arguments. The first proves that there is an eternal source of everything in the world. The second proves that that source is a benevolent agent. The traditional *kalām* proofs for the first are based on origination (*ḥudūth*): everything in the world is originated, therefore there must be something eternal (*qadīm*) and unoriginated from which the originated comes.¹⁵⁶ The second proof argues

¹⁵⁵ Ibn Fūrak, *Mujarrad*, 190.

¹⁵⁶ One major argument is a regress argument similar to Aristotle’s unmoved mover argument in *Physics* Θ. We have briefly touched on an argument from the origination of accidents to that of atoms. We will

from design. Inspection of the ordered sequences of events in the world leads us to affirm that the originator is a living, knowing and powerful agent.¹⁵⁷ Some form of physics and epistemology is essential to such proof. In fact, one of the reasons al-Ash‘arī criticises the Mu‘tazilī physical doctrine of *tawallud* is that their cause (*sabab*, i.e. the *i‘timād*) ceases to exist before its effect. If causes can do that, then there is no basis for arguing from originated events to an eternal cause.¹⁵⁸

But there is a fragility to the proof from origination arising out of the internal debates of *kalām*. Ash‘arīs and Mu‘tazilīs were not just at odds over questions of human action and God’s power, but over the status of the attributes of God.¹⁵⁹ Are these attributes temporal manifestations of God’s action (which makes them originated), or are they co-eternal properties, with some sort of in-between ontic status?¹⁶⁰ Ibn Kullāb’s formulation ‘neither identical to God nor other than him’ confers just such a status and was embraced by al-Ash‘arī.¹⁶¹

Wisnovsky suggests that this choice gradually eroded the plausibility of the proof from origination. The *qadīm/ḥādīth* distinction has an implicit causal aspect and depends on using many temporal beings to deduce just one eternal being as sole cause. To suppose a multiplicity of eternal entities muddies the waters and nudges *kalām* thinkers towards arguments explicitly based on causal, rather than temporal priority.¹⁶² That in turn

encounter the ‘mereological argument’ (from the origination of the parts of the universe to the origination of the whole) in Chapter 3.

¹⁵⁷ Ibn Fūrak, *Mujarrad*, 287, and the proof from embryology in al-Ash‘arī, *Kitāb al-Luma‘* 1.1, 1.

¹⁵⁸ This is of course an *ad hominem* argument that only works for people who are already committed to the argument from origination.

¹⁵⁹ See Thiele 2016a: 228.

¹⁶⁰ The particular *casus belli* was the status of the Qu’rān, as divine recitation. Bin Ramli 2016: 217.

¹⁶¹ Thiele 2016a: 228.

¹⁶² Wisnovsky 2003: 227-243. He highlights two items in particular that appear in al-Baqillanī (d.1013) and elsewhere: (1) the tentative explication of the causal implication in the turn of phrase *qadīm li-nafsihi/ḥādīth li-nafsihi* as a distant precursor of Ibn Sīnā’s *wājib bi-nafsihi/wājib bi-ghayrihi*; (2) the explication of ‘eternal’ as that whose non-existence is not possible, paving the way for the *wājib al-wujūd* (234-235, 237).

provides the context both for Ibn Sīnā's reformulation of the argument in terms of necessity, and the attractiveness of that formulation for subsequent *kalām* thinkers, including Rāzī.

Then there is a question how to justify such rational argument within the Ash'arī framework itself. God is the immediate cause of my perceptions and knowledge from moment to moment. These, however, are ineluctably necessary (*ḍarūrī*) and infallible – what I see is what I see and what I know is what I know. This much blends an Epicurean prioritisation of immediate sense perceptions with 'sole agent' theology. But if God can choose to make me see what is not there, where does that leave the foundations of the theological arguments based on observation of the world?

Suppose, though that, by God's custom, we observe things as they are. We observe a world where we push stones and they do not always move. Fire blazes and wood burns, but we cannot see that one is making the other happen. We conventionally call 'fire' and 'humans' things that 'look like this' but cannot ascribe to them an underlying nature. We have the freedom to explain phenomena in a number of ways, (some of which we may prefer for other reasons) but we cannot reach firm conclusions about anything.¹⁶³ What is more, by removing genuine agency from the visible world, we seem to remove the analogical basis for supposing a sole agent beyond the visible world.

We shall look at Rāzī's response to these questions in Part II. Here we can note that al-Ash'arī's account of following the logic of argument, though paradoxical, seems consistent with his general account of human action.¹⁶⁴ God existentiates our actions, we

¹⁶³ For examples of such freedom in Epicurus, see "Epistula ad Pythoclem", §§94-95, 32-33 (multiple explanations of the phases of the moon); in Sextus, see *Against the Logicians*, II, §306 (against arguments for invisible pores).

¹⁶⁴ Ibn Fūrak, *Mujarrad*, 284-288. Especially, 'the soundness of reflection is known initially and finally through acquired knowledge and this is that reflection comes about in conformity with the command of God in the same way that the soundness of everything else is known by that command', 285.

merely ‘acquire’ them, nevertheless, we are obliged to live *good* lives. Similarly, we are *obliged* (*yajib*), but not *constrained* (*naḍṭarir*) to follow the conclusions to which sound arguments direct us, even though ‘following the argument’ and ‘reaching the conclusion’ are acquired actions created by God.¹⁶⁵ Our cognitions, whether inborn awareness, infallible perception or the last proposition at the end of a line of reasoning are all equally momentary creations of God. The necessity of logical consequence is thus not a necessity of inescapability or of compulsion, but of obedience.

§2.2 Ibn Sīnā’s Universe¹⁶⁶

Ibn Sīnā’s universe is a Ptolemaic set of concentric, continuous material spheres. An outer starless sphere contains the sphere of the fixed stars with its laterally oscillating rotation. Within that, the spheres of the seven planets, Saturn, Jupiter, Mars, Sun, Venus, Mercury and Moon rotate, with additional rotations internal to their spheres (epicycles). The sublunary space divides into the four mutable elements of the Peripatetics, fire on the outside, air within that, earth at the centre and water (mostly) on the surface of the earth. There is no void, nor is there any location beyond the outer sphere.¹⁶⁷ The fifth element out of which the celestial spheres are formed is immutable and infrangible. They are accordingly eternal, in both past and future. Matter, time and motion are continuous, (not atomic), interdependent and eternal.

Though Ibn Sīnā’s visible universe is material, it is populated with non-material beings other than God who exercise agency and are the ultimate source of motion in material objects. Material objects have independent natures and once actualised can be

¹⁶⁵ Mu‘tazilis (similarly to the Stoics) suggest that the premisses of an argument ‘cause’ its conclusions by a process of engendering.

¹⁶⁶ For a comprehensive survey of Ibn Sīnā’s physics, see Lammer 2020. This study focuses on a sketch of the elements that Rāzī will challenge.

¹⁶⁷ ‘Place’ is that which is enclosed by a bodily surface, so where there is no enclosing surface, there is no place.

effective agents, however, they remain inert unless acted on by *intentional* agents. In the ontological hierarchy, the most important such agents are intellects (*ʿuqūl*). Their origins lie in the discussions of *Metaphysics* Λ, and, thanks to the Platonising developments of Plotinus and Proclus, become in Ibn Sīnā the sources of successive tiers of existentionation from the outer sphere of the universe to the earth at the centre. The existentionation in the sublunary world that affects us is presided over by the ‘agent intellect’ or ‘the giver of forms’, who brings free-standing substances (independent property bearers) into existence in processes of generation and decay in the natural world.

The second set of agents are souls who are the source, not of existentionation but of change. ‘Change’ specifically applies to the *accidents* enumerated in Aristotle’s categories: change of quantity (growth), of quality (alteration) and of position (motion). In the sublunary world (following Aristotle) the different classes of embodied soul are capable cumulatively of growth, nutrition and reproduction (plants), motion and perception (animals), and reason in the embodied, rational souls of humans.

In the celestial realm, the souls of the spheres are responsible for their cyclical motions. This solves a problem for standard Peripatetic science. All natural (i.e. non-intentional) motion is rectilinear, goal-directed and therefore finite. Earth moves downward until it reaches its natural place at the centre, where it ceases to move. Fire moves upwards until it too rests in its proper place. If the celestial elements’ motion were natural, we would be unable to explain why it was eternal and circular. The only explanation is that they are moved intentionally by souls ‘choosing’ to move in this way throughout eternity.

The scheme is hylomorphic, but with the addition to the original Aristotelian picture of the controversial ‘bodily form’ hypothesis.¹⁶⁸ As we saw in the last chapter, the

¹⁶⁸ For a full discussion of the background to bodily form theory in Ibn Sīnā see Lammer 2020: 114-154.

notion of pre-formal prime matter whose first actualisation is as a quality-free, dimension-receptive body, fills an explanatory gap. However, this prime matter with its ‘bodily form’ can only be actual in the world as a specific body with the accidents of specific dimensions, and in the form of one of the elements.

The behaviour of any given elemental body follows a pattern of transition from an actuality that includes new potentials, to new levels of actuality. Actual fire heats and rises. Potentially it can be combined with other bodies to receive higher levels of form, at which point *formally* new entities (like the bodily humours) come into existence, or rather, become actual. Matter that is numerically the same becomes something new that did not exist before. Similarly, with the (widely accepted) transitions among the elements themselves: the body that is fire has the potential to become the body that is earth etc. The underlying pre-formal matter endures throughout.

That is the prosaic aspect of the story of prime matter and bodily form, solving a problem within the framework of Peripatetic physics. However, Ibn Sīnā is not just interested in being as actualisation – that is, the acquisition of a form in pre-existing matter – or in material objects as continuous wholes. He believes in a creator God and is interested in actualisation as existentiation. At this point he takes up Plotinus as rendered into Arabic in ‘The Theology of Aristotle’, and the notion of ‘bodily form’ becomes a significant element in his theological account of the generation of reality from the One.

Plotinus’ ultimate being was based on a Platonic ‘One’ beyond being and description. Peter Adamson notes that this was clearly a bit much for Plotinus’ Islamic translator, who toned this down to assimilate the One to the more theologically amenable self-intellecting intellect of Aristotle in *Metaphysics* Λ.¹⁶⁹ This is the One that Ibn Sīnā presents, an intelligent and intelligible non-material source of the existence of everything that is. He

¹⁶⁹ Adamson 2016a: 25.

retains the crucial piece of Plotinian metaphysical logic that the One can only generate one thing without compromising its unicity.¹⁷⁰ This leaves him with the problem of generating the multiplicity of beings in the observed world from this single source.

He follows Plotinus' solution with some important adaptations.¹⁷¹ The One, in its superabundance of being, necessarily generates the first intellect. The first intellect, however, is aware of its status as an existent, necessitated by the ultimate necessary being. It is also aware that it is distinct from that being, and therefore not necessary. That is, it is possible or potential. Unlike the One, whose knowledge and awareness is of itself as an undivided whole, the first intellect has three differentiated concepts: necessity, existence and potentiality. Thus, plurality enters the cosmos conceptually.

Out of these three concepts Ibn Sīnā's first intellect generates (1) the second intellect (necessity) (2) the soul of the first sphere (existence) and (3) the body of the first sphere (potential/possibility). This generation is atemporal and continuous, producing a sequence of similar triads of intellect, soul and sphere down to the final sublunary sphere.¹⁷² Here, the last of the intellects is in charge of distributing sequences of substantial forms – that is the forms of independent property-bearing substances, like water, trees and yaks – in the mutable matter of the lower world.

This theological narrative allows Ibn Sīnā to draw together disparate ideas under one heading. Consider the separate issues of bodily form and creation of matter out of

¹⁷⁰ A proposition that Rāzī will challenge, as we shall see in the next chapter.

¹⁷¹ Ibn Sīnā, *Metaphysics* IX, 4, 326-344. Plotinus himself discusses the 'first three hypostases' generated by the One, but does not present a full hierarchy of intellects. Ptolemy and Proclus may have prompted Ibn Sīnā to elaborate his system.

¹⁷² Ibn Sīnā, *Metaphysics* IX, 4, §§11-12, 330-331. This appears to build on material from Plotinus, *Enneads* V, 3 particularly §§6-7, 88-95; §10, 102-109; §§15-16, 122-131. Plotinus, however, seems to derive his plurality more from the triad of necessity, sameness and otherness, with echoes of Plato's *Sophist*, rather than Ibn Sīnā's necessity, existence and possibility.

nothing.¹⁷³ The account above identifies matter with ‘potential’. Thus, strictly speaking (and here again he is echoing an argument found in Plotinus) absolute matter is pure potential waiting to be actualised, and as pure ‘not-anything’ can legitimately be labelled absolute non-being.¹⁷⁴ The One stands at one end of existence as that which is fully actualised. Notional prime matter stands at the opposite end, as bare potential that has no reality until given the most basic form. ‘Bodily form’ is now more than just a contrived solution to a problem that arises out of a slightly inflexible explanatory framework. This actualisation becomes the first step in the existentionation of the material universe, from the ontologically prior, intelligible reality of the One.¹⁷⁵

A second set of links ties the Peripatetic account of change as a transition from potential to actuality, with the flow of necessitation from the primary ‘necessary of existence of itself’ (*wājib al-wujūd li-dhātihi*) through a succession of entities that are ‘necessary of existence through another’ (*wājib al-wujūd li-ghayrihi*). This second-order necessary being is necessary with a ‘necessity of the fact’ as a consequence of the law of the excluded middle.¹⁷⁶ Once something is there, it cannot be there and not there at the same time. So, while the piece of wood remains uncarved it is a garden gnome ‘in potential’, and the garden gnome itself is merely possible. When it becomes an actual gnome due to the action of the gnome-maker, it also becomes necessary with a necessity of the fact. The

¹⁷³ See Lammer 2000: 179-201 for the discussion of the ontological hierarchies in Ibn Sīnā’s system and the generation of matter, and resolving the ambiguities in the relationship between the infrangible matter of the spheres and the mutable matter of the sublunary sphere.

¹⁷⁴ See Plotinus (*Enneads* II, 4, §16, 146-149; II, 5 §§3-5, 160-165) for an example of this development of Aristotle’s pragmatic solution to the Sophistic problems of referring to non-being (the bronze is *not* a statue yet, and is therefore a sort of *non-being*).

¹⁷⁵ Note the ontological priority of form over matter in the flow of actualisation in Ibn Sīnā, *Metaphysics* IX, 5 §7, 336. For this fundamental neo-platonic thrust in Ibn Sīnā’s account of the universe see Lammer 2020: 103.

¹⁷⁶ Ibn Sīnā, *Metaphysics* I, 5, §24, 28; I, 6, §6, 32; I, 8, §§1-2, 38-39. The connection between necessity in the world and the basic logic of bivalence is pivotal to Ibn Sīnā’s metaphysics of causality.

gnome-maker is, of course, already actual, and is that other through which the gnome becomes necessarily existent.

This relation of the necessary to the possible (which Ibn Sīnā regards as a primary datum of reason) provides both the foundation for Ibn Sīnā's upgraded version of the *kalām* argument from origination and for his account of causation in the world, as that which necessarily brings about the transition from potential to actualisation.

We shall see that Rāzī broadly accepts the notion of a flow of necessitation from something that is 'necessarily existent of itself' through a succession of entities that are 'necessary through another' and embraces a version of Ibn Sīnā's argument for the 'necessarily existent of itself'.¹⁷⁷ However, we shall also see that he is not impressed by the theological derivation of the universe from the conceptual triad of necessity, existence and possibility. Importantly, he will reject Ibn Sīnā's assumption that the intelligible is by its nature ontologically prior to the material within the universe. As a result, he does not share Ibn Sīnā's *metaphysical* reasons for being committed to bodily form theory as the material basis for change in the universe.¹⁷⁸

2.2.1 Causes in Ibn Sīnā's Universe

Ibn Sīnā makes clear at the beginning of the *Ṭabī'īyyāt* that natural philosophers, in their study of bodies and their motions, work with principles that it is not their task to

¹⁷⁷ Griffel highlights the fact that Rāzī rejects Ibn Sīnā's claim that God's existence is God's essence in favour of a claim that God's existence is an entailed attribute of God's essence (Griffel 2021: 391 ff and *passim*). This study is more interested in the way that Rāzī rejects Ibn Sīnā's emanation ontology - which gives ontological priority to the formal and intelligible (and therefore God) - in favour of an ontology in which all existents are equal in their 'thereness', whether material or non-material. A corollary may be that underlying the existence-essence dispute are two contrasting pictures of existence: existence as actualisation (in which it makes sense to identify God with God's existence as the fullness of actualised being) and existence as 'thereness' (in which it doesn't, but it does make sense to say that if God is necessary, then God must be there). For Rāzī on existence as 'being in the world' rather than a property see Benevich 2017: 224.

¹⁷⁸ Thus, the fact that he rejects bodily form theory does not necessarily mean that he rejects all aspects of hylomorphism.

prove.¹⁷⁹ Such things just need to be accepted ‘as a posit’ (*waḍʿan*) and await their proof in the *Ilāhiyyāt*. Among these principles are the four causes identified and itemised by Aristotle: the material, the formal, the agent (efficient) and the final cause.¹⁸⁰

At the beginning of Book VI of the *Ilāhiyyāt*, Ibn Sīnā makes a number of important moves that align these four mundane causes with the metaphysical narrative just sketched.¹⁸¹ The *form* constitutes a substance as what it is in actuality (a wooden *bed*), while *matter* constitutes it as what it is in potentiality (the *wood* that can become a bed).¹⁸² Form belongs with actuality and is logically (and ontologically) prior to matter, which, as we saw, belongs with possibility. Change and generation in the universe are a flow from what is already actual towards the actualisation of that which is initially in potential.¹⁸³

So far, so Aristotelian. However, Ibn Sīnā separates ‘agent’ and ‘purpose’ causes from any subjects or qualities that they bring into being. That the agent is separate from the object on which it acts is not surprising. But to separate purpose from form is distinctly un-Aristotelian. Aristotle’s account of the biological realm relies on the notion that purposiveness is built into nature through the universal forms of the natural kinds. Animals eat, breathe and reproduce so that their forms may be eternally preserved. The purposiveness intrinsic to the form of the daddy mollusc is the same as the purposiveness intrinsic to the form of the baby mollusc because the form is the same. Ibn Sīnā is rejecting the pragmatic Aristotelian idea of a cosmic Nature which includes purposes embedded in

¹⁷⁹ Ibn Sīnā, *Physics* I, 1, §2, 4.

¹⁸⁰ Treated as postulates in Ibn Sīnā, *Physics* I, I, §§9-15, 61-106. Examined for ontological status in *Metaphysics* IV, 124-147, VI, 194-235, VIII, 1-5, 257-283

¹⁸¹ Ibn Sīnā, *Metaphysics*, VI, 1, §§1-17, 194-200.

¹⁸² Ibn Sīnā, *Metaphysics*, VI, 1, §2, 195-196.

¹⁸³ For this flow of existence as actualisation between form and matter see Bertolacci 2002: 133, 152.

specific natures.¹⁸⁴ His account of purposiveness is closer to the Stoics and Platonists. There can be no purpose without an intentional purposer.¹⁸⁵

His discussion of ‘nature’ (*phusis*) in the *Ṭabī‘īyyāt* is revealing.¹⁸⁶ He prefers a minimalistic interpretation of a *ṭabī‘a* as a particular set of powers (*qiwā*) or potentials.¹⁸⁷ These are the principles of motion and change proper to different species of body, like the power to heat in fire and its power to move upwards to its proper place. He accepts the Aristotelian use of ‘nature’ as co-extensive with ‘form’ (*eidōs/ṣūra*) in the case of such simple entities, but insists that they refer to two different aspects of them.¹⁸⁸ The *ṣūra* ‘constitutes’ this entity as what it is. It is a ‘power (*quwwa*) that makes the water’s matter (*hayūlā*) subsist as the species “water”’. The *ṭabī‘a* is the aspect that relates to the ‘motions and actions that proceed from it’, its effects (*āthār*) in the observable world, like coolness and weight.

However, the agency of such natures or collections of powers in material objects is different from intentional agency. Fire will only heat water when brought close to it. Earth will only move downwards when forcibly removed from its natural place. Left to themselves, natural objects remain inert. Once again, the ultimate sources of motion and change in the celestial and sublunary worlds are due to the actions of intentional, choosing beings.

When we return to the *Ilāhiyyāt*, we find a further crucial distinction among agent causes. Alongside the distinction between natural and intentional agency in the physical

¹⁸⁴ See Lammer 2020: 279 (particular natures). Though Ibn Sīnā does seem to allow a conceptual place for a *notional* purposive nature, (analogous to the *notional* genera and species) that is not actually found in the external world. Ibn Sīnā, *Physics*, I, 7, §§2-3, 51-52.

¹⁸⁵ For this Platonising trend in late antiquity, see Wilks 2014: 83-90.

¹⁸⁶ For further analysis see Lammer 2021: 300 ff.

¹⁸⁷ Ibn Sīnā, *Physics*, I, 5, §§5-7, 37-43. He is discussing remarks from Aristotle *Physics* B, 1 192b20-193a3. Complex forms (like the physical soul) will exhibit a bundle of powers but are not co-extensive with these.

¹⁸⁸ Ibn Sīnā, *Physics*, I, 6, §2, 45.

world, we find a distinction between physical and metaphysical agency. The natural philosopher considers natural agents as sources of motion or change, while the metaphysical philosopher considers the ‘principle of *existence*, and what provides it’.¹⁸⁹

A natural efficient cause only produces ‘existence’ in a secondary sense insofar as it produces a motion or qualitative change in the accidents (non-essential properties) of a pre-existing subject. They contribute to the process of ‘predisposition’ (*isti’dād*), the temporal sequence of changes at the end of which the accidental properties of matter become ‘predisposed’ to receive a new substance-form. Water is heated to boiling point before becoming ‘air’. The mixture balances the qualities of the ingredients before becoming a new medicine. The act of existentiatio proper takes place as the ingredients receive their higher form and a new substance comes into being. It takes place in the present moment and is dependent on the agent intellect at the end of the chain of higher-order purposing agents, which receive their successive actualisations from the One.

Ibn Sīnā, as we saw, shares with al-Ash‘arī the principle that causes are simultaneous with their effects. These may be processes of change and motion over time, or the actualisation of a new substance in an instant. But without the continuing presence and action of the cause, no effect can be sustained. This contrasts with the position of some Mu‘tazilīs that it is only origination that needs explanation, not existence.¹⁹⁰

Ibn Sīnā considers the counter-examples. Sons continue to exist when their fathers have died. Buildings remain standing when the builder has driven off home. Water remains hot when removed from the fire. His response highlights the distinction between natural agents of change and metaphysical agents of existentiatio.¹⁹¹ The identified

¹⁸⁹ This follows Aristotle’s distinction between the matter of the *Physics* (change) and the matter of *Metaphysics* (being qua being), but with the subtle shift we have noted from being as actualisation to being as existence.

¹⁹⁰ Ibn Sīnā, *Metaphysics*, VI, 1, §§11-15, 198-200.

¹⁹¹ Ibn Sīnā, *Metaphysics*, VI, 2, §§1-5, 201-202.

agents are only really in charge of motions or change, and here, simultaneity does hold. The father is indeed transferring the sperm to the womb during the act of sex, and when that act ceases so does the transferring. The bricks and mortar move just as long as the builder builds. The water grows hotter just as long as it is on the fire. But the father is not the agent who makes the sperm and its subsequent transformations actual. Nor does the builder make the bricks exist, with the properties that ensure the house will stand.

Thus, simultaneity holds for existentiatio as well. Things that physical science identifies as agents (fire, fathers, builders) turn out to be auxiliary causes from the point of view of metaphysics. They play their part in the processes of generation and decay, along with the solidity of the bricks and wood, but the agents of existentiatio are beyond the sublunary world. This result, that sublunary intentional agents are both real agents *and* auxiliary causes at the service of the existentiating intellects, reveals a crucial analogy with Ḍirār's double account of human action (creation by God, acquisition by the human) modified by al-Ash'arī. This is the stepping stone between al-Ash'arī's occasionalist universe and a universe of secondary causes.¹⁹²

The principle of simultaneity also allows for an eternal universe without undermining causal explanation. The auxiliary causes, preceding their enduring effects, arise and disappear in the temporal sequence of the natural order. But what counts in a causal explanation is simultaneity, not temporal priority. So, whether the temporal sequence is finite or infinite is irrelevant.¹⁹³ An event or a new existence is fully explained by the particular, finite causal nexus of preceding causes, auxiliary causes and true agent causes that obtains at a given moment.¹⁹⁴ In Ibn Sīnā's universe, once such a causal nexus is

¹⁹² See §2.1.1 above.

¹⁹³ If the sequence a because of b because of c... is infinite, then we have no explanation of a. See Aristotle, *Physics* Θ 5, 256a13-21.

¹⁹⁴ Ibn Sīnā, *Metaphysics*, VI, 2, §§6-8, 202-203.

fully present, the effect necessarily occurs. There is none of Aristotle's 'for the most part' in Ibn Sīnā's natural world, though occasionally a nexus may turn out to be incomplete and therefore insufficient for the usual effect.

By rooting all existention and actualisation in the intentional action of intellects, Ibn Sīnā is able to argue that purpose is *the* ultimate cause (the cause of causes), even as he rejects the idea of a purposiveness embedded in material Nature.¹⁹⁵ Things that do not yet exist cannot be a cause of themselves. However, such a non-existent object of purpose (*ghāya* or *gharaḍ*) can have ontological status as a 'thing', as an intentional object (*ma'nā*) in an intelligent mind.¹⁹⁶ The intelligent agent then initiates the action that brings about the existence in the physical world of the intended thing. All other causes are actualised for the sake of that purpose:

Thus, the final cause in its "thingness" is a cause for the rest of the causes to exist in actuality as causes while, in its *existence*, the final cause is caused by the existence of the other causes in actuality.

The final cause does indeed have a special rôle in the universe as the cause that makes all the other causes causes, and as the origin of all movement towards a goal.

We correctly see the natural kinds, whether reproducing animals or basic elements, acting in order to conserve their species for eternity.¹⁹⁷ That purpose is continually present in the mind of the agent intellect in charge of the sublunary world, and can be appreciated by other intelligent agents like ourselves. At a higher level, the eternal cycling movements of the planets and the stars will turn out to be the result of a continually

¹⁹⁵ Ibn Sīnā, *Metaphysics*, VI, 5, §28, 228.

¹⁹⁶ Ibn Sīnā, lays the foundation for this argument in *Metaphysics*, I, 5, §§ 1-21, 22-27. Though his *shay'* may owe a remote debt to the *ti* of the Stoic categories, Wisnovsky argues that it derives directly from his engagement with Mu'tazilī thinkers. Wisnovsky 2003: 146-160.

¹⁹⁷ Ibn Sīnā, *Metaphysics*, IX, 3, §15, 323.

renewed purpose in the souls that move them, as they strive to imitate the beings above them. All of this belongs within a Plotinian salvation narrative. All movement, change and transformation in the universe is ultimately driven by a cosmic desire in all things for completeness. That completeness is found in imitating the One who is perfect and whole, the final end of all that is, but which needs no end or purpose in itself precisely because it is itself complete.¹⁹⁸

2.2.2 Ibn Sīnā and *kalām*

Ibn Sīnā's physical universe is governed by a complex of secondary causes, intentional and natural, some bringing existence, some bringing movement. Al-Ash'arī's only has one genuine cause that simply brings existence. Nevertheless, structurally they are not so far apart. The existence of forms in the biological realm is dependent on continuous supernatural action. So indeed are the universal concepts in human minds. Everything that happens is according to the will of a God who is free of the limitations of purpose, but who is yet properly described as good and as willing the world that emerges from Godself.¹⁹⁹ Even al-Ash'arī's criticism of 'nature' as a useless explanatory term in comparison with *qudra* (power/capacity) has a parallel in Ibn Sīnā's account of nature as *quwwa*, an active potential for phenomenal effects, generated from a hidden essence. We have noted the significant parallel between the continuous, present flow of actualisation as existentiation in Ibn Sīnā and the continual discrete existentiation of atoms and predication events in al-Ash'arī.

¹⁹⁸ Ibn Sīnā, *Metaphysics*, IV, 3, §§8-11, 145-146.

¹⁹⁹ Even though the atemporal, emanation of the universe from the One, and the worldly flow of change in time is all necessary, Ibn Sīnā glosses the eternal will of the One as a timeless assent, and contentment with what emerges. See Ibn Sīnā, *Metaphysics*, VIII, 7, §§2-3, 291-292 (intellectual knowledge of the universe emanating from him, and contentment with this), IX, 4, §3, 327, 'Hence, the First is satisfied with the emanation of the whole from him.'

The theological fears that necessity in the universe might prevent scriptural miraculous action of God seem unfounded. True, some of al-Ash‘arī’s suggested *adunata* run directly counter to the Avicennan script. But in the final book of the *Ilāhiyyāt* Ibn Sīnā makes the point that everything, including human volition, is ultimately caused by God and that none of us can ever know enough about the motions of the universe to know for sure what will happen next.²⁰⁰ He seems happy to include in his prophetology ‘therefore he will perform the miracles about which we have been informed’ and assume the efficacy of prayer: ‘it is by reason of these things [from Him begins the existence of all that comes to be] that benefits are gained through prayers and offerings’.²⁰¹ At this point the *Ilāhiyyāt* reads like an attempt to outdo *kalām* at its own game, by offering a superior, intellectually more rigorous justification for the faith, only using tools from a different philosophical tradition.

Wisnovsky suggests solid grounds for such a reading as he traces the influence of specific *kalām* discussions, Mu‘tazilī and Ash‘arī on Ibn Sīnā’s own thought. Wisnovsky considers Ibn Sīnā’s distinction between essence and existence, and proposes that Ibn Sīnā’s discussion of the ‘thing’ in *Ilāhiyyāt* 1.5 (crucial, as we saw, to his later account of purpose as the ‘cause of causes’) is best understood in the context of the running debate between Mu‘tazilī’s and Ash‘arī’s about the ontological status of essences before their existence.²⁰² The worlds of *falsafa* and *kalām* had already become inextricably intertwined as theological problems found a new range of philosophical articulations in the wake of the translation movement.²⁰³ That interaction is reflected in Ibn Sīnā’s mediating position that

²⁰⁰ Ibn Sīnā, *Metaphysics*, X, 1, §11-14, 362-364. That human (and celestial agent) choices are fully determined and a part of the causal nexuses evolving in time is a significant choice by Ibn Sīnā. Plotinus was not a determinist and Susan Bobzien points out that the third century commentator on Aristotle, Alexander, nudged the standard peripatetic interpretation towards underdetermination in the physical world and human free will. Bobzien 2016: 125-160.

²⁰¹ Ibn Sīnā, *Metaphysics*, X, 1, §10, 361; X, 2, §4, 365.

²⁰² Wisnovsky 2003: 153. See Benevich 2017 for the essence-existence dispute and Ibn Sīnā’s ‘middle way’.

²⁰³ Wisnovsky 2003: 150.

‘things’ are identifiably existent before they come into being (Mu‘tazilī) but not in the external world (Ash‘arī).²⁰⁴

Wisnovsky also suggests, as we saw above, that Ibn Sīnā’s proof of the necessary existent is the product of an evolving response to a problem for Ash‘arīs.²⁰⁵ Because they argued for the co-eternity of the attributes of God, the temporal *qidam/ḥudūth* distinction lost traction as the basis for a proof of the existence of God. He traces the steps from the hint of a solution in al-Baqillānī’s (d. 1013) contrast of *qidam bi-dhātihi/muḥdath bi-dhātihi* to Ibn Sīnā’s own early exposition of two ways of being eternal *qadīman bi-dhātihi/qadīman bi-ghayrihi*.²⁰⁶ He notes al-Baqillānī’s and al-Ḥalīmī’s (d. 1012) semantic shift of the interpretation of *qadīm* towards *wājib*, in the definition ‘that whose non-existence is impossible’.²⁰⁷ He offers examples, prior to Ibn Sīnā, where the shift is completed and God is referred to as *wājib al-wujūd*, the necessary of existence, including al-‘Amīrī’s (d.992) first recorded use of the whole phrase *wājib al-wujūd bi-dhātihi*. He dates Ibn Sīnā’s own first use of that phrase to c.1001. Thus, the development of the proof emerges from a long-running discussion across the different traditions.

It is no surprise then, that in spite of the very different universes, there are already *points d’appui* between Ibn Sīnā and the concerns of Ash‘arī *kalām*, that render them ripe for synthesis. Several of these will be taken up by Rāzī as he develops his own intellectual response from within the nexus of the traditions. But by the time he is writing, he is responding not just to Ibn Sīnā but to Ibn Sīnā’s commentators and critics, and in the

²⁰⁴ Ibn Sīnā has the luxury of a complex higher-order intelligible universe for such things to exist in. Non-actual things are not so easy to fit into a world that consists of atoms, accidents and God.

²⁰⁵ Also of course for theologically-minded philosophers who believe in the eternity of the world.

²⁰⁶ Wisnovsky 2003: 234-236. Though al-Mātūrīdī and Ibn Sīnā are concerned with the eternity of the world rather than the eternity of God’s attributes.

²⁰⁷ Wisnovsky 2003: 236-243.

context of a more polarised view of the relation between *kalām* and *falsafa*. The final part of this chapter will now explore something of that context.

§2.3 *Kalām* and *falsafa* after Ibn Sīnā

Before we start looking at the detail of Rāzī's own response to philosophy in general and to Ibn Sīnā in particular, we need to consider the reception of Ibn Sīnā and so get a sense of the intellectual milieu in which he was operating. This section will lean heavily on the pioneering work of Ayman Shihadeh, and his discussion of the relationship between Rāzī, Ibn Ghaylān, al-Mas'ūdī and Abū l-Barakāt al-Baghdādī (d. 1165). I will also note some key elements of Griffel's recent powerful contextualising analysis. Foremost is the figure who manages both to polarise the relation between *kalām* and *falsafa* and at the same time to legitimate specific areas of philosophical method and enquiry, Ghazālī.

§2.3.1 Ghazālī²⁰⁸

Ayman Shihadeh provides testimony to the impact of Ibn Sīnā's work on thinkers of the following centuries, from a positive-sounding, '(he) digested the entirety of wisdom and stuffed it in his books', to the exasperated, 'It has become rooted in the hearts of some people nowadays that truth is whatever he says'.²⁰⁹ Since some philosophical positions (e.g. the eternity of the world) ran counter to mainstream Sunnī theological commitments, this was problematic. In due course Ghazālī, a pupil of the Ash'arī scholar al-Juwaynī (d.1085), produced a systematic and intriguingly ambivalent response to Ibn Sīnā in particular and to Peripatetic *falsafa* in general.

²⁰⁸ Griffel explores Ghazālī's background and motivation from a multiplicity of angles, noting the ambiguities within his own writings and in his reception by later thinkers. He particularly highlights Ghazālī's rôle in turning the term *falsafa* into a critical label for a religious group defined by certain theological commitments (Griffel 2021: 78ff (Ghazālī's attack); 111 (immediate effects)ff; 175ff (effects of the *fatwa*); 373ff (Ghazālī on God's knowledge); 427-457 (interpreting Ghazālī).

²⁰⁹ Shihadeh 2005: 142. The first is 'Abd al-Laṭīf al-Baghdādī (philosopher), the second is Ibn Ghaylān al-Balkhī (Mutakallim and critic).

According to Jan Thiele, Juwaynī himself had already shown signs of at least an indirect engagement with *falsafa*, as he enhances the traditional *kalām* argument for the existence of God (based on temporal origination - *ḥudūth* - and pre-eternity - *qidam*) with something much closer to Ibn Sīnā's argument from necessity and possibility.²¹⁰ Otherwise he remains firmly in an Ash'arī universe of atoms, accidents and God.²¹¹ Ghazālī's engagement, however, is active and direct.

First he produces a digest of the principle tenets of peripatetic/Avicennan philosophy, the *Maqāṣid al-falāsifa*, based on Ibn Sīnā's *Daneshname-ye 'ala'i* (*Book of Knowledge*), written in Persian. Before he begins showing up the deceptions and errors of the philosophers, he tells us, he must first introduce his readers to their main teachings.²¹² Then, in the *Tahāfut al-Falāsifa* (the *Incoherence of the Philosophers*) he presents the attack on the dangerous errors of the philosophers that lead people away from true religion.

It is here that the ambiguity becomes apparent. There is indeed a splendid tirade against those who have been beguiled by reports of the opinions of the great names of the past into abandoning the practices of the faith.²¹³ There is a promise to refute the ancient philosophers and to show the shortcomings of their metaphysical doctrines, and to identify their teachings that are dangerous for the faith.²¹⁴ However, Ghazālī's target audience are intellectuals *manqués*, not philosophers. They rely on 'imitation' (or tradition, *taqlīd*), third

²¹⁰ Thiele 2018: 5. However, Wisnovsky has pointed out that the term *wājib al-wujūd* is also appropriated by Ibn Sīnā's Ash'arī contemporary, ar-Rāghib al-Iṣfahānī (Wisnovsky 2003: 241). Thiele recognises the possibility of an alternative *kalām* source for the shift, but argues that al-Juwaynī's language choices suggest rather the Avicennan influence.

²¹¹ Though again we see that he acknowledges an awareness of *falsafa* and the recognition of substantial analogies despite differing terminology: 'The heretics accept the segregation of atoms from all of the accidents. The atoms in their terminology are called 'prime matter' (*hayūlī*) and the accidents 'form' (*ṣūra*).' Al-Juwaynī, *Irshād*, 14. Perler and Rudolph suggest that the awareness is real, but the interest is limited. Perler and Rudolph 2000: 62.

²¹² Ghazālī, *Maqāṣid*, 10 (preface).

²¹³ Ghazālī, *Incoherence*, Religious Preface, §§2-6, 1-3.

²¹⁴ Ghazālī, *Incoherence*, Religious Preface, §7, 3.

party reports rather than genuine knowledge, and have been led away from Islam as a result. Ghazālī will show, that in spite of some real errors, actually ‘all significant figures past and present agree in believing in God and the last day’. His main polemical point is that their aberrant doctrines are based on belief and surmise rather than proof and certainty.²¹⁵ His task will be to show up the self-contradictions in Peripatetic positions as presented by al-Fārābī and Ibn Sīnā.

We can recognise in the method shades of Sextus. The point is not to prove whether a claim is true or false, but to show that the argument is fruitless. We should just get on with life – and the traditional practices of religion. For those who have been mesmerised by the power of the big names, but have not paid attention to the detail, once they see the incoherences, they will be free to see the world aright. This gives a significant epistemological turn to arguments about science, metaphysics and philosophical truth.

Ghazālī concedes that some areas of philosophy are reliable. There is nothing wrong with calling God a ‘substance’ rather than ‘the creator’, once you realise that philosophers do not mean by substance (independent property-bearing entities) what *kalām* writers mean by substance (space-occupying atoms).²¹⁶ He points out that to deny some aspects of philosophy in the name of religion is actually counter-productive.²¹⁷ The philosophical account of the eclipse has been robustly demonstrated and to deny it in the name of religion makes religion look foolish. Some philosophy is perfectly acceptable.

In the introduction to the *Maqāṣid* he actually classifies the acceptability of different areas of philosophy.²¹⁸ Mathematics and Geometry (including Astronomy) are solid

²¹⁵ Ghazālī, *Incoherence*, Religious Preface, §§9-11, 4-5.

²¹⁶ Ghazālī, *Incoherence*, Religious Preface, §§13-14, 5. In this and the next example he includes arguments interpreting the religious law (a) in favour of allowing (appropriate) extra-scriptural terminology about God and (b) to argue that the hadith cited against scientific accounts of the eclipse is unreliable.

²¹⁷ Ghazālī, *Incoherence*, Religious Preface, §§15-19, 5-6.

²¹⁸ Ghazālī, *Maqāṣid*, Introduction, 10-11.

sciences and uncontroversial. Most deviation is to be found in metaphysics (*al-Ilahiyyāt*) and correct accounts are rare. Logic mostly serves truth well and contains few errors. Different schools have different conventions and modes of presentation, but the ideas and the purposes are the same – to refine the process of deduction.²¹⁹ In natural philosophy on the other hand truth is mixed with falsehood, and its accuracy is suspect.

The sceptical cast of the *Tahāfut*, establishing self-contradiction in philosophical reasoning, rather than refuting a position, is most evident where Ghazālī questions philosophical proofs for doctrines he clearly accepts (e.g. the existence of God, the unicity of God, the knowledge of God). Even when he attacks genuine targets (philosophical accounts of creation, the nature of God, cosmology, necessity in nature and soul and the afterlife), it is not always clear how far his attacks are to be understood as proofs of a contrary position, or simply proofs of the *inadequacy* of the philosophers' proofs. Especially as some positions (the soul as non-material substance and the agency of celestial entities, for instance) seem to be held by Ghazālī himself in other contexts.²²⁰ In fact, only three *falsafa* positions end up labelled 'unbelief' (the eternity of the world, God's ignorance of particulars, and the denial of the resurrection of the dead).²²¹ Nine are considered heresy, or innovation (*bid'ā*), and eight are simply unjustified claims to certainty.²²²

The seventeenth discussion on necessity in nature and the possibility of miracles is directly relevant to our topic of secondary causality and we will consider the detail of its epistemological implications in Part II. But here we note that Ghazālī having insisted that any actual event could be otherwise and having recognised that this raises problems for

²¹⁹ According to Gutas, Ibn Sīnā himself had found it necessary to defend logic (*manṭiq*) against those suspicious of its alien roots by identifying it as a transcultural, universal discipline and re-labelling it 'instrument' (*āla*). Gutas 1988: 314-315.

²²⁰ See Shihadeh, 2015b: 113-141.

²²¹ Al-Ghazālī, *Incoherence*, Conclusion, 226-227.

²²² Perler and Rudolf 2000: 67.

normal human expectations, offers two solutions. One is a pure Ash‘arī position: God causes the appropriate cognitions when God alters God’s customary action. The other is an intermediate position that allows God to work through (hidden) secondary causes. There has been much discussion about which one Ghazālī thinks is true.

Marmura believes that the occasionalist position is, in the end, Ghazālī’s own, however, a number of other authors argue persuasively that, while taking care to give a positive presentation of the traditional Ash‘arī position, he is actually more interested in reconciling some form of secondary causal account with the theological principle of divine freedom.²²³

Alexander Treiger’s study of how Ghazālī classifies the sciences sheds light on his ambivalent relationship with philosophy and supports the non-occasionalist interpretation.²²⁴ In the *Maqāṣid* he presents the standard philosophical division of the sciences into practical and theoretical but in other writings he presents something rather different. The most striking contrast is in an early chapter of *Iḥyā’ ‘ulūm al-dīn*, where Ghazālī having quoted the Quranic obligations to pursue knowledge (even all the way from China), discusses the exact nature of the knowledge that has been enjoined on believers.²²⁵

²²³ Marmura believes that the testimony of Ghazālī’s subsequent work, the *Iqtīṣād al-I‘tiqād*, presenting the Ash‘arī position as positive doctrine is decisive, the appearance of compromise in the *Tahāfut* is simply for the sake of argument. See Marmura 2000: xxiii – xxv; others argue from the internal structure of chapter 17 that this is not the case, that he is genuinely interested in finding a middle way that allows for some form of secondary causality in the world: Goodman 1978: 83-120; Riker 1996: 315-323; Perler and Rudolph 2000: 73-105. R.M. Frank offers an alternative account of the position in the *Iqtīṣād*, suggesting that Ghazālī’s presentation of Ash‘arī orthodoxy actually preserves a constructive ambiguity throughout (‘a vein of artful ambivalence’). He adverts to a passage in the *Mizan* where Ghazālī himself acknowledges that a scholar can adhere to three systems, one for allegiance and disputations, one for teaching and one for personal commitment. R.M. Frank 1994: 46, 56, 70, 87, 96. Shihadeh, while criticising Frank, proposes (in the context of Ghazālī’s account of resurrection) that Ghazālī sees the task of his *kalām* work as persuasion of a particular audience to right belief, not precise scholarly argument. Shihadeh 2015b: 135-137.

²²⁴ Treiger 2011: 1-31.

²²⁵ Treiger 2011: 6-10. Ghazālī, *Iḥyā’*, I, 2, 21-32.

His main division is into religious and non-religious sciences. Of the latter arithmetic and medicine are praiseworthy, poetry and history permissible, while magic and talismans are blameworthy.²²⁶ Religious sciences are learned from the prophets, and have their roots in the Qur'ān, the Sunna, the consensus of the community and the tradition of the companions. But there is a further subdivision into the sciences of the world (governed by *fiqh*) which guide the community in right action in this life, and the sciences of the hereafter, which again are subdivided into a science of practice and a science of unveiling (*mukāshafa*). The topics in the latter, as Treiger summarises them, are God, Cosmology, Prophetology, Angelology and Religious Psychology, and Eschatology.

You may well ask (says Ghazālī himself) how philosophy and indeed *kalām* are supposed to fit into a scheme which on the face of it looks entirely limited to the interpretation of prescribed community texts. The answer is that they are already contained in them.²²⁷ The arguments needed for *kalām* are already present in the Qur'ān and Ḥadīth and where *kalām* oversteps this it moves into heresy (innovation, *bid'ā*). Philosophy is actually four different sciences, of which logic and metaphysics are both included within *kalām*.²²⁸ Mathematics (which presumably includes astronomy – charting the movements of the stars - though not cosmology – explaining their nature) counted as one of the praiseworthy non-religious sciences. Treiger observes that natural science is dismissed by Ghazālī as 'partly useless...and partly at odds with true religion and hence is ignorance, rather than science.'²²⁹

²²⁶ This evaluation is of interest, given Rāzī's evident fascination with astrology and talismanic lore.

²²⁷ Treiger 2011: 8-10.

²²⁸ Shihadeh points out that on close examination, Ghazālī's claim that the logics deployed in *kalām* and *falsafa* are equivalent looks decidedly fragile. Shihadeh 2005: 144. As a way of canonising an extremely useful, but 'alien' tool, it is however, rhetorically astute: *kalām* itself is a duty, whose principles and practice are already exemplified within revelation and tradition; *falsafa* logic is not an alien creed, dangerous to the faith, but does just what *kalām* does, using different words.

²²⁹ Treiger 2011: 9.

Ghazālī does indeed say those things about physics, however, he also says rather more than Treiger reports, and some of this is of immediate interest to us:²³⁰

And [physics] is partly the enquiry about the attributes of bodies and their properties and the manner of their transmutations and changes, and this is very like medicine, except that the doctor theorises about the human body, specifically as regards its being sick or healthy, whereas they [the natural philosophers] theorise about all bodies insofar as they are subject to change and motion. However, the doctor has some merit, in that there is a need for him, but as for their science of the natures of things, there is no need for them.

The canonisation of medicine as an acceptable branch of physics is interesting for two reasons. The first is that the practice of medicine requires some pragmatic sense of reliable rules of cause and effect, however that is theologised (the same point would apply to astronomy) and has to take an interest in the behaviour of other, non-human bodies beyond the medical context. The second is that, as we saw in chapter one, the writings of the medical tradition contain within them a strong streak of Barnes' 'sober scepticism' that is intrinsically at odds with the blithe claims to sure proof of the different philosophical schools. Sceptical moves in the tradition represented by Ghazālī's *Tahāfut* may be non-accidental.

Treiger points out that in this text Ghazālī significantly restricts *kalām* (and *a fortiori*, metaphysics and logic) to the bare defence of the faith, and the negative function of exposing error. When it comes to the positive knowledge of the 'science of unveiling', *kalām* gets in the way. The higher science is presented as a matter of revelation – of the pure vision of purified souls rather than something to do with the sort of reason

²³⁰ Ghazālī, *Ihyā' 'ulūm al-dīn*, I, 2, 31.

represented by *kalām* or *falsafa*, even though the topics of that science clearly fall within the scope of both, as defined by Ghazālī himself.

That restriction is however belied by a later classification in the *Iḥyā'* itself, in which the two aspects of the higher science, the science of practice and the science of unveiling, are identified as acquired (rational) knowledge (*'ulūm muktasaba*).²³¹ Treiger's analysis of a number of other classifications in other works of Ghazālī confirms that structurally his higher science closely patterns the structure of Ibn Sīnā's *Ilahiyyāt*, even though he labels it '*kalām*'.²³² Treiger concludes that Ghazālī uses the word '*kalām*' inconsistently, varying what he says about it according to his audience.²³³ This supports Shihadeh's observation that while *kalām* is deployed in its negative function in the *Tahāfut*, with the full rigour of *falsafa* logic, Ghazālī uses a softer, persuasive version, including widely agreed premises in the *Iqtisād*, with the therapeutic function of helping thoughtful people appropriate positive teaching.²³⁴ Ghazālī's use of logic in *kalām* is pragmatic. It is about salvation, not consistency.

Treiger goes on to examine the relevant debate between R. M. Frank and Ahmad Dallal over Ghazālī's central theological concern, the science of the unveiling. This, combined with the purification of the soul, leads to a vision of the eternal truths and the essence of God. Frank maintains that this is simply 'higher theology', Avicennan and demonstrative in nature. Dallal argues that this is a mistaken interpretation. The higher knowledge is not a matter of logic and reason but of revelation – specifically, the spiritual, mystical knowledge of the Sufis.²³⁵ Treiger accepts that higher theology is not simply

²³¹ Treiger 2011: 13; Ghazālī, *Iḥyā' 'ulūm al-dīn*, 892 ff. As opposed to necessary or inescapable knowledge (*ḍarūriyya*) – like the fact that someone cannot be in two places at once.

²³² Treiger 2011: 18-19.

²³³ Treiger 2011: 20.

²³⁴ Shihadeh 2005: 147-148.

²³⁵ Treiger 2011: 28-31. Frank 1994: 21-22; Dallal 2002: 778-779.

demonstrative knowledge, nevertheless it does not have to be non-rational. In fact, it has close affinities with Ibn Sīnā's theory of prophetic knowledge, whereby spiritual practices and purification come together with sound reasoning to produce insights which are by their nature the preserve of the few.

It is perhaps a modern tendency to assume there must be a gulf between contemplative, spiritual knowledge (more like seeing, beyond words) and mundane ratiocination (thinking one's way to the conclusion of an argument expressed in propositions). But Ibn Sīnā inherits the Platonic tradition, through Plotinus, in which reason and spirituality, thinking, intellectual 'seeing', truth and desire are inextricably entwined. His basic theory of knowledge already assumes interaction with higher powers, particularly in the case of insight (*ḥads*); in the *Ilāhiyyāt* he describes in detail the sort of asceticism that is necessary for the soul to be prepared to experience the understanding and knowledge that is its birthright.²³⁶ Ghazālī clearly re-presents many of these elements in his own work, and is clearly interested in a *reportable*, cognitive content acquired through the science of unveiling.²³⁷ The complex relation between spiritual and rational knowledge is broached by Rāzī in the *Maṭālib*, and we will return to it in due course.

So there is clear overlap between the *falsafa* of Ibn Sīnā and Ghazālī's own *kalām*, even with its touch of mysticism and its revelatory, esoteric knowledge. The rhetorically charged confrontation at the beginning of the *Tahāfut* now reads less as a programme to

²³⁶ Ibn Sīnā, *Metaphysics* IX, 7, 347-357. For the centrality of *ḥads* to Ibn Sīnā's epistemology of intellectual and spiritual progress, as the point of contact with the world of the intellect, see, Gutas 1988: 179-201, who identifies it with Aristotle's *eustochia*. 'Guessing-Correctly is a divine effluence, and an intellective contact taking place without any act of acquisition at all'. Gutas 1988: 187.

²³⁷ See Treiger 2011: 26 for Ghazālī's own list of examples of 'how to knock on the gates of cognition' from his *Arbaʿīn*.

extirpate an alien intellectual activity and more as a decoy to distract unwelcome attention from its selective, critical and politically delicate appropriation.²³⁸

Against this we have to set the fact that at the end of the *Tahāfut* he associates the label *falsafa* with three specific doctrines that count as ‘unbelief’ and are punishable by death: the pre-eternity of the world, God’s ignorance of particulars and the denial of bodily resurrection. Whether he is explicitly identifying Avicennan *falsafa* as a rival religious sect with its own creed (as Griffel suggests), or merely warning the otherwise philosophically-minded to avoid the rocks, the label thereafter became toxic and carried a certain jeopardy (evident from Rāzī’s self-defence in the *I’tiqādāt*).²³⁹ Philosophical enquiry in the broader sense, which includes the intellectual space for plural traditions and critique of Ibn Sīnā, thus acquires a new label, *ḥikma* (wisdom), the term preferred by Rāzī for referring to his philosophical works.²⁴⁰

§2.3.2 Abū l-Barakāt al-Baghdādī

Though for many attracted by *falsafa*, *falsafa* now meant whatever Ibn Sīnā said, Abū l-Barakāt al-Baghdādī (d. 1164/5) is a post-Avicennan philosopher in the Peripatetic tradition who, in his three-part *al-Kitāb al-mu‘tabar* (Griffel: ‘the carefully considered book’), takes a critical approach to Ibn Sīnā for philosophical, rather than theological reasons. According to Shihadeh, he is indeed the only such example in the 12th Century.²⁴¹ Because of his alternative take on a number of topics, his work plays an important transformative rôle in the interaction between *falsafa* and *kalām* in the course of the century. Griffel identifies

²³⁸ Treiger suggests in a footnote that the political context for Ghazālī’s defence of *kalām* in the earlier part of the *Iḥyā’*, limiting it to an apologetic or corrective rôle, may have been ‘the power struggle between the Seljūqs and the Ismā‘īlīs, and the challenge that the latter posed to Sunni orthodoxy’, one big issue being ‘innovation’. Treiger 2011: 9, fn. 24.

²³⁹ *I’tiqādāt* 91-92; for context see Griffel 2021: 285-287. Griffel has spelt out that the effects of Ghazālī’s decree on juridical practice were negligible, but that the power of the label was more palpable. Griffel 2021: 152-158.

²⁴⁰ For detail on this evolution see Griffel 2021: 77-107.

²⁴¹ See Shihadeh 2005: 150, 162.

him as the first major exponent of the ‘dialectic turn’ in the wake of Ghazālī’s *Tahāfut*.²⁴²

That is, under the influence of Ghazālī, he challenges dogmatic conclusions of the Peripatetics established by supposedly demonstrative arguments. Demonstrative arguments give way to arrays of arguments for and against specific positions in the search for the most plausible solution.

Abū l-Barakāt is a regular reference point for Rāzī, who will often chase hares started by him, though not always in the same direction and who also works ‘dialectically’, working systematically through arrays of disjunctive arguments in the search for the most compelling.²⁴³ A brief look at Abū l-Barakāt’s treatment of void, motion and time, will indicate not only the alternative conceptual spaces on offer within the tradition of *falsafa* but will also illustrate that being a respectful member of a philosophical tradition does not mean defending the ideas and arguments of a master at all costs.

Abū l-Barakāt accepts the Peripatetic doctrine that objects have their natural place towards which they naturally move, and has very similar discussions to Ibn Sīnā’s on the question of forced motion.²⁴⁴ Like Ibn Sīnā he favours the impetus (*mayl*) explanation for the continuing flight of the stone and the arrow.²⁴⁵ However, there are two points of

²⁴² Griffel 2021: 483ff. Griffel 2011: 71-75. In Aristotelian logic a demonstrative argument proceeds from objectively certain premisses to certain conclusions, while a dialectical argument is dependent on merely mutually *agreed* premisses and is therefore subject to revision.

²⁴³ Though one should be cautious about over-emphasising the methodological contrast between Ibn Sīnā and, say Rāzī. Ibn Sīnā is perfectly capable of nuance in his argumentation. The ‘dialectical turn’ is as much about rejecting the dogmatic *reception* of Ibn Sīnā’s arguments as about whether Ibn Sīnā himself considered their status demonstrative or merely persuasive.

²⁴⁴ Abu l-Barakāt al-Baghdādī, *Mu‘tabar* II (Physics), 106 ff (natural place), 112 ff (forced motion).

²⁴⁵ Aristotle’s cautious attempt to account for the continuous motion of an arrow by *antiperistasis*, the air circulating from the tip and thrusting it from behind (Aristotle, *Physics* Δ, 215a 14-16, Θ 267a, 12-20) is challenged by Philoponus, *On the Physics*, 137-140) with an extension of the idea of *rhopē* (the intrinsic inclination of matter to move to its proper place) to include a sort of temporary impetus, or inner motive force, welcomed as *mayl* in Ibn Sīnā (*Physics* IV, 14, 504-512), who assumes the *i‘timād* of the Mu‘tazilis is the same idea (Sabra 2006: 213).

divergence that indicate a pluralism in post-Avicennan philosophical thinking that opens new possibilities for convergence with *kalām* physics.

The first is the void, accepted in *kalām* and rejected in standard *falsafa*. Ibn Sīnā follows Aristotle and argues against the possibility of the void.²⁴⁶ His argument is elaborate, but two reasons he gives are of particular note. One is that if there were a void, then there would be no ‘natural place’ and therefore no explanation of the natural movement of the elements.²⁴⁷ A second significant reason is that, if there were a void, then there would be nothing to brake moving objects, and their movement would go on forever.²⁴⁸

In contrast, Abū l-Barakāt presents a more positive view of the void. It actually helps explain how motion is possible, for instance.²⁴⁹ He is less worried than Ibn Sīnā about the homogeneity of the void disrupting natural movement of the elements, because whereas the latter ties the natural movement to a quality of place (as a region in the cosmos), Abū l-Barakāt, has already tied the movement of heavy things not to the region occupied by earth, but to its substance.²⁵⁰ Heavy things are attracted to earth, not to the place earth occupies.²⁵¹ His void is a notional entity. He seems to leave the question open whether the void can ever actually be empty, but believes that it can be conceived – even if not observed – with the same assurance as prime matter.²⁵² As to the Newtonian implication that a moving body would, in the void, move forever, he simply accepts this.²⁵³

²⁴⁶ Ibn Sīnā, *Physics* II, 8, 177-200. For a full account see Lammer 2020: 367-427.

²⁴⁷ Ibn Sīnā, *Physics* II, 8, §§ 9-10, 186-189.

²⁴⁸ Ibn Sīnā, *Physics* II, 8, § 18, 195.

²⁴⁹ Abū l-Barakāt al-Baghdādī, *Mu‘tabar*, II, 44-69. We can again possibly recognize here the influence of the dissenting voice of John Philoponus, see Philoponus, *Commentary on Physics* IV, 4, 211b 19-25; IV, 4, 8, 215a24-216a21.

²⁵⁰ Ibn Sīnā, *Physics* IV, 11, §§ 7-9, 481-483, 12, §§ 1-6, 485-494.

²⁵¹ Abū l-Barakāt al-Baghdādī, *Mu‘tabar*, II, 42.

²⁵² Abū l-Barakāt al-Baghdādī, *Mu‘tabar*, II, 68-69.

²⁵³ See Pavlov2017: 44.

Ibn Sīnā accepted and clarified Aristotle’s definition of time as ‘the number of motion with respect to before and after.’²⁵⁴ Time is real, but dependent on the movement of material objects. It is able to measure movement without circularity, because we can establish a ‘before and after’ in the spatial movement of objects. It follows that where there is no movement of objects, there is no time. The other element in Aristotelian time, the ‘now’, is a moving, extensionless joint or border between past and future time. Ibn Sīnā explicates this as a product of the estimative faculty (*wahm*). It has no actual existence – if it did, it would interrupt the continuity of real time as a sequence of before and afters.²⁵⁵

Abū l-Barakāt, according to Moshe Pavlov, accepts that time exists, but breaks the link between time and motion – time would exist, even if motion did not. Time is measured by *existence*, not by movement.²⁵⁶ Abū l-Barakāt’s choice seems to be driven by the problem of uneven ratios of force, motion and speed. If Andrew throws a 2 lb shot ten yards, that does not guarantee that he will throw a 4 lb shot five yards. If a team of ten men pushes a boat up the beach at 1 ft per second, it does not guarantee that a team of five men will be able to push it at 6 in per second – in fact they may not be able to move it at all. Because we cannot match theoretical proportions with reality, natural movements and their relative speeds can tell us nothing about an everlasting thing called time.²⁵⁷

There is also a subtle difference in his treatment of ‘now’ which takes us closer to a *kalām* view, even though it builds on Ibn Sīnā’s subjective language.²⁵⁸ Rather than speak of a ‘now’ (Ibn Sīnā’s *al-ān*, Aristotle’s *to nun*) he talks of ‘present’ (*ḥāḍir*).²⁵⁹

²⁵⁴ Aristotle, *Physics*, IV, 11, 219b1-2; Ibn Sīnā, *Physics* II, 11, 229-236.

²⁵⁵ Ibn Sīnā, *Physics* II, 12 §§ 1-2, 237-239.

²⁵⁶ Pavlov 2017. 30, 152-153. See Abū l-Barakāt al-Baghdādī, *Mu‘tabar*, II, 71-72.

²⁵⁷ Abū l-Barakāt al-Baghdādī, *Mu‘tabar*, II, 117-119.

²⁵⁸ According to Ibn Fūrak, al-Ash‘arī defines time as a timepoint or occasion (*waqt*) identified with respect to the (actual) events that mark it. See *Mujarrad*, 276.

²⁵⁹ Abū l-Barakāt al-Baghdādī, *Mu‘tabar*, II, 70.

And in fact there is no ‘present’ in time, even though existence divides it into past and future. But the present is in minds and imaginations, and it is the portion of time in which the observer observes, or the speaker speaks, or the hearer hears.

We shall see this sort of infinitesimal, grainy, perception-related account of time recurring in Rāzī’s discussions in the *Muḥaṣṣal* and *Maṭālib*, and even though Rāzī will reject aspects of Abū l-Barakāt’s account, the insight that time is fundamentally connected to *existence* will be preserved.

This gives us, then, two models for reacting to Ibn Sīnā, the critical, sceptical model of Ghazālī in defence of theological non-negotiables, or the critical peripatetic model of Abū l-Barakāt al-Baghdādī, in the spirit of Philoponus (and indeed of Ibn Sīnā himself), that is prepared to notice the flaws in existing accounts of reality in order to search for something better.

§2.3.3 Al-Mas‘ūdī , Ibn Ghaylān and Rāzī.

Shihadeh observes that, in the century after Ghazālī, many thinkers were actually emboldened by his writing to explore *falsafa*. After all, provided you did not deny the temporal creation of the world, God’s knowledge of particulars or the resurrection of the body, you were safe from being charged with unbelief.²⁶⁰ However, Shihadeh draws attention to Ibn Ghaylān al-Balkhī (d.1194) and Sharaf al-Dīn al-Mas‘ūdī (d.1194), as examples of *kalām* writers who were concerned by this trend and explored *falsafa* in order to dissuade people from accepting Ibn Sīnā’s writings as dogma, deploying the negative

²⁶⁰ Shihadeh 2005: 149-150.

version of *kalām* exemplified in the *Tahāfut*.²⁶¹ He points out the influence of Abū l-Barakāt al-Baghādāī's critique on al-Mas'ūdī's criticism in particular.²⁶²

Rāzī engaged with all three writers and his own more positive and creative approach to the *kalām-falsafa* question can be understood, Shihadeh suggests, as a reaction against the Ghazālī-influenced, negative *kalām* of al-Mas'ūdī and Ibn Ghaylān. His critical response to the adversarial critics of Ibn Sīnā, Shihadeh suggests, is due to a recognition that where 'the same people were interested in both *falsafa* and orthodox theology, what was most needed was an Islamic *falsafa*, not variations of anti-*falsafī* dialectical *kalām*.²⁶³

In a separate article, Shihadeh presents a crude but effective example of such anti-*falsafī* dialectic in Ibn Ghaylān's attack on Ibn Sīnā's *Canon of Medicine*.²⁶⁴ The strategy is polemical. Medicine is one of the branches of science that Ghazālī has sanctioned as meritorious, so here Ibn Sīnā is religiously beyond reproach. Show, therefore, that Ibn Sīnā is unreliable where his science is licit, and you have given all the more reason for treating him with suspicion in other, more contentious areas. Ibn Ghaylān, accordingly, points up discrepancies in the way Ibn Sīnā assigns natures to specific simple drugs, where these are catalogued under more than one heading – as well as finding examples of how his uncritical admirers accept these errors without question. He finds twenty-seven such cases and concludes that this should silence those who 'believe that [Avicenna] is immune from error and cannot conceivably go wrong.'²⁶⁵ He has effectively discredited the witness and given a persuasive reason that *nothing* that he says should be taken on trust.

²⁶¹ Griffel refers to this way of working with philosophical tools to challenge key Avicennan ideas as 'Ghazalianism'. Griffel 2021: 226. For his rounded account of al-Mas'ūdī and Ibn al-Ghaylān and the context of Rāzī's unfavourable report of them, see Griffel 2021: 225-238; 292-296 (context for Rāzī's account of his debates with the pair); 457-471 (al-Mas'ūdī on Ibn Sīnā)

²⁶² Shihadeh 2005: 149-156.

²⁶³ Shihadeh 2005: 156.

²⁶⁴ Shihadeh 2013a: 135-174.

²⁶⁵ Shihadeh, 2013a: 154.

Shihadeh also reports Ibn Ghaylān’s ringing endorsement of al-Mas‘ūdī as one who, alongside Ghazālī, was firm in his grasp of *kalām* and *falsafa*, and used this grounding to refute the errors of philosophers.²⁶⁶ However, despite that approval, it is less clear that al-Mas‘ūdī is simply out to discredit Ibn Sīnā. Shihadeh has again provided a text and a detailed account of al-Mas‘ūdī’s critical commentary on elements of Ibn Sīnā’s *Ishārāt*.²⁶⁷ It is of interest to note the doctrines with which al-Mas‘ūdī chooses to take issue and consider the underlying purpose of his criticism as well as Rāzī’s eventual response to al-Mas‘ūdī’s text.

Shihadeh catalogues and summarises the topics identified by al-Mas‘ūdī as problematic, and his response to Ibn Sīnā’s positions.²⁶⁸ Eight of the fifteen topics have clear overlap with topics in the *Tahāfut*, including the issues of the pre-eternity of the world, the proof of the necessary existent, the knowledge of God, the separable nature and immortality of the human soul, the oneness of God, the action of the celestial spheres and the knowledge of God. Others fall more in the realm of physics: the nature of body and its relation to soul, theory of perception, the principle of the co-existence of cause and effect, and the Plotinian cosmological principle that the One can only generate one.

Shihadeh notes several things of interest to us. (1) al-Mas‘ūdī is indebted to Abū l-Barakāt al-Baghdādī for alternative accounts to Ibn Sīnā’s of prime matter and perception.²⁶⁹ (2) He invokes Ghazālī on the topic of the pre-eternity of matter, enthuses over his contribution to the topic of God’s knowledge, and recommends his reader to the *Tahāfut*.²⁷⁰ (3) Al-Mas‘ūdī’s discussion takes place within a *falsafa* frame of reference – the

²⁶⁶ Shihadeh 2005: 154.

²⁶⁷ “The investigations and doubts concerning the *Ishārāt*” (*al-Mabāḥith wa-l-Shukūk ‘alā l-Ishārāt*). See Shihadeh 2015a.

²⁶⁸ Shihadeh 2015a: 54-78.

²⁶⁹ Shihadeh 2015a: 60, 64-65, 80.

²⁷⁰ Shihadeh, 2015a: 73, 78.

language is Avicennan, and it seems that in spite of the critique of bodily form theory al-Mas‘ūdī endorses hylomorphism and the theory of continuous (as opposed to atomic) matter that goes with it.²⁷¹ (4) His discussion affirms recognisable theological distinctives: the eternal existence of God’s attributes, the creation of the world, the need for a cause of coming to be (*ḥudūth*) rather than the need for a cause of existence.²⁷²

Shihadeh asks the important question, does [his] agenda have more in common with Ghazālī’s critical theology, or with Abū l-Barakāt’s critical philosophy? He concludes that, in spite of the similarity in theological objectives, Mas‘ūdī’s *Shukūk* are a different animal from the *Tahāfut*. He is not making a direct attack on *falsafa*, instead, he is using an established philosophical genre and working within the language and conceptuality of philosophy for philosophical and theological goals. He is motivated by a basic conviction that philosophy need not clash with the teachings of revelation. He achieves his goal by critiquing aspects of Avicennan philosophy and proposing alternative philosophical theories and arguments.²⁷³

How then, does Rāzī, brought up with Ash‘arī *kalam*, respond to al-Mas‘ūdī and Ibn Ghaylān, and what might this tell us about his own project? Shihadeh sketches the robust exchanges recorded by Rāzī himself in his account of a philosophical journey into Transoxania.²⁷⁴ By his own account Rāzī wrong-foots both scholars. Ibn Ghaylān’s arguments against Ibn Sīnā are inadequate precisely because they are *just* arguments against Ibn Sīnā. Al-Mas‘ūdī is reduced to apoplexy and incoherence at a challenge to his favoured science of Astrology, and to the observation that one of Ghazālī’s arguments against Ibn Sīnā deploys an unsupported premise, and is therefore useless. Shihadeh

²⁷¹ Shihadeh 2015a: 79.

²⁷² Shihadeh 2015a: 71, 72, 83.

²⁷³ Shihadeh 2015a: 85.

²⁷⁴ See Shihadeh 2005: 157-161; 2015: 31 ff; 2013a: 145 ff. The Rāzī text is the *Munāẓarāt* – an account of his Transoxanian debates.

observes that Rāzī's criticism of al-Mas'ūdī and Ibn Ghaylān is precisely that they argue like Ghazālī, negatively, *ad hominem* (dialectically), emotionally and partially, rather than engaging in a dispassionate search for truth.²⁷⁵

Elsewhere, Shihadeh presents Rāzī's own early written response to al-Mas'ūdī's critique of Ibn Sīnā's theory of bodily form.²⁷⁶ Without going into too much detail at this point, we want to observe Rāzī's approach and appreciate what he thinks he is doing better than his adversary.

Ibn Sīnā's theory of bodily form, we saw, is bound up with his grand metaphysical narrative about potentiality and actuality. However, it is also defended with arguments about place and dimension, as well as by arguments based on continuity and divisibility or discontinuity. Since continuity is a defining characteristic of body as actualised *form* and is incompatible with discontinuity, there must be some substrate receptive to the opposites, continuity and discontinuity, even if it never has an independent existence. This is the notional prime matter.

Abū l-Barakat al-Baghdādī challenges that notional prime matter, the recipient of the equally notional bodily form, partly on empirical grounds – it is unobservable.²⁷⁷ But he also argues that discontinuity only affects the *accidents* of matter, either magnitude or the relative continuity of parts.²⁷⁸ A single continuous actual body could therefore provide the substantial substrate for both contraries. It is unnecessary to hypothesise the two notional entities. Al-Mas'ūdī's comment in his *Shukūk* picks out the accident of magnitude as the locus for discontinuity, and draws a similar conclusion.

²⁷⁵ See Shihadeh 2005: 160.

²⁷⁶ The *Jawabāt*. See Shihadeh 2014a: 364-396.

²⁷⁷ Shihadeh 2014a: 369-370.

²⁷⁸ Shihadeh 2014a: 378-381.

Rāzī recognises the influence of Abū l-Barakāt on al-Mas‘ūdī’s argument. He is able to place the arguments for and against in the context of a wider debate about the nature of matter. He then proposes an original argument based on the idea of a particular, *determinate* bodily form (as opposed to a universal bodily form).²⁷⁹ This he believes offers an effective Avicennan response. A *determinate*, individual body has determinate accidents and when those are lost, it is no longer that determinate, individual body. So, we do after all need a notional substrate for the determinate individual bodies that come after it. Although the proof is his own, he is able to justify it as in the spirit of Ibn Sīnā by reference to other things that Ibn Sīnā has said.²⁸⁰ He will then go on to provide a critique of the alternative account of matter of Abū l-Barakāt and al-Mas‘ūdī. In the end, however, he identifies a fundamental problem with the very solution he has himself proposed.

Eventually he will opt for an atomistic account closer to Abū l-Barakāt’s proposal.²⁸¹ But the process reveals his almost perverse thoroughness in providing the best possible case for the opponent, before beginning a critique, and proposing alternatives. This, he believes, distinguishes him from the likes of al-Mas‘ūdī.²⁸² Shihadeh draws attention to this programme in the introduction to the *Nihāyat al-‘uqūl*.²⁸³ Rāzī there suggests that he may occasionally even give his opponents better arguments than they can come up with themselves. His objective, says Shihadeh ‘is simply to arrive at knowledge soundly through systematic, critical and, in principle, unbiased enquiry.’

In the case of the *Nihāya* this thoroughgoing enterprise is indeed undertaken in the service of establishing the truths of the Sunnī creed against their opponents.²⁸⁴ Ibn

²⁷⁹ The form of Socrates, rather than the form of ‘human’. ‘Human’ has a nose. Socrates has that snub-nose.

²⁸⁰ Shihadeh 2014a: 384-387.

²⁸¹ Shihadeh 2014a: 381-384.

²⁸² Among ancient authors, the principle and the practice is exemplified in for instance Plato’s *Theaetetus*, or (in more dramatic form) his *Gorgias*.

²⁸³ *Nihāya* I, 99 (first point).

²⁸⁴ Shihadeh 2005: 164.

Ghaylān, al-Mas‘ūdī and Ghazālī would surely approve. However, with his exhaustive critical method, he will do so with demonstrative proofs (*barāhīn*) that lead to [genuine] knowledge (*al-‘ilm al-ḥaqīqī*) and complete certainty (*al-yaqīn*), not with the *ad hominem* – and therefore intrinsically fragile – arguments (*ilzām*) of dialectic, that merely refute and defeat a particular opponent.²⁸⁵ There is an implicit rebuke to those who, in the tradition of Ghazālī, take one author (whether Aristotle or Ibn Sīnā) as representative of a whole pluriform tradition, and claim to have overthrown that whole tradition by refuting that one person.²⁸⁶ It is instructive that an early section of the *Nihāya* takes the trouble to consider the doctrines of a range of non-Islamic thinkers and traditions.²⁸⁷

Shihadeh sees the *Nihāya* as the definitive moment at which Aristotelian logic supplants traditional *kalām* modes of reasoning.²⁸⁸ He goes on to weave a narrative of Rāzī’s intellectual and spiritual journey from that point, working out of his background in Ash‘arī *kalām* and his deep understanding of the content and methods of *falsafa*, to a first thoroughly Islamic philosophy.²⁸⁹

§2.4 Conclusion

In this chapter we have looked at the place of causality in the contrasting universes of al-Ash‘arī and Ibn Sīnā. We have noted indications of *kalām* engagement with the wider Hellenic tradition and signs of Ibn Sīnā’s own engagement with and response to *kalām*. We have also drawn attention to specific areas of overlap: in the basically hylomorphic relation of atoms and accidents, in the principle of simultaneous causality, and in the way that their very different accounts of human action and divine existentionation nevertheless share

²⁸⁵ *Nihāya* I, 99 (point 2).

²⁸⁶ Ghazālī, *Incoherence*, Introduction §12, 4; Ibn Ghaylān, as reported in the *Munāzarāt*, in Shihadeh 2005: 160.

²⁸⁷ *Nihāya* I, 466-555.

²⁸⁸ Shihadeh 2005: 169.

²⁸⁹ Shihadeh 2005: 178.

significant truth conditions, theological and physical. The materials are predisposed for Rāzī's eventual synthesis.

We have also explored the different patterns of reception of the Avicennan corpus in the following century, and seen how Rāzī programmatically rejects a model of *kalām* as partisan dialectic in favour of a dispassionate search for truth, using the critical tools of philosophy and *kalām* in the widest sense, under the label *ḥikma*. With this background, we can now turn to his first systematic attempt at a synthesis in *al-Mabāḥith al-Mashriqiyya*.

Chapter 3 Razi on Causes in the *Mabāḥith*

In this chapter I want to look at Rāzī's early, comprehensive attempt to engage creatively and critically with an Avicennan universe in *al-Mabāḥith al-Mashriqiyya*. This provides a context for discussing his epistemology and scepticism (in Part II) and a basis for identifying developments in his later physics and cosmology (in Part III).

In the last chapter, we saw something of his intellectual programme as set out in the ground-breaking *Nihāyat al-ʿuqūl*. He is committed to discussing arguments in their most compelling forms, and where this is absent, contriving himself 'as far as is possible, to give the argument that establishes that doctrine and formulates it precisely'.²⁹⁰ His introduction to the *Mabāḥith*, makes a similar declaration of intent, and boasts, that by this method he will produce something that betters everything that has gone before.

He describes how he will present detail from a range of earlier thinkers, along with the problems their doctrines raise and possible solutions to those problems.²⁹¹ But he also makes clear that at times he will legitimately depart from well-known doctrines. He will deal with long-standing issues that are 'like a chronic sickness', and add principles of his own obtained by the grace of God. These will include things that 'none of the ancients achieved, and none of the predecessors on this path could attain'.²⁹² The implication is that he is engaged in an enterprise that cannot be neatly pigeonholed as doing *kalām* or doing *falsafa*. He is engaging in a universal pursuit of understanding and making use of the best tools and materials at his disposal, wherever they may come from.

In particular, we will examine his response to the three most serious charges levelled by Ghazālī against Ibn Sīnā (the denial of God's knowledge of particulars, the denial of the creation of the world in time, and the denial of bodily resurrection) and the fourth,

²⁹⁰ *Nihāya* I, (Preface) 99.

²⁹¹ *Mabāḥith* I, (preface) 3, ff. For Griffel's detailed analysis of this introduction see Griffel 2021: 501-505.

²⁹² *Mabāḥith* I, (preface) 4-5.

related charge of the denial of God's free choice. It is on just these points that he will later defend the success of the *Mabāḥith* in providing an answer to the *falāsifa*, against later criticism.²⁹³

The organisation of the *Mabāḥith* is noticeably different from the *Shifā'* or Abū l-Barakāt al-Baghdādī's *Mu'tabar*, which loosely group the general topics (physics, psychology, meteorology etc) according to the different books of the Aristotelian canon, and often follow their internal order of specific topics (time, place etc.). Rāzī in contrast divides his work into three parts: 'General Matters' (*al-Umūr al-ʿāmmat*) (this section includes discussions on possibility, necessity and existence that relate to material from Ibn Sīnā's *Ilāhiyyāt*), 'Physics' (*Ṭabīʿiyyāt*) and 'Divinity' (*Ilāhiyyāt*).

The internal arrangement of the Physics then divides the topics into 'accidents' – grouping discussions under the headings of the Aristotelian categories (quantity, quality etc.) – and 'substances', further subdividing into bodily (terrestrial and celestial) and immaterial (souls and intellects) substances.²⁹⁴ Though there is no separate section on logic and epistemology, crucial themes in epistemology are picked up when treating of knowledge as an accident. Part of the reason for this complex structure, I will suggest, is to make visible the conceptual overlap (already noted by al-Juwaynī) between the form-matter language of the Peripatetics and the substance-accident language of *kalām*.

However, we will begin by looking at his discussion of some of the substructures of the universe, beginning with causality itself and the related concept of necessity along with the more physical concept of 'power', against the backdrop of a theory of continuous place,

²⁹³ *I'tiqādāt farq al-muslimīn wa l-mushrikīn*, 91-92. See Hutchings 1971: 58. Griffel points out that there is no mention of this intention in the *Mabāḥith* itself or any of the other philosophical works. He adds 'nor does it become clear from reading them' (Griffel 2021: 286). I respectfully disagree with his second claim. In each of the four areas he clearly attempts to argue for a position within a broadly Peripatetic frame that is maximally compatible with Ash'arī tenets.

²⁹⁴ In this section he does more closely track the Aristotelian general topics: biological bodies, meteorology, celestial bodies, souls.

motion and time. We shall see that while he embraces much of what Ibn Sīnā has to say, he rejects the Plotinian elements of Ibn Sīnā's scheme. That step is vital for bringing Peripatetic physics closer towards an Ash'arī understanding of divine knowledge and divine action. We shall then examine his response to the four questions, noting various degrees of compromise. Finally we shall evaluate how far he has adapted Ibn Sīnā's philosophy to suit Ash'arī goals.

§3.1 Substructures of the Universe

§3.1.1 Causality

Causality appears under a number of different headings throughout the *Mabāḥith*. It surfaces in the context of discussions of existence, necessity, possibility and essence in Book I, and receives a full, formal account in Book II. The all-important topic of God's causal relation to the world appears formally in Book III. However, important elements of the discussion, which often lay the ground for the theological account, are scattered throughout.

Overall, the account of world-causality and its relation to divine causality is broadly similar to Ibn Sīnā's, though with some important variations of detail. Rāzī too discusses the metaphysical basis for causality that will provide an argument for the existence of God. The grounding follows Ibn Sīnā in downgrading the older *kalām* polarity between eternity and origination (*qidam-ḥudūth*) in favour of the polarity between necessity and possibility (*wujūb-imbkān*), as discussed by Wisnovsky. It is not origination that establishes the logical need for a cause, but possibility.²⁹⁵ Significantly this frees Rāzī to consider the argument for a first cause of the world independently of the question of its creation in time.

²⁹⁵ *Mabāḥith* I, 124-125, 125-127, 134-135 (possibility, not origination is what logically needs a cause).

As for Ibn Sīnā, the boundary between logic and concept on one side and metaphysics on the other is very fine.²⁹⁶ Gutas has made the point that for Ibn Sīnā the dynamic relationship of necessity in the terms of an explanatory syllogism mirrors the necessary relations between the fundamental noetic realities.²⁹⁷ Rāzī approaches such ‘metalogical’ transition from concept to fundamental reality from the experience of knowing. Knowledge is a primary given concept, indeed *the* primary given concept.²⁹⁸ It requires no definition or proof and sits alongside other primary concepts that include existence, necessity, possibility and the law of the excluded middle. All of these together allow further valid, compelling *a priori* judgments to be made about the structure of reality.²⁹⁹

His argument divides entities into the ‘necessary of itself’ and the ‘necessary through another’.³⁰⁰ This last implies a ‘necessity of the fact’. A possible does not hover between the poles of existence and non-existence so much as between the poles of impossibility and necessity. Once a thing exists (by the law of the excluded middle) it cannot simultaneously not exist. Thus, every existent is necessary, either through another or of itself.³⁰¹ This lays the groundwork both for an Avicennan argument for a single, ultimate being who is ‘necessary of existence of itself’, and also for a universe whose causality is completely determined.³⁰²

²⁹⁶ I hereby introduce ‘metalogical’ as a term for this sort of argument.

²⁹⁷ Gutas 1988: 198, discussing the insightful grasp of the middle term: ‘the structure of reality is therefore syllogistic’.

²⁹⁸ *Mabāḥith* I, 332.

²⁹⁹ *Mabāḥith* I, 10-12, 127 (argument – with the Sages and against the sceptics – that knowledge of the possible needing a cause is primary) 344 (the law of bivalence).

³⁰⁰ A determinism discussed by Shihadeh apropos human choice. Shihadeh 2006: 31-34.

³⁰¹ *Mabāḥith* I, 131-132, 490 (the example of the writer who cannot not be writing as they write).

³⁰² *Mabāḥith*, II, 448-458 (the necessary existent), 516-517 (determinism).

The main direct discussion of causes sets out the fourfold peripatetic scheme as adapted by Ibn Sīnā.³⁰³ The material cause is the condition of the possibility of a given entity, and the formal cause then necessitates the existence of the entity. This is the curious quasi-analytic causality that explains non-dynamically why things are so.³⁰⁴ No *change* however actually takes place without an agent. An agent may be the fire that heats the water, the builder who makes the house, the celestial soul that moves the sphere, the giver of forms, who organises the flow of natural transformations in the sublunary, material world, and (of course) God.³⁰⁵

The agent may be conscious, like the builder, and the form that it conceives in its intellect will be an ultimate cause of the object (the house). Such a final cause only becomes effectual when it becomes the object of the agent's fixed will, that leads the agent to action.³⁰⁶ The agent may however be unconscious, like the fire, but still be goal-directed, moving upwards to a particular point and heating water to a set temperature. Agency and purpose (or goal) go together.

Accordingly, he presents Ibn Sīnā's claim from the *Ilāhiyyāt*, that purpose, present in a soul or intellect, is the ultimate 'cause of causes'. However, he sounds a critical note. There is a discrepancy between this grand account of purpose in the cosmos and the way that Ibn Sīnā seems to follow Aristotle, and allows nature to have non-conscious goals in the sublunary world.³⁰⁷ Rāzī does not resolve the discrepancy here, though he will later severely criticise the Plotinian salvation narrative on which the grand account is based.

³⁰³ *Mabāḥith* I, 458-468.

³⁰⁴ The same sort of non-dynamic causality is found in Ibn Sīnā's genus/differentia relation. The genus is an *'illa*-cause of an essence, while the differentia is an *'illa*-cause of its existence in a 'metalogical' necessity.

³⁰⁵ Eg. *Mabāḥith* I, 461 (fire), 493 (the builder), 504 (spheres), 483 (giver of forms), 468 (God).

³⁰⁶ *Mabāḥith* I, 535-537, 540 (quoting Ibn Sīnā) conscious agents; 532-535, natural, non-conscious agents; 539-540 (finitude of final causes) the purpose of generation of animals is the preservation of the form, not of the individual.

³⁰⁷ *Mabāḥith* I, 540. Ibn Sīnā, *Metaphysics* VI, 5, 220-235. The section owes as much to Plotinus as to Aristotle.

Thus, Rāzī presents Ibn Sīnā's two metaphysical accounts of causes (a) as substructures intrinsic to the universe, entailments of the logic of possibility and existence, and (b) as ultimately subordinate to the purposes of intentional beings. However, Rāzī also presents the empirical side of Ibn Sīnā's analysis of relationships of cause and effect in the world. Observational data classifies events as 'always', 'for the most part' or 'chance'. This leads to an analysis of causal bundles and affirms the principle that 'predisposing causes' and conditions, when taken together with the appropriate form of agency *always* result in the expected effect.³⁰⁸ In the natural order, a necessary causal process is something observable that *always* happens in the same way. Where an expected effect does not take place, we look for some absent condition or present impediment.

The natural transformations of chemistry and biology illustrate the sort of causal nexus that Ibn Sīnā has in mind. Materials first interact with each other, according to the natures or powers embedded in them. When they have achieved an equilibrium of *qualities* (i.e. accident-forms) they become 'predisposed' (*musta'idd*) to receive a new substance-form, which is then duly provided by Ibn Sīnā's 'giver of forms', the last of the emanating intellects, who manages the sublunary world.³⁰⁹

Though Rāzī will attack many of the neo-Platonic elements in Ibn Sīnā's scheme, he does accept the basic picture of an agent implanting substance-forms in the suitably predisposed material.³¹⁰ 'Material' may mean a compound of the simple elements (fire, earth etc.), or it may mean a compound of higher substances, like the bodily humours (out of which, for instance, blood is transformed to bone).³¹¹ This 'hypothetical' necessity for the

³⁰⁸ *Mabāḥith*, I, 526-531.

³⁰⁹ *Mabāḥith*, I, 483-484.

³¹⁰ He will declare a theological (and parsimonious) preference for God's direct action, but remain *philosophically* neutral about whether the agent is God, or something like Ibn Sīnā's 'giver of forms'.

³¹¹ *Mabāḥith* I, 545 (example of proximate and remote cause), *Mabāḥith* II, 61, 229 (predisposition of the body to receive the soul),

appropriately predisposed materials is what guarantees the regularities of biological and chemical processes.³¹² It is not the case that anything can come of anything: specific entities need specifically predisposed matter before they can receive their form.³¹³ That hypothetical necessity of predisposition is clearly distinct from Ash‘arī ‘custom’.

Thus, at any one moment in time, the material universe is in a particular state of predisposition that invites the giver of forms (or the celestial spheres or human agents or natural powers) to perform a particular, appropriate set of transformations or movements. This in turn brings the universe into a new state of predisposition.³¹⁴ Finite purpose-driven simultaneous causality, whose ultimate source is the necessary existent, can therefore sit alongside an everlasting sublunary world, and its infinite sequences of generation and decay.

§3.1.2 Powers and Potentials

‘Power’ (*quwwa*) and ‘in potential’ (*bil-quwwa*) are important terms in the peripatetic vocabulary that overlap with this account of predisposition and the cyclic changes in matter. ‘In potential’ applies to the relation between a given piece of matter and the forms that have not yet supervened on it – whether these are substantial forms or (peripatetic) accidents. Motion (*ḥaraka*) is then the transition from a potential state to an actual state, or actualisation. In the case of a change of substance this is labelled generation (*takawwun*) rather than motion. The concept of ‘predisposition’ makes this relation physically more precise. Any bowl of water is air *in potential* (according to the four-element hypothesis),

³¹² For hypothetical necessity, see Aristotle *Physics* B, 9, 199b34 – 200b8.

³¹³ *Mabāḥith* II, 512.

³¹⁴ See, for instance, *Mabāḥith* I, 483. A stone rests on the ground; then it is thrown in the air (the wrong region for it); its natural tendency towards its correct region becomes active and it returns to the ground; since it is now in the correct region it ceases to move, and remains there until another agent (natural or conscious) moves it.

but it is only when it is at boiling point that it is immediately *predisposed* to become air in a way that determines that it actually will become so.

The term ‘power’ (*quwwa*) refers to the active potential of a simple substance like fire, for example, to heat and to rise, or water to cool and take on different shapes. We saw that Ibn Sīnā prefers to restrict the term ‘nature’ to such causative powers (though he acknowledges other more general usages of ‘nature’). Rāzī uses the language of powers throughout, including the powers in complex higher-order material substances and the powers exercised by embodied souls. All of this is presented by Rāzī as reasonable and acceptable fact.³¹⁵

§3.1.3 Prosaic Powers: Deconstructing Ibn Sīnā’s Plotinus

In his discussion of *quwwa* he makes a point of arguing that such an embodied power cannot be a cause of existence. It can only be a predisposing cause. That much is entirely in keeping with the bulk of the Avicennan framework. However, in context he is doing much more. He is attacking the basis of Ibn Sīnā’s theologically motivated emanation argument, and marking a highly significant metaphysical difference of opinion.

Ibn Sīnā generated the body of the first sphere, its soul and the second cosmic intellect from the first intellect’s awareness of its own possibility, existence and necessity

³¹⁵ *Mabāḥith* I, 499-501. See also, 501-508 (on the finitude of powers); 523-524 (resolving an ambiguity in Ibn Sīnā’s account of ‘nature’, ‘form’ and ‘power’); 532-533 (the ‘goals’ powers in non-conscious material objects in nature); 536 – 537 (discussion of incidental purposes and reflex actions linking psychological and physical powers); *Mabāḥith* II, 229-230 (embryology and the powers involved in generation); 232-268 proof that the soul is a substance, enumeration of the biological powers, leading to a restatement of the argument from embryology for a wise creator. Bilal Ibrahim has suggested that ‘Rāzī views powers as empirical phenomena, more akin to contemporary views of ‘capacities’ or ‘dispositions’. That is, Rāzī neither denies their existence outright, nor does he equate powers with forms or natures, as do earlier Peripatetics, including Avicenna.’ Ibrahim 2020: 93-94. While it is clear that Rāzī (like Ibn Sīnā) regards powers as observables, it is less obvious to me that he departs significantly from Ibn Sīnā in his discussion of the terms for nature and power/capacity, other than in rejecting the Plotinian metaphysical narratives about potential. See particularly *Mabāḥith* I, 523-524.

respectively. He blended this theological emanation narrative with the more prosaic (and genuinely Aristotelian) ideas of matter as ‘possibility’ or ‘potential’ and ‘not-[yet]-being’. Rāzī rejects this use of ‘possibility’ and ‘existence’ as explanatory factors in the grand narrative of the timeless emanation of the universe. ‘Existence’ and ‘possibility’/‘potential’ cannot be the causes of the existence of anything.

However, that version of the emanation theory was supposed to explain the pluriformity of the universe while maintaining the principle that the One can only generate one.³¹⁶ For other reasons, Rāzī will reject that principle and thus has no need of that narrative. That in turn will allow him to affirm direct divine activity in the creation of the cosmos, and with it, God’s knowledge of particulars.³¹⁷

§3.1.4 Body, Motion, Time,

In the *Mabāḥith*, Rāzī presents time, motion and body as peripatetic continua, rather than as sequences of finite (or infinite) atomic particles.³¹⁸ He seems (at this point) persuaded by the geometrical arguments against atomism, even though he is aware of the fragility of some of the peripatetic claims about bodies and their unity. He presents the theory of a bodily form that inheres inseparably in *hayūlā* (prime matter) and in virtue of

³¹⁶ Ibn Sīnā, *Metaphysics* (Marmura), 9, 4, §§1-6, 326-328.

³¹⁷ See *Mabāḥith* II, 513-514: ‘So it is clear from what we have presented that the *sabab* cause that brings the elemental forms into being is the separable substance. According to them this is the agent intellect, but as we suppose this is the necessary-of-existence most high.’ The context is an elaboration of the thesis that a body may cause qualitative change, but cannot bring about transformation of substance.

³¹⁸ *Mabāḥith* I, 171-174 (the distinction between bodiliness and size; dimension); *Mabāḥith* II, 8-11, (the unity and divisibility of bodies; differences between the sages and Democritus; similarity between Democritus and the Mutakallimūn); 11-23 proof against atoms (finite); 24 proof against atoms (infinite); 25-38 twelve arguments supporting atomists against the peripatetics and their rejection; 49-63 discussion of bodily form and location; *Mabāḥith* I, 550-554 Ibn Sīnā’s two descriptions of motion (notional and real) and their defence; 642-645 paradoxes of a time with real parts (atomic time - atomism); 645 time without motion; 646 time as analogous to motion (notional time as length, ‘real time’ as indivisible instant); 647 time as occasion; 648-651 criticism of Ibn Sīnā and attempts to elucidate time. The paradox of the present ‘now’.

which it is receptive of dimension and species forms. He rejects suggestions that there might be free-standing dimensions in space.³¹⁹

He recounts and defends Ibn Sīnā's definitions of motion. Notional motion is a mental object. This is the trajectory of an object from one point to another in time that we hold in our minds by retaining the image of the starting point together with the image of the endpoint. Real motion exists in the external world when an object is at an intermediate point in a gradual transition from one state to another. That may be motion in place or a change of quality (changes of substance, by agreement, take place instantaneously, and therefore are not motions). On qualitative change, however, Rāzī raises a good scientific question about whether it is genuinely gradual (and *a fortiori*, genuinely a motion). Something that looks gradual to the naked eye, may turn out to be a sequence of rapid punctual changes.³²⁰ Though he does not spell this out, such a model would be formally closer to Ash'arī accounts of change.

Though he broadly accepts the standard peripatetic account, he provides an alternative account of the *reality* of time.³²¹ Ibn Sīnā identifies the instant of inner reckoning (*wahm*) as an extensionless boundary point between past and future, similarly to Aristotle.³²² This boundary point creates a continuous flow of time from the point of view

³¹⁹ A position that he will reverse in the *Maṭālib*. Bilal Ibrahim suggests that in the *Mabāḥith* (and the *Mulakhkhaṣ*), Rāzī already shows some hesitation about the verifiability of bodily form theory. Ibrahim 2020: 69, 78. Such reservation may be hinted at in *Mabāḥith* I, 557, where bodily form comes into an incidental argument about whether being a body can be a source of motion. Rāzī says, 'As for bodily form, you need to set up a demonstration that it is a single thing in all bodies.'

³²⁰ *Mabāḥith* I, 591.

³²¹ Lammer has suggested that Ibn Sīnā's account of 'before and after', trying to escape the charge of circular definition, already hints at a substantial existence of time, but he does not suggest that the (notional) instant bears this reality. Lammer 2021: 481. Rāzī, as we shall see (perhaps under the influence of the *kalām* tradition) argues for a real time, but based on the instant.

³²² Ibn Sīnā, *Physics*, II, 12, §1, 237-238 (the subjective instant), §§5-6, 243-245 (the instant and the flow of time). McGinnis observes that Ibn Sīnā's discussion owes much to John Philoponus. McGinnis 2009: 243-244, fn. 9; fn. 11.

of the observer. Time out in the world, however, is ‘the number of motion’ in material objects – though not tied down to any one particular motion – with the corollary that where there is no motion, there is no time.³²³ Time is real, and its reality, according to Ibn Sīnā, derives through motion from its relating one physical object at one point in space to the same physical object at a different point in space in the relationship of before and after. It is clearly an accident.

Rāzī runs through a number of objections. He offers an argument that time must exist independently of motion, which hints at Abū l-Barakāt al-Baghdādī’s suggestion that time measures existence rather than motion.³²⁴ However, what Rāzī reports is based on theological concerns not directly mentioned in the former’s strictly philosophical arguments, and implies a definite position on creation and the eternity of the world about which Rāzī is (at least in the *Mabāḥith*) ambivalent.³²⁵ God existed when nothing else existed or moved and God does not change, therefore there was a time when there was no motion.

In the end Rāzī defends the description of notional time (*zamān*) as the number of motion, supporting Ibn Sīnā’s identification of time with world-time, by reference to the ‘oldest motion’ – viz the motion of the outer celestial sphere.³²⁶ He does not call this motion pre-eternal, but he does say that the first motion cannot cease to exist unless the first body ceases to exist – and that is an impossible premiss. This is one of a number of places where his argument seems to favour an Avicennan ‘timeless’ creation and the eternity of the world.

However, he also proposes a real time analogous to Ibn Sīnā’s definition of ‘real’ motion, so creating an interesting half-way house between Ibn Sīnā and al-Baghdādī.

³²³ Ibn Sīnā, *Physics*, II, 11, 6, 235.

³²⁴ See Abū l-Barakāt al-Baghdādī, *Mu‘tabar*, (*Ilāhiyyāt*), 39.

³²⁵ *Mabāḥith* I, 645. Al-Baghdādī offers a hint of the presence of such arguments in his own background reading when he considers the relation of the creator to time in *Mu‘tabar*, (*Ilāhiyyāt*), 40-41.

³²⁶ *Mabāḥith* I, 650.

Notional, extended time exists where the memory of ‘before’ is held before the mind simultaneously with ‘now’, but real time is the punctual, extensionless ‘now’ that correlates with (but is not identical to) the midpoint in a motion. This reality creates the flow of time in the world. The emphasis on the ‘now’ has much – though by no means all – in common with al-Baghdādī’s formulation and is a step on the way to making time a substance rather than an accident.³²⁷ There are fragilities in the position, which Rāzī hints at here. His focus on the ‘now’ as the reality of time, and the difficulty of calling an extensionless ‘now’ real, will eventually give him grounds to prefer an atomistic account of time, space and motion in the *Maṭālib*, as we shall see in Part III.

§3.2 The Hard Questions

In the *Mabāḥith*, a fundamentally Avicennan universe is determined by multiple causes. It is not occasionalist, though it is continually punctuated by the appearance of new substance-forms in moments of actualisation. However, we have already seen that there are interesting and pointed divergences from Ibn Sīnā’s account of reality. So how far are these divergences from Ibn Sīnā a response to the ‘errors’ in *falsafa*, identified by Ghazālī? Specifically, the claims that God is a necessitator rather than a chooser, that the world is eternal, that God has no knowledge of particulars and that there can be no resurrection of the body. To these we now turn.

³²⁷ *Mabāḥith* I, 649. He follows Abū l-Barakāt al-Baghdādī in highlighting the reality of time through the phenomenal now (the point of a pen tracing the line), but does not go the next step and correlate that now with present *existence* rather than present *motion*. Again, Rāzī speaks of time as a succession of (albeit extensionless) ‘nows’ in the external world. Al-Baghdādī, like Ibn Sīnā, keeps his ‘nows’ notional. *Muṭabar (Physics)*, 77–80.

§3.2.1 God: Necessitator or Chooser?

§3.2.1.1 The One generates more than one: Against Ibn Sīnā

Rāzī explicitly rejects Ibn Sīnā's narrative of the first intellect generating multiple entities through its intellection of its own necessity, possibility and existence. He argues that even to suppose this undermines the very premise ('the One can only generate one') that appears to make it necessary.³²⁸ At a stroke he removes the principal conceptual barrier to the action of a unicitous God on a pluriform world.

In the *Ilāhiyyāt* of the *Mabāḥith*, he presents more precise reasons for rejecting this Plotinian understanding of unicity.³²⁹ He concludes that the claims of earlier Peripatetics cannot be upheld. Indeed, given that they have not resolved these doubts, 'they should suspend judgment'. He then states his own view, defining his framework for an alternative, and much more direct, interaction between God and the universe:³³⁰

And what is true as far as I am concerned is that there is nothing to prevent all possibles from depending on God on high, but this can be in two categories: one is of those whose possibility, entailed by their essence, is sufficient for them to emerge from the creator most high, so of course their existence would be produced by the creator most high without any condition. The other is of those whose possibility is not sufficient for them to emerge from the creator most high, but instead [other] entities have to come into being before they come into being, so that the preceding entities can be prior to the causes that produce the subsequent entities (and that is given its order by the eternal (*sarmadiyya*) circular motions) then when these possibles are predisposed for existence with some sort of predisposition, they are

³²⁸ *Mabāḥith* I, 495-499, esp 499, 'So more than one thing has emerged from this one, so one of their foundational assumptions is false.'

³²⁹ *Mabāḥith* II, 501-508. It should, incidentally, be remembered that Plotinus' account of the One makes it even more remote (beyond being and knowing) than Ibn Sīnā's 'thought thinking itself', thanks to the creative translation of Plotinus' text that Ibn Sīnā had before him.

³³⁰ *Mabāḥith* II, 507-508.

produced by the creator most high and exist from him, and there is no influence at all among the mediators in bringing into being, but only in predisposing.

We can note that the physical structure of the universe is fundamentally the same as Ibn Sīnā's, except that now the rôle of the 'giver of forms' and the bestowal of existence can be fulfilled directly by God. The first class of entities require no condition and are by implication eternally existentiated (the A column of our table). It is only sublunary objects, which emerge into existence in the flow of events, that require a specific (temporal) predisposition of their material before the simultaneous action of God (or any other agent) can bring them into reality (the B and C columns of the table).

Affirming that the cause (*sabab*) bringing the elemental forms into being is a separable substance, Rāzī explicitly states: 'according to them this is the agent intellect, but as we suppose, this is the necessary-of-existence, the most-high.'³³¹ Nevertheless, he allows that the action of the ultimate agent may be shared with (*mushārika* – perhaps 'in synergy with') celestial states, and that there are four celestial bodies that predispose matter to the forms of the four elements respectively. Here, we might see Rāzī making space for alchemy and astrology, which he will explore thoroughly in the *Sirr al-Maktūm* and weave into the philosophical narrative of the *Maṭālib*.

By removing the need for an intermediary chain of intellects in the process of existentiating or actualisation, Rāzī has made a formal analogy between an Ash'arī God and Ibn Sīnā's giver of forms that much easier to recognise. The one continually brings properties into existence in pre-existing, featureless atomic bodies, and the other brings

³³¹ *Mabāḥith* II, 513-514.

substantial forms into actualisation in pre-existing and predisposed matter. If we are talking about God in each case, we suddenly have common ground.³³²

Further, Rāzī's God can get involved directly with the evolution of the physical universe in time. The best Ibn Sīnā's 'First' can do is give its informed, timeless consent to the universe evolving, necessarily, from it.³³³ However, Ash'arīs want God to be able to do whatever God wants whenever God wants, subject only to logical constraints. In Rāzī's hybrid universe, God can bring whatever beings God wants into existence in the history of the universe. God may have to wait until a right moment, determined by the material and non-material agents in the universe, but since God set those instruments in place, God remains in ultimate control. Some might regard that as not good enough – God still appears constrained by an independent nature. But others might regard that as a sufficient step in the right direction: God is really only constrained by the primary choices of God's eternal will, which just happens to unfold in time. The ultimate cause of everything is indeed the free will of God.

That said, Rāzī's account of the eternal will remains close to Ibn Sīnā's.³³⁴ He presents two familiar ideas. God's will must be free of purpose, because to have a purpose implies a lack to be made up, and God is not lacking anything. Then, because any given goal is finite, a will determined by such a goal would cease when that finite goal was obtained, and God's will cannot cease or change. He concludes that 'the will of God on high is due to the necessity of the essence that wills, namely the essence of God on high'. The will is

³³² It is important to note that though Rāzī clearly opts for God, rather than an agent intellect here, *philosophically* the question is unresolved. The fact that the Plotinian unicity arguments do not show that God has no direct action in the world is not sufficient to prove that God *must* have direct action in the world. In other writings he will often refer to both possibilities as reasonable options.

³³³ See Ibn Sīnā, *Metaphysics* VIII, 7, §§2-3, 291-292 (intellectual knowledge of the universe emanating from him, and contentment with this), IX, 4, §3, 327, 'Hence, the First is satisfied with the emanation of the whole from him.' In this sense Ibn Sīnā's One 'wills' creation.

³³⁴ *Mabāḥith*, II, 485-491.

therefore eternal and changeless.³³⁵ So the ‘true meaning’ of God’s having a will is still Ibn Sīnā’s informed consent to what God is producing:

The knowledge of the principle of what it is producing and that it is good and not in contradiction of its essence is the will and pleasure of that being.

§3.2.1.2 The Necessary Chooser: Against *kalām* Objections

This still looks suspiciously like the sort of necessitated necessitation that Ghazālī attacks. So Rāzī frames a direct reply to that *kalām* attack on necessitation, based on two concepts: the necessary connection between will and act, and the principle of ‘necessity of the fact’. The criticism, he argues, is misconceived. It is incoherent to suggest that once the will is present the action may not follow. As long as the will is undecided nothing happens, but once it is decided the action necessarily follows:

So for this reason what they say about the difference between a necessitator and a chooser, that the chooser can both act and not act, whereas the necessitator cannot *not* act is false.

The chooser cannot *both* have chosen *and* be free to choose otherwise at the same time. The divine will is, of course, an unusual case. There is never a moment in time when it has *not* already chosen. But that does not contradict the claim that everything that happens is chosen by God.³³⁶

³³⁵ *Mabāḥith*, II, 490.

³³⁶ Griffel reads Rāzī’s position on God’s necessitation in the *Mabāḥith* as essentially Avicennan (Griffel 2021: 523-541). The reading here is that Rāzī is presenting the basis for a genuine compromise between the Avicennan and the Ash‘arite positions. Griffel focuses on the key question of whether God’s will (which once determined brings things into existence) is itself further determined (‘preponderated’). In his *ḥikma* works it is, in his *kalām* works it isn’t. Now Rāzī will fairly consistently argue that allowing non-preponderated *ad hoc* events in time in the universe, even for theological reasons, undermines the most powerful proof of the existence of God (causal necessity). However, the core of his compromise is that the global creation of the world and of the individual events that take place in time are in different ways the product of one *eternally*

Rāzī extends the argument significantly. Since God knows what God will do on Tuesday and God cannot be mistaken, what happens on Tuesday is necessary and cannot be otherwise. Therefore, ‘the possibility of not-coming about is *not* a condition of an action’s being in God’s power, or being willed.’ Any event that exists in the world is necessary and cannot be otherwise. Since this is true whether we are considering direct divine necessitation or inner-world necessitating causes, the question of the existence or not of secondary causes has no impact on the question of God’s free choice.

Rāzī’s insistence on necessitation is bound up with his proof of the existence of God. If Wisnovsky is correct, the traditional *kalām* argument from origination had become weakened for Ash‘arīs because of their commitment to the eternity of God’s attributes.³³⁷ Rāzī clearly accepts that Ibn Sīnā’s argument from necessity is an improvement.³³⁸ He does refer in passing to the argument from origination in the final part of the *Mabāḥith* and is sympathetic to a claim that the connection between cause and origination is *clearer* than the connection with possibility. However, he asserts that those who treat possibility as the *more fundamental* explanatory element have the stronger argument.³³⁹

Ibn Sīnā analytically connected any ‘possible’ to the necessity of its cause. This metalogical link is the keystone of his argument for the existence of God as necessary

determined will, some of whose effects are dependent on prior willed effects that unfold in time. He focuses on the necessity of the *mūjib* as a necessity in the effect: what the determinate will necessitates must be. It may be that the eternal divine will must be what it is (a necessity of the fact), but that does not make it necessitated in the same way that a human will is necessitated (by a desire or perceived benefit for instance) or by some external agent – precisely determining factors that are ruled out in the case of God. In the *Maṭālib* he will explicitly underscore this difference between human and divine choice. Rāzī has however successfully indicated a way in which it can be true in a Peripatetic-like system that God freely chooses to bring into existence every event in the universe, through the instrumentality of its contents. This is very different from Ibn Sīnā, whose God is ontologically barred from direct action on any of those contents, and must be passively content with their evolution.

³³⁷ See §2.1.3 above.

³³⁸ This remains just as true in the *Maṭālib*, as we shall see in Part III.

³³⁹ *Mabāḥith* II, 448-451; the reference to origination is at 450-451.

existent.³⁴⁰ Rāzī too argues that a possible entity is precisely one that is caused or ‘necessary through another’.³⁴¹ He makes much use of the image of the balance needing a ‘tipping factor’ (*murajjih*), to demonstrate that this is a primary, self-evident truth.³⁴² Possible entities are just those for which existence and non-existence are equally balanced and so it is self-evident that they ‘need’ a decisive factor to tip the balance in favour of one or the other.³⁴³

Hence, Rāzī’s claim that necessitation is not a problem for divine freedom, based as it is on the concept of ‘necessity of the fact’, is intimately bound up with his commitment to the argument from possibility to the necessary being. Cast any doubt on ‘necessity of the fact’ and you add nothing to the problem of divine choice but you do undermine the soundest basis for demonstrating the existence of God.

³⁴⁰ Ibn Sīnā, *Metaphysics*, I, 6, 29-34 (possible beings, necessary beings and causes). IX, 1, §§9-13 (discussion of temporal event and the need for a ‘preponderator’ or tipping factor *murajjih*).

³⁴¹ See *Mabāḥith* I, 124-128 (the non-necessary possible ‘needs’ a cause; rebuttal of sceptical objections that there can be uncaused events; this is self-evident, primary knowledge; 128-131 (rebuttal of suggestion that some possibles may come about because they are more probable – this reduces to having a decisive factor/cause); 131-132 (the possible is in a balance between impossibility (non-being) and necessity (being); 132-133 (possibility is always actual in possibles, and is that because of which a possible ‘needs’ its cause; 134-135 (defining origination [*ḥudūth*] with respect to possibility, it is possibility *not* origination that logically needs a cause). See also the more physical arguments in the discussion on chance following Ibn Sīnā in eliminating ‘for the most part’ from real causality, and the priority of purpose over chance (*Mabāḥith* I, 526-538).

³⁴² *Mabāḥith* I, 124.

³⁴³ See Griffel 2021: 525-528. From a rudimentary search in the *Mabāḥith*, I find 51 uses of the *murajjih/tarjih* language. Ibn Sīnā does use the *murajjih/tarjih* language at *Metaphysics*, IX, 1, §§9-13, but his general account of possibility is more closely tied to the peripatetic narrative of a potential, inherent in matter that emerges into actualisation.

§3.2.2 Does God know Particulars?³⁴⁴

§3.2.2.1 What Ibn Sīnā might have meant

The question is really *how* God knows particulars. What Ibn Sīnā actually says is that God has knowledge of particulars, but in a ‘universal way’, analogous to the way that an astronomer has ‘timeless’ knowledge of a particular eclipse of the moon at a particular time and location.³⁴⁵ Every individuating property of every single entity can be known universally (i.e. theoretically or algorithmically) in a way that precisely identifies just that entity. The necessary existent as the source of all that is, and armed with full knowledge of itself, fully knows all the consequences of its action, and thus ‘no individual thing escapes His knowledge’.

However, God cannot know a particular as we do, as an observable event (involving sense-perception, and imaging in the soul) in the flow of time.³⁴⁶ There are two main arguments for this. One is that time-bound perception of material objects-as-they-are is essentially connected to matter, physical sense-organs and an imaging faculty in the bodily soul. God, however, is only capable of pure intellection, a special kind of perception of intelligible entities free of any material connection. The other is that any time-bound perception implies a change dependent on extrinsic entities of some kind. But a necessary being cannot be subject to any dependency.

Ghazālī’s rhetorical objection to the argument in the *Tahāfut* takes ‘universal knowledge’ of an individual human to mean that we can only know that individual

³⁴⁴ Griffel approaches this discussion *via* the *Meno* paradox and places Rāzī’s discussion more precisely in its post-Ghazālīan context (Griffel 2021: 335-386 and *passim*). As far as I can judge, what follows is broadly compatible with his analysis. Benevich also analyses the development of Rāzī’s response in Benevich 2019: 29-33.

³⁴⁵ Ibn Sīnā, *Metaphysics*, VIII, 6, §§15-22, 287-290.

³⁴⁶ Ibn Sīnā, *Metaphysics*, VIII, 6, §§13-15, 287.

‘universally’ as ‘a human’, and so cannot know what it is that individual does or any of the ways that they change in time.³⁴⁷ This raises the religious problem of how such a God can reward or punish particular individuals for their actions. As it stands, however, Ghazālī’s claim is slightly misleading.

All features of an individual, whether relational, time-bound, or not, can be completely described by a set of universals (including accidents) in a way that uniquely specifies an individual and their journey through time. Astronomers do this with ‘timeless’ charts and tables, and novelists do it with ‘timeless’ words and descriptions. The notion of complete specification is what allows Ibn Sīnā to claim that ‘no individual thing (*shakhṣī*) escapes his knowledge’.³⁴⁸ Rāzī seems aware of the point, even as he argues that God’s knowledge of all causes does not mean that God has knowledge of all particulars and what happens to them.³⁴⁹

This is also false, because when a thing is known through its cause, that thing is necessarily a universal, for if you know that when a certain cause is present at a certain time in a certain substrate with a certain condition, then necessarily a certain effect comes into being on such and such a condition, then all these constraints, even though they provide **specification** (*takhṣīs*), still they do not provide **individuation** (*shakhṣiyya*).

Universal properties generated by any given set of causes and conditions, however uniquely specifying in fact, could notionally apply to another individual. He concludes that knowledge gleaned from knowing causes cannot entail knowledge of the effects ‘as they come to be in time’.

³⁴⁷ Ghazālī, *Incoherence*, XIII, §7, 136.

³⁴⁸ Ibn Sīnā, *Metaphysics*, VIII, 6, §15, 288. See Benevich for the range of interpretations of Ibn Sīnā. Benevich 2019:13-14

³⁴⁹ *Mabāḥith* II, 478-479. See Benevich 2019: 18-19.

The point is not that we are unable to identify all the attributes of an individual in the course of their history, but rather that unless we have a different sort of knowledge of that attribute bundle *as it is* a particular point in time and existence, we cannot know it as a genuine particular.³⁵⁰ The distinction is between theoretical knowledge and personal acquaintance, the phenomenal knowledge proper to a conscious existent in time. By definition, particularity is something that can only be grasped by acquaintance. In the background lurks a theological argument, whether God should in some sense be consciously present to the unfolding course of world events as they happen, in a way that justifies the scriptural language of ‘seeing’ and ‘hearing’.³⁵¹ The question becomes, can God have direct knowledge of phenomena as they happen?

§3.2.2.2 The two Problems

Rāzī sets out the two main philosophical objections to such direct acquaintance at the beginning of his discussion of God’s knowledge.³⁵² God might have direct knowledge of some particulars, where these are changeless non-material objects (God’s own self, for instance). But God cannot have direct knowledge of a changeless material object (like the celestial sphere) because it is material. The ‘perception of embodied entities can only be through embodied instruments’. Nor can God have direct knowledge of changeable objects whether immaterial (like human souls) or material. This is because ‘the change [in the objects] entails change in knowledge of them and that is impossible in the case of God on high.’

His argues that the first claim is false. Non-material entities can perceive particulars. He refers to a decisive argument from his discussion on the soul proving that ‘a

³⁵⁰ This is presumably the point Ghazālī was really making.

³⁵¹ Rāzī discusses the different interpretations of ‘seeing’ and ‘hearing’ at *Muḥaṣṣal* 399-400 for instance.

³⁵² *Mabāḥith*, II, 476. He has noted that Abū l-Barakāt al-Baghdādī is a lone *falsafa* voice affirming God’s knowledge of particulars (475).

non-material entity *can* perceive things with shape and body'.³⁵³ That decisive argument seems to be his earlier proof that the act of perception is to be located in the soul, not in the organs of sense.³⁵⁴ The soul by common agreement with the Peripatetics is non-material. Yet it must perceive particulars in order to make complex judgments. The same non-material thing is able to make judgments about the two very different particulars: 'this taste is sweet', and 'this (particular) person before me is not a (universal) horse'. One point has direct theological significance:

[A soul] governs a particular body, but for it to govern an individual body as just that individual is impossible until it has knowledge of it as it is. So in that case, the soul has a perception of the particular body as such, and that logically requires the soul to be a perceiver of particulars.³⁵⁵

As we saw in the previous section, Rāzī has suggested that it is reasonable to suppose direct divine action in the sublunary world on particulars that change and decay. By the argument just quoted, such a God *must* know particulars.

Just this point is made later in the context of the argument from embryology. That argument allows us to conclude that there is 'a [non-material] agent who is wise, with power to perfect and with knowledge of universals and particulars.'³⁵⁶ With philosophically balanced regret, Rāzī again concludes that this is not sufficient to show that God is that agent, only that all the arguments taken together do not rule this possibility out, and that it may be the one that makes the most sense.³⁵⁷ What is clear, however, is that there is no reason to suppose that a non-material entity cannot perceive particulars.

³⁵³ *Mabāḥith*, II, 478.

³⁵⁴ *Mabāḥith*, II, 331-344.

³⁵⁵ *Mabāḥith*, II, 333.

³⁵⁶ *Mabāḥith*, II, 481.

³⁵⁷ *Mabāḥith*, II, 482. Rather than our old friend the agent intellect. He (sympathetically) criticises Abū l-Barakāt al-Baghdādī's attempt to use a 'lesser-greater' argument to identify the wisest agent with God.

What, then, of the second objection? For God to have knowledge of transitory events in time would mean that God's knowledge was dependent on those changeable events, and that would mean both that God's knowledge changed and that God was a dependent, possible being rather than a necessary one.³⁵⁸ Rāzī reports several responses to the question of change in God. He observes that three are deficient – including one of Ghazālī's.³⁵⁹ There is, however, one response that he does not criticise. There are conditions under which God's knowledge can be said to change.³⁶⁰

It is allowed that new properties (*aḥkām*) come into being for the individual essence of God on high, according as new events in time come about. But we are not saying that the existence of these events necessitates the occurrence of these properties.

The constant, new *aḥkām* are a 'metalogical' requirement of God's (changeless) inner essence. However, *when* they actually happen is logically conditional on the time-bound events in the world. In other words, what actively produces the changeable properties is God's self, but the changes are logically dependent on circumstances that evolve in time. That is a logical dependency, not an ontological one, since God also happens to be in control of the evolution of events in time.

We can note the exact parallel with Rāzī's adaptation of Ibn Sīnā to make God the 'giver of forms'. There too God has to wait until the material has evolved to the correct point of predisposition before acting. But that is a logical consequence of the way God chose to set up the universe, not a mark of dependency. The change is allowable in the case of these *aḥkām* because, though they are produced by God's self, they do not constitute

³⁵⁸ Spelt out at *Mabāḥith*, II, 476-477 (change), 478 (dependence). Note the distinct but related questions: whether God changes or not, and a question about God's dependence on other objects. These are both presented by Ibn Sīnā in *Metaphysics*, VIII, 6, §§13-14, 287.

³⁵⁹ Ghazālī, *Incoherence*, 13, §14, 138. Ghazālī suggests that the cognition of an event-at-3-pm is the same whether it is 11am, 5pm or 3pm. Rāzī disagrees.

³⁶⁰ *Mabāḥith*, II, 477.

God's self. In Avicennan language they are entailed accidents, in *kalām* language they are attributes (*ṣifāt*).

The same point therefore answers the specific question of how a property of God can be dependent on a temporal event.³⁶¹

It is the individual essence that requires the knowledge that they are occurring, just on the condition that these events are occurring.

'On condition' does not imply that 'temporal events become intrinsic to the perfection of God's self.'

§3.2.2.3 Change and God's Attributes – Knowledge as Relation

Two lengthy discussions lie in the background to each of these points. One concerns the theology of God's attributes.³⁶² The other concerns the general definition of knowledge.³⁶³ We shall begin with knowledge, which Rāzī's discusses as an accident of quality, specifically a quality of the soul.

Rāzī considers the question whether knowledge is the imprinting (*inṭibā'*) or tracing (*irtisām*) of a form in the soul or whether it is a relation.³⁶⁴ He argues that knowledge is not identical with imprinting – though that does not mean that there is no imprinting involved.³⁶⁵ After equating knowledge (*'ilm*) with perception (*idrāk*), consciousness (*shu'ūr*), and intellection (*'aql*), he describes knowledge as a 'relational state' that 'only exists when

³⁶¹ *Mabāḥith*, II, 479.

³⁶² *Mabāḥith*, II, 461-468.

³⁶³ *Mabāḥith*, I, 319-378.

³⁶⁴ Hutchings makes the point that Rāzī's epistemology in the *Mabāḥith* is often driven by theological concerns. 'Rāzī's innovations in his philosophy often seem to be inspired by certain religious doctrines, and intended by him to be replies to the philosophers'. Hutchings 1971: 111. Rāzī considers Ibn Sīnā 'confused' on this point. See, *Mabāḥith*, I, 325.

³⁶⁵ *Mabāḥith*, I, 323-324.

two relata exist'.³⁶⁶ The relationship can either be between the intellector (the *'āqil*) and itself, in which case no additional form is needed, or between itself and another, in which case there needs to be a form of that other imprinted in itself that can relate to the other entity in the world. Knowledge itself is a present conscious awareness – something beyond definition. As the fundamental state in virtue of which a living being is able to make distinctions in the reality before it, it is logically prior to any act of definition.³⁶⁷

The way a cognitional form (the interior partner of the two relata) is imprinted on the soul and qualifies it, is radically different from other relationships of form and material subject.³⁶⁸ Unlike matter, the soul can cope with a multitude of distinct forms, indeed the more the merrier; it can embrace the large and the small equally; powerful cognitional forms do not eliminate weaker ones; the forms in the intellect do not exhibit the properties that they have in the external world (intelligible fire does not burn); forms that cease to be present to the intellect do not have to be reacquired (he seems to be thinking about recall).

In his later discussion of the powers of the soul, he analyses the 'common sense', and suggests that the mirror can provide a helpful metaphor for the kind of imprinting that goes with knowledge.³⁶⁹ There is a specific problem of how the form in the conscious awareness that is the 'common sense' relates *both* to figures from the inner imaging faculty (the *khayāl*) and to figures in the external world, via the senses:

And the mirror is an analogy for the common sense, for every form imprinted on [the mirror], from whatever direction, may be observed with the senses; so too the

³⁶⁶ *Mabāḥith*, I, 331.

³⁶⁷ *Mabāḥith*, I, 331-332.

³⁶⁸ *Mabāḥith*, I, 332-333.

³⁶⁹ *Mabāḥith*, II, 419. Although he rejects Abū l-Barakāt al-Baghdādī's 'eye ray' theory of vision, the ray theorists' examples of the way mirror images cannot be imprinted in the material of the mirror has striking resonances with the list of differences between cognitional forms in the soul and material forms. *Mabāḥith*, II, 288.

forms imprinted in the common sense are sensed from whatever direction they may come.

The last theologically significant point about knowledge to be emphasised is that it is indeed (as Ibn Sīnā also argues) an accident.³⁷⁰ Whether we consider knowledge in its aspect of relation or whether in its aspect of form, present in the common sense with respect to a particular, or in the intellect as a universal, there is nothing here that alters the inner essence (the *dhāt*) of the knower. Knowledge may be an *entailed accident* of that individual essence, but it is not a constitutive property of the essence itself.

This takes us to Rāzī's discussion of God's attributes and their relation to his substance. Peripatetics argue on principle that there can be no substantive attributes of God's essence. Such attributes would have to be either essential and so necessary or else accidental and so possible. The first would introduce plurality into God's essence. For the second, God would have to be their cause. However, precisely because they are attributes of God, this would leave God as both agent (*fā'il*) and recipient (*qābil*). This violates the Peripatetic principle that 'a simple cannot be passive and active in relation to a single thing'.³⁷¹ This is a specific problem for God's knowledge of particulars. God would be a recipient of the form of those particulars (passive) but would also bring those particulars about and know them (active).

So Rāzī challenges the principle that an agent cannot also be a recipient using Ibn Sīnā's own solution to the problem of plurality in God's intellection.³⁷² He presents a

³⁷⁰ *Mabāḥith*, I, 337-338. Most of this passage is taken up with resolving the problem of how a substantial form, considered as an object of the intellect, can be an accident.

³⁷¹ *Mabāḥith*, II, 460.

³⁷² *Mabāḥith*, II, 461. The passages quoted can be found in the *Sharḥ al-Ishārāt* (Physics), VII, §17, 538 and in Ibn Sīnā, *Metaphysics*, VIII, 7, §8-9, 294 with a couple of slight textual variations. The *Metaphysics* context is God's knowledge of particulars as universals.

passage from the *Ishārāt* in which Ibn Sīnā solves the problem with a thought experiment. Ibn Sīnā considers the constitutive essence of God as an intellect. The fact that it is an intellect entails that it intellects plurality. However, ‘the plurality comes as an entailed accident posterior to and not intrinsic to the individual essence as constituted.’ So these entailed accidents that include relational attributes, non-relational attributes and privative attributes do not impinge on the divine unity. Rāzī points out that these entities therefore both supervene on God’s essence and are generated by that essence. It is possible to be agent and recipient at the same time after all.

Rāzī analyses a similar passage from the *Shifā’*. Ibn Sīnā considers the many intelligibles in God’s awareness. If they belong to his essence, that violates unicity. If they are entailed accidents, then that impinges on God’s necessity, because the entailed accidents are connected to possibles that need or metalogically require a necessitator. Ibn Sīnā points out that it is God’s essence that causes Zayd, not God’s being a necessary being. God’s necessity is not a hypothetical necessity, dependent on the fact that Zayd needs God to exist. God’s necessitating action can bring possible Zayds about, but none of that affects either God’s unicity or God’s necessity.

Rāzī concludes that Ibn Sīnā himself has shown how the agent can be both active and passive, and how the One can have many possible secondary effects (entailed accidents) without detriment to its inner essence of unicity and necessity. The Peripatetics may talk of (entailed) ‘accidents’ subsisting in the individual essence of God, while Mutakallimūn speak of ‘attributes’ but actually they are talking about the same thing.³⁷³ God *can* produce attributes in God’s self that change in time, like being the cause of these particulars or knowing those particulars.

³⁷³ *Mabāḥith*, II, 464.

He dismisses a final terminological objection that for God to change God's attributes would imply that God's self is changeable in potential (*quwwa*) as being really about the possibility (*imkān* i.e. metaphysical contingency) of the attributes.³⁷⁴

So we say, why is it not possible for the necessary of existence to be necessary of itself and possible in some of its attributes? And with this account, the contradictions cease.

Once again Rāzī has justified an Ash'arī position against peripatetic dogma: God can indeed have direct, present knowledge of particulars without detriment to God's unicity or necessity. But he has done it by arguing from inconsistencies within the peripatetic argument itself. Ultimately, he claims that as far as principles go, Ibn Sīnā agrees with him.

§3.2.3 Eternal or created in Time?³⁷⁵

§3.2.3.1 Two Reasons for the eternal Creation of the World

Rāzī describes this as 'one of the most important investigations'.³⁷⁶ Yet on this topic he follows Ibn Sīnā and argues strongly for a world of matter in eternal motion, though dependent for its existence on God, and (in distinction from Ibn Sīnā) allowing God continual interaction with its elements.³⁷⁷ He reaches this position because, he argues, time

³⁷⁴ *Mabāḥith*, II, 466.

³⁷⁵ For Griffel this is again a case where Rāzī's *ḥikma* conclusions are Avicennan, while his *kalām* writings are Ash'arī. That seems correct. This account explores the way in which Rāzī makes the eternity of the world less of a threat to the Ash'arī concerns about God's existence, power and freedom, building on the weaknesses of *kalām* arguments for the existence of God based on origination and the atemporal possibility-necessity relationship.

³⁷⁶ *Mabāḥith*, I, 136.

³⁷⁷ *Mabāḥith*, I, 477, 483-484 (God's continual action among the objects that come to be), 507-508 (quoted above, setting out his conclusion), 659 (the argument from time to the eternity of matter). *Mabāḥith*, I, 135. By invoking time, he circumvents Ibn Sīnā's 'problematic' argument for the eternity of matter based on the need for a substrate for possibility see *Metaphysics* IV, 2 §§16-26, 136-140.

is eternal, time is an accident of motion and motion is an accident of matter.³⁷⁸ This (rather remarkably) turns on its head the *kalām* argument from *akwān*, which works in the opposite direction: accidents are originated (*muḥdath*), accidents of location are originated, atoms depend on a location for existence, therefore atoms too (i.e. matter) are originated.³⁷⁹ In the complex of the argument a number of other elements from the thought-world of the *Mabāḥith* play a rôle. One is that ‘possibility’ (*imkān*) offers a better basis than ‘origination’ (*ḥudūth*) for explaining causation and the need for a necessitator.³⁸⁰ Another is that an effectuating cause must be simultaneous with its effect.³⁸¹

There is, however, also a theological reason for choosing this option. It short-circuits the problem of why God should create the world at one time rather than another.³⁸² Rāzī has proposed an eternal divine will, whose temporal effects work out in relation to the evolution of the material world in time. Once matter and its transformations exist, there is a reason why some actions of God take place after others. But if we suppose an infinite time in which nothing exists but God, we find no reason why the act of creation should take place at one point on that infinite time line rather than any other. If you cannot come up with a reason, then you must suppose that there is no reason at all, and that God exercises a complete liberty of indifference.

³⁷⁸ This roughly tracks Ibn Sīnā’s argument of *Metaphysics*, IX, §§15-26, 304-307. It is important to note, though, that Ibn Sīnā uses the argument to exclude the possibility of an act of creation – because this would imply a change in the creator and make the creator a *ḥādith* in time. Ibn Sīnā suggests that even if the first preceded his ‘originating actions’ essentially and not in time, that too would make the pre-eternal something originated (*Metaphysics* IX, 1, §19, 305). This is a problem that Rāzī will attempt to solve with an analysis of terms. See below.

³⁷⁹ See Shihadeh 2020: 6-7.

³⁸⁰ *Mabāḥith*, I, 125 ff.

³⁸¹ See *Mabāḥith*, I, 477 for a clear statement of the principle in terms of the ‘tipping factor’ (*murajjih*). Rāzī adverts to the convergence with Ash‘arī principles at *Mabāḥith*, I, 491, using the example of the accident of cognition causing ‘being knowing’.

³⁸² He sets up the problem at *Mabāḥith*, I, 478. Laura Jayne has argued that in the *Maṭālib* he no longer finds his own solution here persuasive. We offer our reading of the *Maṭālib* on this problem in chapter ten.

Rāzī rejects that possibility on both apologetic and epistemological grounds. Once you allow that things can happen for no reason you undermine any rational proof of the existence of God. You also reject an intuitive, necessary cognition.³⁸³ He discounts alternative attempts to find reasons, for instance that some times are more beneficial than others. He dismisses standard Mu‘tazilī examples of causeless choices. The only possibility left is that God *has* to create at that time – but that, he says at the outset, would make God a necessitator, not a chooser. Counter-intuitively, it turns out that to have an eternal, changing material world allows us to affirm that God eternally chooses to bring this world into existence, without our having to explain God’s choice of time for its creation.³⁸⁴

§3.2.3.2 The Argument from Acts and the Argument from Motion

There are, of course, positive arguments for the case that the world comes to be in time. Rāzī identifies two that have to be answered.³⁸⁵ The first is based on the notion that any action must have a first beginning, whereas eternity has no first beginning. Therefore, insofar as creation is an act, the timepoint of its inception cannot coincide with eternity and so it cannot be eternal. The second is that motion without a beginning is impossible. Elsewhere Rāzī phrases this as the thesis that objects that come to be must be preceded by time.³⁸⁶ He deals with the first problem in the immediate context of the discussion of causality, and defers the second to his discussion of time and origination.

³⁸³ A recurrent example is the person fleeing a wild animal who chooses one of two indistinguishable escape routes. The philosophers’ reply is given at *Mabāḥith*, I, 480, and summarises arguments explored in detail at *Mabāḥith*, I, 125-131.

³⁸⁴ *Mabāḥith* I, 483-484 (with a response to a critical objection), and 507-508 again (quoted in full in §3.3.1.1).

³⁸⁵ *Mabāḥith*, I, 485. A similar set of arguments for the origination of the world and the impossibility of an eternity of originating entities is presented in *Nihāya* I, 223-229.

³⁸⁶ *Mabāḥith*, I, 135.

§3.2.3.3 Causation as simultaneous Existentialiation

Coming to be in time (*hudūth*) is defined as ‘existing after not existing’.³⁸⁷ This provides the basis for a metalogical argument (deriving a metaphysical truth from the implications of a concept). An originating object is one that is preceded by non-being, therefore any originating object that exists cannot be there unless preceded by (its own) non-existence. If the world could be shown to be an originating object, this could only be because there was a ‘before’ in which it did not exist, and ‘non-existence of the world’ would have to be a reality.

Rāzī shifts the terms of the debate, reasserting his well-established premiss that it is *possibles* that need causes to exist or not exist absolutely.³⁸⁸ Originating objects only do so derivatively. He then asks the question, does the actuality of something that is *possible* require its prior non-existence? He answers that there is nothing in the concept of ‘possible’ and ‘actual’ to require priority in time. It has already been shown that the actuality of a possible is due to a necessitating cause which must be simultaneous with the effect, to create a “necessity of the fact”. The fact that some possibles may have predisposing causes that pre-exist them is irrelevant, because those alone are not sufficient for bringing them about (*taʿthīr*).³⁸⁹

³⁸⁷ *Mabāḥith*, I, 658. Ibn Sīnā allows ‘*ḥādith*’ to imply priority in essence without necessarily implying priority in time. But Rāzī seems to avoid that, reserving the term for the things that come to be in the world in time.

³⁸⁸ *Mabāḥith*, I, 485-494.

³⁸⁹ A consequence of this is that any existent possible must have something sustaining it in existence as long as it exists. It is not a question of simply being brought into existence and then left there. This is the crucial overlap between Avicennan and Ash‘arī notions of causality. Rāzī notes this at *Mabāḥith*, I, 491 and again (using the same examples of *qudra* and ‘*ilm*’) at 493. Ash‘arī sustaining would, however, be discrete, and Avicennan, continuous.

So Rāzī accepts that the concept ‘originating’ comprises existing after not existing, but points out that that concept is not co-extensive with the concept of ‘possibility’.³⁹⁰ Therefore it cannot be what ‘requires a cause’. Because the causal relation that gives something existence must be simultaneous with its effect, the concept of ‘existing after not existing’ turns out to be incidental to causality, not intrinsic to it.³⁹¹

He deals with four challenges to the principle of simultaneity.³⁹² Two of these imply a discrete time model. There is a ‘before’ in which the act of bringing into being (or a prior act of will) begins to operate, and an after, in which the object brought into being actually exists. ‘Coming into being’ thus takes place over two distinct moments of time. It is a different thing from ‘existing’ and is what needs the cause. Rāzī here follows Ibn Sīnā accepting that time and space are continuous, and affirms with him that the inception and continuance of existence are absolutely co-extensive with the inception and continuance of the operation of the cause. Causes are causes either of existence or of the actualisation of motion, not of ‘coming to be’. The notion of simultaneous existentiatio gives the wiggle room for a universe dependent on the will of God, but also, like God, without a first point in time.

§3.2.3.4 Motion without a first Beginning

This leaves the second argument, that motion, change or generation without a beginning is impossible. Rāzī deals with this during a protracted argument for the real

³⁹⁰ The argument is metalogical: a generable ‘exists after not existing’ both before and after it has been brought into being; a possible ceases to be possible once it exists and becomes necessary; ergo ‘is a possible’ is not the same concept as ‘is a generable’. *Mabāḥith*, I, 492.

³⁹¹ Rāzī’s argument makes these moves in ten fine-grained steps.

³⁹² *Mabāḥith*, I, 492-494. The other two challenges are apparent counter-examples: one is epistemological (again implying that causality can only be explained in terms of ‘before’ and ‘after’) and suggests that if two things are simultaneous, we would not be able to tell which is the cause and which the effect. The other is the familiar example of the builder who builds the house and leaves it. To this the response is that it is the process of building that is sustained by the activity of the builder as long as she is there. Not the house (which continues to exist for other reasons).

infinity of time.³⁹³ This will lead to precisely the opposite conclusion, that motion and matter must be eternal.³⁹⁴ Rāzī presents a range of arguments he attributes to a peripatetic ‘they’. He begins by analysing the notion of the *ḥādith*, as that which implies a before and after in time. Since ‘being-before’ cannot be real if it refers to the non-existence of the object, there must a third thing (called time) to which it does refer and that correlates with the object’s non-existence. He then follows the logic of Ibn Sīnā’s account of time as an accident of motion, and draws out the implication from infinite time to eternal motion and eternal matter.

He works his way tortuously through layers of nuance, adding to the concept of time. It has to be quantifiable, and the eternal period, prior to any given event’s coming to be, has to be real. It is incoherent to suppose that time has an origination. Counter thought-experiments do not work.³⁹⁵ He then presents seven opposing arguments for the case that time must have a first beginning, which coincide with all-important arguments about the origination of the world. They include both infinity paradoxes and versions of the mereological argument, which claims that because every single originated object has a ‘before’ the totality of originated objects has a before.³⁹⁶ That argument is only plausible, of course, if it clearly works for every other predicate, and since this is not so, the argument is not compelling.

There is, though, a stronger metalogical argument. A *ḥādith* is by definition preceded by non-being, but pre-eternity is not preceded by non-being, therefore no

³⁹³ *Mabāḥith*, I, 658-670.

³⁹⁴ *Mabāḥith*, I, 659.

³⁹⁵ The counter-example runs, if we are allowed to hypothesise quantities of time before anything came into being, then we should be allowed to hypothesise space beyond the material world. But that would imply infinite matter and that is impossible. The argument is dodged rather than answered: you cannot hypothesise something that is impossible. *Mabāḥith*, I, 663, 665.

³⁹⁶ Shihadeh discusses versions of the mereological argument in Shihadeh 2020: 5-39. The infinity paradoxes are resolved by reference to earlier statements on infinity and to counter-examples (including the notion of proportional infinities).

individual *ḥādīth* can exist in pre-eternity. Because this argument considers only a single originating object it escapes the logical objection to the mereological argument. Rāzī replies with an analysis of pre-eternity (or ‘from forever’: *al-ʿazl*) itself.

‘From forever’ is not a determinate state.³⁹⁷ That is, it does not denote a determinate point on the time-line against which you could say ‘there are no originating objects here’. So he redefines ‘from forever’ as ‘the negation of having a first beginning’. He can then translate ‘each originating object cannot exist in pre-eternity’ as ‘each originating object cannot not have a first beginning’, which is conveniently tautologous with the definition of an originating object. With these three steps he recasts the paradox as a disguised version of the mereological argument, which invites the reply ‘so why do you say that since each one of them is preceded by non-being that the whole must be like that? For that is just what the dispute is about.’

He provides an interesting sceptical-style supplement to this, based on his *ur-*concept of ‘possibility’, which does not so much answer the objection as undermine the whole way that the problem is framed. Each answer to the question whether the *possibility* of an originating object could exist forever, yields a paradox. The answer ‘yes’ leaves an object which has a beginning without any beginning to its possibility, while the answer ‘no’ implies that a possible only begins to be possible at a point in time. The conclusion is that the problem is wrongly conceived, it is a mere *wahm*.³⁹⁸

This provides an answer to one set of opponents with a particular line of argument, but it does not necessarily answer all the questions that arise with a freely choosing agent who creates some things eternally *logically* prior to time (matter and the souls of the

³⁹⁷ *Mabāḥīth*, I, 669.

³⁹⁸ We find an earlier attempt to reframe the discussion in *Nihāya* (I), 299 with a notion of before and after that is neither temporal nor causal. He has already noted the *falsafa* challenges to *kalām* arguments that require a *ḥādīth* to be preceded by non-being in time. This would mean that time was both real and eternal, and that would imply the eternity of the world *Nihāya* (I), 280-283.

spheres) and subsequent things in response to the flow of matter in time. Nor does it solve all the challenges to the imagination of reconciling the two claims that no one *ḥādīth* is without a beginning, while the stream of *ḥawādīth* is without a beginning, other than by inviting the reader to give up on the problem as intractable.

§3.2.3.5 Does he really believe this?

This is not a classical defence of the origination of the world. Rāzī's world is originated *and* eternal. There seem to be three reasons why he might regard this as an acceptable option. The first is that he is absolutely committed to the notion of the decisive factor (*murajjih*). No decisive factor, no proof for the existence of God. As he explains in the passage quoted in §3.2.1 there are two sorts of possible, those that can 'emerge from the creator most high' as they are, so that the creator can give them existence immediately, without any condition.³⁹⁹ The others are those that require correct predisposition in the material world as a condition for the creator to give them existence. God's will is a temporally conditioned *murajjih* within the world of *ḥawādīth* and an atemporal unconditioned one with respect to the elements of the world.

A second is that because Ash'arīs, like falāsifa believe in simultaneous existentiatio, Mu'tazilī arguments that the choice of a chooser must be temporally prior to the effect of the choice have no force. If the most urgent question for Ash'arīs is about God's choice, then whether it is timebound or atemporal is unimportant just so long as it is possible.

Finally, Ash'arīs already accept that God generates God's attributes timelessly. Given that the argument for God based on origination has been superseded by the argument from possibility and is no longer so crucial to apologetic, Rāzī may simply be

³⁹⁹ *Mabāḥith*, II 507-508.

proposing that provided everyone recognises that the world consists of *ḥawādith*, created by God's free choice, honour is satisfied. The fact that it has always been there is irrelevant.

§3.2.4 The Resurrection of the Body – How?

At the end of his psychology Rāzī discusses *falsafa* accounts of the states of the soul on leaving the body.⁴⁰⁰ According to Ibn Sīnā the intellectual pleasures are superior and more enduring than the physical pleasures, and the soul will find leaving the body more or less difficult in proportion to their commitment to one set of pleasures over the other. Happiness, on this account, will involve contemplating the creator and the creator's properties and the order and structure of the cosmos.⁴⁰¹

But not everyone agrees that the happiness and misery associated with the afterlife can belong to the soul alone. There are two alternative models of bodily resurrection. One is the majority Mutakallim view. The individual who is just this body will enjoy eternal pleasure (or suffer eternal pain). According to the second, individuals as a combination of body and soul will be subject to pleasure and pain after death. By arguing that the soul is a separable substance (rather than an accident) he has already clearly divorced himself from the majority view of the Mutikallimūn. He is left with the option of the unscriptural view of the sages or that somehow soul and body are recombined after death.

§3.2.4.1 Restoration after Annihilation (*i'āda*)

He offers two versions of what having a resurrection body might mean.⁴⁰² One is that God annihilates (*ya'damu*) the individual at death and brings back the same individual (after a period of non-existence) at the resurrection. A second is that God takes the

⁴⁰⁰ *Mabāḥith*, II, 426-435.

⁴⁰¹ *Mabāḥith*, II, 429.

⁴⁰² *Mabāḥith*, II, 432-433.

particles of the human that are scattered at death and recombines them to make the identical body of the resurrected human.

The first of these, Rāzī reports, is something some Mutakallimūn find implausible. In fact he himself has already presented arguments against the possibility of bringing the same thing into being twice.⁴⁰³ The nub of these is that once a thing has gone out of existence, it loses its individuality (its *hawiyya*). It can no longer be an object of reference or a bearer of properties. If two objects existed at a later period that were identical in all respects with the initial object, it would be impossible to say which of them was the one that had been restored. To speak of ‘restoration’ therefore makes no sense. Rāzī clearly affirms this argument – approving the words of Ibn Sīnā, who suggests this is something self-evident to any unbiased thinker.⁴⁰⁴

§3.2.4.2 Resurrection as Reconstruction

This leaves some version of recombining the particles (or parts) that constituted the physical body of the individual during life. He puts an unusually clear dividing line between his own voice and that of the sages, as he recounts eight objections in principle to such a model of bodily resurrection: ‘the sages have put forward their objections and we pass them on’.⁴⁰⁵ At the end of these he says:

So this is the sum total of what is said to prove that the restoration of bodies is impossible. And these are weak arguments, based on flimsy premisses, and we have already pointed out their weakness in what has gone before, so we shall not prolong discussion of them.⁴⁰⁶

⁴⁰³ *Mabāḥith*, I, 47-48.

⁴⁰⁴ *Mabāḥith*, I, 48. In the background are the arguments of the Stoics about the identity of indiscernibles in the recurrent cycles of the universe. For the Avicennan roots of these and other arguments see Shihadeh 2015b: 121-122.

⁴⁰⁵ *Mabāḥith*, I, 433. The arguments follow in 433-435.

⁴⁰⁶ *Mabāḥith*, II, 435.

There is an ambivalence here, clear from the fact that although he (apparently) rejects these arguments, he does not take the opportunity (as he does in the case of the other three hot topics) to argue for a ‘correct’ alternative. The impression is confirmed when we look more more closely. Some of the arguments do indeed seem flimsy (*wāhiya*) – or perhaps based on insecure suppositions (*wahmiyya*), but others arise out of positions that he has strongly affirmed elsewhere.

The eighth argument clearly falls into the flimsy class. The soul uses the body to achieve perfection. When this is done, the body – a disruptive influence anyway – is worn out and so it is ‘not appropriate’ (*lā yalīq*) in God’s wisdom for the soul to be returned to a body. Speculations about what is appropriate in God’s wisdom do not amount to a rigorous proof. The fourth argument uses the *falsafa* maxim that God cannot know particulars (which God would have to in order raise up particular bodies from particular parts). Rāzī has, of course, found decisive reasons for rejecting that maxim.

Other objections, however, do point to a genuine issue. Rāzī is committed to a world infinite in time, but finite in its materials, in which a large quantity of material particles flow through biological entities in the course of a lifetime.⁴⁰⁷ So which of the particles will belong to the resurrection body? The particles at the time of death, when the body was impaired or enfeebled? How else would you decide which particles to take? Given that all particles have belonged to more than one body, why should it be restored in the body of the eater rather than in the body of the eaten? And why should a piece of matter that had spent some time as heart and some time as hand be restored as one rather than the other?

⁴⁰⁷ In this text he cannot, unlike Ghazālī, appeal to the temporal finitude of the world (backward and forward). See Shihadeh’s discussion in Shihadeh 2015b: 123.

These thought-experiments are provocative, but still not compelling. More significant are two further paradoxes, one of identity and one of infinity. If we accept the Ash'arī definition of the particular human as just these particles, and identify Zayd with his particles irrespective of their organisation and qualities, this would make Zayd eternal, whether he was alive or not. That position is genuinely hard to sustain and nudges in favour of something like an immaterial soul as the sole source of continuity.

But then, if the universe is eternal, there will be infinite souls in the life of the resurrection, whose infinite bodies must be sourced from the finite materials in the sublunary world. There is the further problem that, if the afterlife is embodied, the place of reward and punishment will either be this world or another one. Rāzī is aware of infinite world theories, but, as we have seen, in this text, he accepts the arguments that there is only one physical universe, finite and eternal.⁴⁰⁸ To suppose souls re-embodied in this world is effectively reincarnation theory. To suppose a new world violates the principle that there is only one universe. Neither option is available to Rāzī.

§3.2.4.3 Hints of an Answer

If Rāzī has a way out of the problem of the nature and location of the resurrection body the clue may be in the sixth argument of the *falāsifa*, which runs:

If these individuals were restored a second time, then necessarily they would end in non-being, *because it is proved that corporeal power is finite in its action, so it is impossible for an embodied individual to endure for an infinite length of time*, so eternal happiness and misery will not be embodied at all.⁴⁰⁹

⁴⁰⁸ Rāzī defends infinite time against a thought experiment that the world might be larger than it is (*Mabāḥith* I, 665): you cannot base an argument on what is impossible. For an extended argument that what is commensurable must be finite (i.e. material objects) see *Mabāḥith*, I, 192-202, (esp. 200-202). You can of course have as many non-material objects as you like.

⁴⁰⁹ *Mabāḥith*, II, 435.

This is another instance where he has definitely ‘pointed out a weakness’ earlier. He took issue with just this maxim, that a corporeal (or embodied) power can only have a finite action, in his discussion of the nutritive power of the soul.⁴¹⁰ In context, the principle is being used to explain why the specific power of the soul to nourish the body is finite, and therefore why every body that relies on nutrition must die. But there is an inconsistency. Celestial spheres have embodied powers, but these are not finite – their soul-generated motion is eternal.

Rāzī reports Ibn Sīnā’s explanation. He suggests that the celestial soul is ‘graced with the light’ of one of the pure intellects and so becomes capable of infinite embodied actions. That prompts the question, why should not a human soul, graced with the light of a pure intellect also become capable of infinite embodied actions? Ibn Sīnā’s reply points out the difference between celestial and human bodies. The former are simple, the latter are ‘compounded of contrary natures’.

Rāzī seizes on the fact that Ibn Sīnā has effectively stated that the factor which makes death ineluctable (*ḍarūrī*) for a mortal body, is *not*, after all, that its powers are embodied and embodied powers are finite. The key factor is the specific feature of mortal, biological bodies that they are composed of opposed elements (heat and moisture). He expands on physiological arguments to show that this is indeed the case and that the capacity of the soul to sustain such a complex body must decrease with age.

So Rāzī has indeed shown that Ibn Sīnā himself does not believe the maxim used in the later argument against eternal bodily resurrection. There is at least one category of bodies, whose souls, graced with light from the pure intellect, exercise their powers eternally. Rāzī does not spell it out here, but it opens the possibility that human souls may be re-embodied in something analogous to the celestial bodies.

⁴¹⁰ *Mabāḥith*, II, 261-264.

There is even a hint of some such notion in an earlier sub-argument, suggesting how some immaterial souls might still experience rewards and punishment in the afterlife as physical pleasure and torment, through an embodied imaging faculty (a *khayāl*) embedded in a celestial sphere.⁴¹¹ The argument is rejected in context – Rāzī has already declared the imaging faculty to be a part of the non-material soul, and a material imaging faculty retains all the problems of matching infinite souls with finite matter. However, it hints both at an existing theory for locating re-embodied, eternal souls, and how, for some of them at least, the physical pleasures and torments of scripture might appear real.⁴¹²

§3.2.4.4 Rāzī on the Resurrection

We can say then that Rāzī has decisively rejected that personal survival after death aligns with the cruder accounts of bodily resurrection. He argues for the soul's survival after death but avoids committing himself to any particular account of re-embodiment. He has dropped heavy hints that it cannot be anything like our current embodiment, and lighter hints that it might be some form of celestial embodiment. The problem of infinities remains unresolved. An eternal world, implies eternal, finite matter. But eternal finite matter cannot provide bodies for the infinite souls generated in infinite time.

There are three logical resolutions open to him here. He could opt for a world finite in time. He could allow an infinite expansion of the universe. Or he could avoid the problem by joining the philosophers and accepting that the afterlife is non-corporeal. In this text, he appears reluctant to do any of these. Nevertheless, he has created just enough space to provide a *prima facie* response to the philosophers and justify accepting the scriptural belief in a resurrection body.

⁴¹¹ *Mabāḥith* II, 430-431.

⁴¹² There is a long history of such models of celestially embodied personal eschatology. They are found in Stoic-influenced classical, Jewish and Christian writings. It reappears at *Al-arbaʿīn* (II), 70. Rāzī has a lifelong interest in narratives in which souls engage with the stars see *Maṭālib* VIII, 147-196. See also *Maṭālib* I, 51-59.

§3.3 *Falsafa and kalām: The Search for common Ground*

How well might this be received by readers from his own Ash‘arī tradition? The apologia in the *I‘tiqādāt* indicates that his work seemed suspect to some. But Rāzī clearly believed that his efforts at critical appropriation of high-quality reasoning was in the spirit of his tradition. I want to conclude this chapter by focusing on four points in the *Mabāḥith* where Rāzī seems to be nudging the fair-minded reader to recognise common ground between standard *falsafa* and *kalām* positions.

First is the organisation of the text. As Hutchins has noted, the long natural sciences section of the *Mabāḥith* (Book II) is laid out according to the ten Aristotelian categories.⁴¹³ This is sandwiched between ‘General matters’, which includes metaphysical material (existence, necessity, unicity etc) analogous to elements of the first half of Ibn Sīnā’s *Ilāhiyyāt* and ‘Divinity’ which contains theological material analogous to the latter half of the *Ilāhiyyāt*.⁴¹⁴ This is a very different architecture from Ibn Sīnā’s *Shifā’*. Heidrun Eichner has analysed the distinctive structure of the *Mulakhkhaṣ* and *Mābāḥith* closely and points to a programmatic text of Rāzī’s in Persian which similarly places the discussion of the ten categories between logic and divinity, and in that discussion uses very similar divisions to those of the two larger works.⁴¹⁵

This organisation allows a creative interweaving of logic, theology and natural science throughout, particularly in the section on ‘accidents’.⁴¹⁶ The whole work is thus

⁴¹³ Hutchings 1971: 78.

⁴¹⁴ The structure of Aristotle’s *Categories*, being a taxonomy of everything we create subject-predicate expressions for, lends itself to this.

⁴¹⁵ Eichner 2009: 42-44. The Rāzī text is the *Risāla, al-Kamāliyya fī al-ḥaqā’iq al-Ilāhiyya*. For the comparative structural analysis of the *Mabāḥith* and *Mulakhkhaṣ*, see Eichner 2009: 50-60.

⁴¹⁶ As does the section on Physics in the *Mu‘tabar*. The overall layout of the section on natural sciences is according to specific Aristotelian books (*Physics, Generation and Corruption, Parts of Animals* etc.)

given a theological *telos* by its very structure, a *telos* reflected in the location of arguments with important theological ramifications throughout Book II.

But the arrangement may also serve a rhetorical, persuasive purpose. The *Mabāḥith* begins with general topics, but then unfolds as a discussion of accidents, substances and God.⁴¹⁷ These are, of course, the three names for the things-that-occupy-the-universe according to al-Ash‘arī himself. Even though Rāzī’s discussion will move a long way from Ash‘arī positions, the framework within which the discussions are presented is comfortably familiar. Then, though the language may be *falsafa*, the very structure points towards *kalām* goals. Philosophical language is being domesticated in the service of theology.

Secondly, Rāzī removes the conceptual obstacles between Ibn Sīnā’s giver of forms and a God who acts directly in time to bring substances into existence.⁴¹⁸ Cause and effect are simultaneous. An intentional agent acts on fundamentally passive matter to produce a sustained substantial change across a moment of time. Rāzī even suggests at one point that qualitative changes might be similarly punctual.⁴¹⁹ The Ash‘arī and *falsafa* models begin to draw much closer.

Thirdly, Rāzī creates a common conceptual space between the Ash‘arī language of *qudra* (capability or capacity) and the *falsafa* language of *quwwa* (power and potential). In fact, as he discusses the shades of difference between *qudra* and *quwwa*, he makes an explicit connection between the language of Ibn Sīnā and al-Ash‘arī.⁴²⁰

⁴¹⁷ For classical Ash‘arīs ‘substances’ *jawāhir* are of course, like Democritean *ousiai*, atoms. At *Mabāḥith* II, 459-464, Rāzī considers the proposition that ‘God is not a substance’ (shared for different reasons by Mutakallimūn and Plotinus). He analyses the different meanings of ‘substance’ and acknowledges that God can properly be called a substance in several of the philosophical senses.

⁴¹⁸ A feature of Ibn Sīnā’s cosmology that wins grudging approval from Ghazālī, *Incoherence*, 17, §8, 168.

⁴¹⁹ See *Mabāḥith* I, 591.

⁴²⁰ *Mabāḥith* I, 379-382.

The term *qudra* (power, ability or capacity) is associated in the *kalām* tradition primarily with the power of an intentional agent to act. In Ash‘arism in particular it is the divinely given accident through which a human agent owns (‘acquires’) their basic action. Accident and action are created simultaneously, though without any causal relation. *Quwwa*, on the other hand, is the standard translation for the key peripatetic terms *dynamis*, ‘power’ (*quwwa*), which makes something happen, and *en dunamei* ‘in potential’ (*bil-quwwa*), the state of an object before some new actualisation.

Rāzī observes that *quwwa* is the stronger word and draws attention to the semantic overlaps with *qudra*. He follows Ibn Sīnā in applying *qudra* to the dispositional state of potential in an object, which moves to actuality when all the necessary factors are in place. Shihadeh noted this dispositional use of *qudra* in his discussion of Rāzī’s theory of human action.⁴²¹ But predisposing *qudra* in the world of the *Mabāḥith* applies equally to inanimate objects. It is their dispositional power to act in certain ways when stimulated, analogous to a human capacity actualised when the will becomes fixed.

Rāzī clearly shows his concern for convergence when he considers the controversial Ash‘arī maxim that capacity is simultaneous with action.⁴²² Ibn Sīnā is dismissive, suggesting that anything like the Ash‘arī position would mean that ‘the person sitting does not have the power to stand’. Rāzī replies that a power (*quwwa*) will only be active as a principle of change when it is causally complete. Before that moment, it is latent, because it is incomplete. Capacity (*qudra*) may in fact be a quality present before and after action, however, ‘it is not the complete power to act, but it is one of the parts of the power’. Rāzī concludes:

⁴²¹ Shihadeh 2006: 15-19.

⁴²² *Mabāḥith* I, 382-383.

Since it is possible to interpret ‘the person sitting does not have the power to stand’ as the argument of that group in the manner that we have explained, what need have we to criticise them or impugn the form of their argument?

Rāzī has cleared a peripatetic space that allows classical Ash‘arīs to say what they say, without any need for dispute. Problems in the wider narrative of causality remain, but, as with the re-imagining of the giver of forms, there are now more propositions that both Peripatetics and Ash‘arīs can assent to, and there is space for creative engagement.

Finally, Rāzī draws attention to a shared principle of simultaneity in the context of the *‘illa* as a determinant or analytic cause. A *kalām* sceptical challenge is using the *falsafa* version of the principle to undermine Ibn Sīnā’s claim that causation is logically bound up with possibility, rather than origination. According to the sceptic, where two events are simultaneous, we cannot tell which is the cause of which. Therefore, neither one can be cause of the other.⁴²³ Rāzī responds with a list of counter-examples, but concludes with this *ad hominem* remark:

Indeed we can mention things that they do not dispute to get closer to our goal, namely that a cognition (*‘ilm*) is the cause (*‘illa*) of ‘being knowing’ (*‘ālim*) and that a capacity (*qudra*) [is the cause] of having power (*qādir*), according to those who teach this. For all of those exist simultaneously with their effects and are not prior to them.

Here he invokes the simultaneity of ‘analytic’ cause and effect in classical Ash‘arism ultimately in support of an Avicennan argument that links cause and effect to possibility rather than origination. Analytic Ash‘arī causality turns out to be a bridge towards the physical causality of the Peripatetics.

⁴²³ *Mabāḥith* I, 491. Thus, causes must be temporally prior to effects and *ḥudūth* rather than *imkān* is what requires causal explanation.

§3.4 Conclusion

In this chapter we have seen Rāzī presenting a broadly Avicennan picture of the natural and celestial world, both in its substructures of body, motion and time, and in the role of causation and necessity. Nevertheless, he has also defended four key doctrines against the philosophers. Rāzī's God is a choosing necessitator, not a necessary necessitator. God is no longer a Plotinian One, barred from direct contact with the physical universe it sustains. God can know and act on the material world, either directly or indirectly. The world is freely created by God and consists entirely of things that originate (even though it's always been like that). The doctrine of the resurrection body can be defended (sort of) against *falsafa* criticism. His rational defence of the orthodox positions is drawn from the philosophical material itself, often critiquing Ibn Sīnā in his own words. This has the interesting effect, however, of both correcting and affirming Ibn Sīnā at the same time.

The correction, however, does not just go one way. He also suggests (for philosophical reasons) that *kalām* positions too need to be modified. *Kalām* thinkers need to recognise that the 'necessity of the fact' that underpins both natural causation and the argument from necessity makes no difference to the question whether God is freely choosing or not. This acknowledgement, of course, is the key to integrating secondary causality with Ash'arī concerns about God's power of action.

The most striking anomaly is his apparent acceptance of the pre-eternal creation of the material world as the best explanation for the action of God's eternal will.⁴²⁴ This is so clearly stated in the first person, and so clearly supported by a network of arguments that

⁴²⁴ Foreshadowed in the notion of the sixth sort of precedence for the non-being of the world (neither precedence in time, nor precedence in causation) at *Nihāya* (I), 299.

it really does seem to be his position in this text, and I have suggested reasons why he may think he can get away with this.⁴²⁵

Finally, I have argued that throughout the *Mabāḥith* Rāzī is consciously noticing and occasionally highlighting the sort of crossover points between *falsafa* and *kalām* that we began to point out in Chapter 2. The intelligent reader is being invited to see continuity, rather than rupture, in the shift from an occasionalist account of the universe to a modified form of the Peripatetic cosmos.

In Part II of this study, I want to look more precisely at Rāzī's response to Ibn Sīnā's logic and epistemology. As we have seen again and again, the *Mabāḥith* reflects a close relationship between the logic of argument and necessitation in the world. We need to consider the detail of how he responds to the issues raised by Ghazālī's sceptical attack on that relationship in the *Tahāfut* and to examine Bilal Ibrahim's proposal that Rāzī is developing a new non-peripatetic scientific method. This will help us interpret Rāzī's project and give us a frame for evaluating his commitment to some form of secondary causation in his later works.

⁴²⁵ In the *Mulakhkhaṣ* a few years later, he questions Ibn Sīnā's connection between body, motion and time as an accident, shows interest in time as a 'now', but concludes that time is a notional, not a substantive entity *Mulakhkhaṣ* (*Physics*), 532-540. On the question whether time has a beginning (540-543) he re-presents arguments critiqued in the *Nihāya* and the *Mabāḥith* and refers to the *Nihāya* for the solutions. On the question whether the material world is eternal, he again repeats some familiar arguments and refers to the *Nihāya* for an answer (*Mulakhkhaṣ* (*Physics*), 851). The *Nihāya's* answer (non-temporal priority for the non-being of the world of originating objects) is distinctly ambiguous.

Part II

How do we know causes? Epistemology and Logic

Chapter 4 Scepticism, Necessity and epistemic Possibility

The focus for Part II is epistemology and logic. Ghazālī's attack on natural causality in *Tahāfut* Chapter 17 plays on a sceptical epistemology, drawn from the Ash'arī tradition, that eliminates necessitation from the world. Bilal Ibrahim has suggested that Rāzī is rejecting the methods of a peripatetic science based on essential definitions in favour of an empirical, phenomenological science. Each of these threatens the notion of necessity in the world crucial to the Avicennan causal account, and to the 'metalogical' argumentation, based on the ways in which conceptual and in-the-world necessity overlap, which make metaphysics possible.

In this chapter we shall focus on Rāzī's response to al Ghazālī, looking at the problems of certainty and the relationship between conceptual and real-world necessity. In chapter 5, we shall discuss Ibrahim's proposal regarding the 'structured universal', look at theological reasons for Rāzī's deviation from Avicennan epistemology and examine his treatment of Ibn Sīnā's account of acquiring definitions. In the final chapter of the section, we shall look at Rāzī's elucidation of Ibn Sīnā on induction, empirical reasoning and *ḥads* – insight, or (as Gutas suggests) 'correct guessing' – and evaluate the place of real-world necessity, and thus the possibility of secondary causes, within this framework.

§4.1 The Horse in the Library and the Problem of Certainty

We saw in §2.3.1 that Ghazālī's attack on several of Ibn Sīnā's doctrine in his *Tahāfut*, though carried out in the spirit of al-Ash'arī, need not commit him to the physics (or metaphysics) of classical *kalām*. The point of the argument in *Tahāfut* 17, as Goodman and others have suggested, is to challenge the *necessity* of causal processes in nature, not the causal processes themselves.⁴²⁶ For it is necessity that appears to impinge on God's freedom

⁴²⁶ 'Ghazālī concurs with the Philosophers that strictly the term necessity has meaning only in its logical sense, but he denies that causal relations have necessity in that sense', Goodman 1978: 85. See Perler and Rudolph 2000: 83.

to do whatever God wants and to limit his freedom to work miracles on behalf of the prophets. The Rāzī of the *Mabāḥith* and the *Mulakkhkhaṣ*, however, links causality with necessity like Ibn Sīnā, and argues that divine freedom is compatible with causal necessitation in the world.⁴²⁷ How does he respond to Ghazālī?

In order to undermine real-world necessity, Ghazālī presents a familiar sceptical challenge. That challenge, however, creates a new problem for the possibility of knowledge itself, which he also has to answer. He opens the discussion by establishing a gulf between the epistemologically necessary (*ḍarūri*) and concomitant events in the world. This attacks a central feature of the Avicennan narrative, that the determinants (*ʿilal*) of logic map onto the determinants of nature and that epistemology and metaphysics are intimately bound by a fluid ‘metalogical’ necessity.⁴²⁸

So, we do not observe the fire necessitating the burning of the cotton. We only observe concomitant events: the fire brought close to the cotton; the cotton burning; the blackened remains. Any necessary (*ḍarūri*) connection between entities must be analytical (if I go for a walk, then necessarily this animal goes for a walk). But in the case of the proximity of the fire and the burning of the cotton ‘neither the affirmation of the one entails the affirmation of the other nor the negation of the one entails the negation of the other’.⁴²⁹ Thus, neither observation nor logic tell me anything about the agency of the fire. The fire could be there and the cotton not burn or the cotton could burn and the fire not be there without any contradiction. We can hear echoes of al-Ash‘arī’s rolling stone.⁴³⁰

⁴²⁷ See *Mabāḥith* II, 507-508.

⁴²⁸ See Strobino 2016a: 428 fn7 for Ibn Sīnā’s commitment to the view that ‘what is caused is known with certainty only through its cause is also systematically connected to his metaphysical necessitarianism and that whatever is necessary through another (and merely possible in itself) becomes necessarily only in virtue of its cause.’

⁴²⁹ Ghazālī, *Incoherence*, 17, §§ 1-7, 166-168.

⁴³⁰ Ibn Fūrak, *Mujarrad*, 132-133, see above.

It is when Ghazālī exploits this to support an Ash‘arī explanation of natural events that the problem for everyday human knowledge becomes apparent.⁴³¹ God can make the cotton burn or not as God wills. However, if I know that there are no natural causes, and if I know that God can do whatever God wills, then from a known event A, I must expect any outcome from A to Z.⁴³² Once I walk out of the door of my house in the morning, I cannot be sure of what I will find there when I return in the evening:

All I know is that I have left a book in the house, which is perhaps now a horse that has defiled the library with its urine and its dung, and that I have left in the house a jar of water, which may well have turned into an apple tree. For God is capable of everything and it is not necessary for the horse to be created from the sperm nor the tree to be created from the seed—indeed it is not necessary for either of the two to be created from anything.⁴³³

For Ghazālī’s philosophical adversary these *adunata* are repugnant contradictions (*maḥālāt shanī‘a*). This is nothing like what we actually see happening in the world around us.⁴³⁴ Ghazālī offers two responses, one Ash‘arī-friendly, one Peripatetic-friendly.⁴³⁵ We will focus just on the first, because it is the stronger claim and genuinely attempts to confine necessity to the epistemological realm and away from world events.

Ghazālī accepts there is a problem. Unless you *know* to the contrary, all possibilities (including the horse) are equally likely. His reply taps into the Ash‘arī doctrine that

⁴³¹ Ghazālī, *Incoherence*, 17, § 11, 169.

⁴³² Ghazālī, *Incoherence* 17, §13-15, 169-70.

⁴³³ Ghazālī, *Incoherence* 17, §13, 170.

⁴³⁴ In the ancient discussions, versions of such *adunata*, (though not quite as dramatic as the horse in the library) appear in Lucretius (*De Rerum*, I, 160 ff) and Epicurus (*Ad Herodotum* §§38-39) as part of the discussion ‘nothing can come of nothing’. In Aristotle (e.g. *Physics* II, 199b7-17) in the discussion of nature versus chance. In Sextus, (*Against the Physicists* I, 195) as the physicists’ response to the denial of causality.

⁴³⁵ The second is a compromise with the Peripatetics using the notion of the ‘hidden cause’. The miracle is not a miracle because it has no intermediate cause, but because we do not know what that cause is. This downgrades ‘possibility’ from a fact about world events to epistemic uncertainty.

knowledge is *both* directly created by God *and* acquired by experience and induction. God creates a knowledge in us ‘that he did not enact these [weird] possibilities’. However, human knowledge that one set of events (*umūr*) will have taken place rather than another does not make them necessary. They remain possible and can occur or not-occur. He now adds a quasi-naturalistic account of the acquisition of such ‘expectation’ knowledge: We become habituated to seeing specific kinds of event unfold in specific ways until it becomes unshakeably implanted in our minds.

God plants knowledge by working through the regular patterns of events, rather than directly. That knowledge is the reason why we do not spend the day in the office anxiously wondering what we shall find in the library when we get back, why we confidently expect both bits of cotton to burn and why we are so rarely disappointed. We live with the logical possibility of the unexpected, but on a daily basis, we are confident that business will be as usual because God, one way and another has given us knowledge that only the usual alternative will be fulfilled.

A similar account of knowledge-acquisition reappears at the end of the chapter, to explain how we know that other human beings are agents, rather than automata. We introspect, notice the difference in ourselves between voluntary and involuntary movement, and deduce from the similarly ordered movements of another person that they too have power over their actions (*qudra*). We thus have knowledge acquired by analogy. But again, the knowledge of a given fact does not imply the necessity of that fact:

For these are cognitions which God creates according to the habitual course [of events], by which we know the existence of one of the two possible alternatives though the impossibility of the other is not thereby demonstrated (*yatabayyan*), as has been previously said.⁴³⁷

⁴³⁷ Ghazālī, *Incoherence*, 17, §§ 38-39, 176-177, I have adapted the translation for clarity.

This prompts the question, what happens to such knowledge when we encounter a miracle? Al Ghazālī replies that as long as ‘the customary’ is suspended ‘these cognitions... slip from... hearts and [God] does not create them’.⁴³⁸ Our knowledge thus has no effect on the possibilities open to God. For any given moment, God knows beforehand what possibilities he is or is not going to make actual, and creates in us the appropriate knowledge at that time.

From the point of view of God, this seems unproblematic. At breakfast God can give us a cognition that the book will be on the table at tea-time, and at tea-time God can give us a cognition that it has become a horse. Here we are considering knowledge as a subjective phenomenon in the human, and we can think of such knowledge as confident belief. But two questions arise. Firstly, can the first cognition be knowledge if it does not relate to reality? Secondly, how can the inductive process that led to the acquisition of the first cognition be valid, if that cognition is obliged to slip out of the room at tea-time?

The answer to both may lie in a modulation of the ‘argument from ignorance’, a principle favoured by some *kalām* authors, though rejected by al-Juwaynī and not something that his student Ghazālī would actually be likely to take seriously.⁴³⁹ At the fateful breakfast time, the evidence of ten thousand other days is that the book on the table in the morning will not have turned into a horse by the evening. By the argument from ignorance, the absence of self-evidence and sensory evidence for a thing indicates the absence of that thing.⁴⁴⁰ The breakfast-time cognition is thus sound. At tea-time, of course, new evidence has come to light. The tea-time cognition is equally sound, though based now on a direct perception, rather than a form of induction, and the previous cognition is

⁴³⁸ Ghazālī, *Incoherence*, 17, §§ 17, 171.

⁴³⁹ See Shihadeh 2013c: 172.

⁴⁴⁰ Shihadeh 2013c: 177. We shall see below that what is and is not self-evident (*badīhī*) or necessary (*ḍarūrī*) is a contested issue.

displaced, though not contradicted, because there was never a demonstration (*lā yatabayyanu*) for its impossibility in the first place.

The argument from ignorance is one of the modes of *kalām* argument explicitly rejected by Rāzī in the *Nihāya* and if this is what lies behind Ghazālī's Ash'arī-friendly argument, it is unlikely to be what he really thinks either.⁴⁴¹ However, this first solution to the horse-in-the-library problem raises a number of genuine epistemological questions that have to be settled before there can be scientific knowledge of causes in the world.

First, is knowledge just a subjective state of the knower? The idea is crucial to the Ash'arī double account of knowledge as a creation of God and an acquisition of the human. However, it is not completely alien to the peripatetic world. Ibn Sīnā describes knowledge as an accidental quality of a human, and Rāzī files his discussion of epistemology in the *Mabāḥith* accordingly, under the 'quality' heading in the accidents. But how do we then distinguish between the subjective experience of complete confidence in a belief, and the objective certainty of the proposition believed? My subjective assurance at breakfast turns out at tea-time not to have been an objective certainty. In fact, Rāzī (fairly) consistently distinguishes between complete assurance (*jazm*) and what is actually certain (*yaqīn*). What then makes a proposition *certain*, rather than something we're just *confident* about?

Second, how do we make sense of induction? In a sense, the argument from ignorance solves the problem, by legitimating conclusions based on finite evidence. But how can a finite set of particular cases give you genuine knowledge that this is how it is in all cases? And if it can't, how can any of our everyday assumptions about books, horses and libraries be true – let alone our sciences of medicine, physics and theology? This ties in with the overarching question of the relation between the analytic necessity of our proofs and demonstrations and the reliability of patterns of events in the real world.

⁴⁴¹ See, Shihadeh 2005: 165. *Nihāya* I, 124.

Finally, what exactly is the rôle of God in all of this? Ghazālī is aware of an area of epistemological overlap between Avicennan and Ash‘arī accounts of knowledge from above. Ash‘arī cognitions are accidents directly created by God in the human. But Ibn Sīnā too requires a higher agent to existentiate knowledge of universals in the human intellect, as this passage from Ghazālī’s rendition of his text in the *Maqāsid al-Falāsifa* shows:⁴⁴²

From first youth, the soul is able to make a judgment about a shadowy form, and when the soul’s preparation (*isti‘dād*) is complete then the light of the agent intellect radiates upon the forms present in the imagination, and so from them there arise in the soul the universal absolutes, so that it grasps from the form of Zayd the form of the universal human, and from the form of a tree, the form of the universal tree.

We have seen that Rāzī criticises Ibn Sīnā’s account of the mechanisms of knowledge, but we also know that he is just as interested in ultimate divine agency. How he works that out will become apparent in the course of Part III.⁴⁴³

Before we return to this set of questions, we want to look at how Rāzī answers Ghazālī’s initial challenge to necessity in the world.

§4.2 Necessity in the World and epistemic Necessity.

Rāzī’s critical commentary on the Logic of Ibn Sīnā’s *Ishārāt* will offer insight into his own views about the relationship between necessity in argument and necessity in the world. But it is useful at the outset to note Richard Sorabji’s taxonomy of meanings for

⁴⁴² Ghazālī, *Maqāsid al-Falāsifa*, Chapter 5, 371-373; extract at 372. See also, Rāzī, *Sharḥ al-Ishārāt* (Logic), 261, universal knowledge provided by the principle of emanation (*mabḍā’ al-fayyāḍ*).

⁴⁴³ See §3.2.2 above (non-material souls perceive particulars) *Mabāḥith* 331–344; also *Sharḥ* (Physics), 244 ff (critique of Ibn Sīnā’s apparatus), especially 280 (alternative sources of knowledge to the agent intellect).

‘necessity’ found in the Aristotelian corpus.⁴⁴⁴ Most of these we have already encountered at least implicitly.

Sorabji lists: (1) essential necessity – take away one of the properties of an essence and it ceases to be that essence. (2) Non-contradiction – you cannot be doing two mutually exclusive things at the same time. (3) Relative or conditional necessity of implication: given $P > Q$ and P then necessarily Q . (4) Hypothetical necessity dependent upon purpose: if you want to make an omelette, you have to break some eggs. (5) Irrevocability: the present and the past cannot be otherwise. (6) Natural necessity (the movement of earth to the centre) and (7) unnatural necessity or forced movement (throwing a stone upwards). (8) The necessity of always or everlasting subjects. (9) Necessity of predication as constant concomitance + internal connection. (10) Necessity of actions performed under duress.

In analysing the *Mabāḥith* we have spent a lot of time looking at (2), (4), (5) and (6), with the necessity of the fact, dependent on the law of non-contradiction, and hypothetical necessity as the ultimate ground of all inner-world causation. We have explored cases of (9), noting the common ground with the Ash‘arī metalogical ‘*illa* from accident to phenomenal property. But we have not focused on the other members of the set that go with it, (1) essential or definitional necessity and (3) logical necessity of inference in an argument. It is the relationship between the ‘world’ set of necessities (4, 5, 6, 7, 8, 10) and the ‘argument’ set of necessities (1, 2, 3, 9) that we want to explore in more detail here.

The Arabic word for ‘necessary’ used by Ghazālī at the beginning of *Tahāfut* 17 is *ḍarūrī*. As Wisnovsky points out, this is the favoured *kalām* term for things that are epistemically necessary, that, as it were, force themselves upon us.⁴⁴⁵ They comprise the analytic (‘what has a beginning is not eternal’ or ‘the knower is alive’), self-evident (I know)

⁴⁴⁴ Sorabji 1980: 222 ff.

⁴⁴⁵ Wisnovsky 2003: 238. See also Shihadeh 2013c: 174. Shihadeh often prefers the translation ‘immediate’ for *ḍarūrī* to highlight the *kalām* usage.

and sensory experience (this tastes sweet). It is an elastic concept. Van Ess notes that the correlated term *badīhī* (self-evident) is less restricted than peripatetic axioms in traditional *kalām* use, and stretches to everyday subjective certainties.⁴⁴⁶ This makes such ‘necessary’ claims both vulnerable to the horse-in-the-library paradox and critical for responding to it.

Thus, we find *ḍarūrī* is the word characteristically used by Ibn Sīnā to describe the ‘necessary’ mode in the premise of an argument, even though when he talks about necessitation in nature or in deduction, he will tend to use forms of *wajaba* or *lazama*. Rāzī generally follows him in reserving *ḍarūrī* for the epistemological or definitional necessity, corresponding to *kalām* self-evident necessity, and *yūjib* and *yalzam min* for contexts of deduction and natural necessitation. Loosely, this corresponds to the ‘argument’ set of necessities from Sorabji’s list.

Necessity is, according to Ibn Sīnā, one of the sets of modes (necessary, possible and impossible) that modify the relationship between a subject and its predicate both materially and in discourse.⁴⁴⁷ According to Rāzī’s discussion of his position, the language of *mādda* (matter) and *jiha* (mode) enables logicians to distinguish what goes on in concrete reality from what goes on in conceptual arguments:

The point of structuring judgments and arrangements of syllogisms out of them is to produce conclusions, and these are not obtained from the matters of fact and the

⁴⁴⁶ Van Ess 1991-7 (III): 269.

⁴⁴⁷ *Sharḥ* (Logic), 178 ff. The logical rules described by Ibn Sīnā and Rāzī governing the scope of the modal operators ‘necessary’ and ‘possible’ and their implications are recognisably similar to today’s rules. There is a less familiar distinction between a ‘more general’ possibility-of-existence which governs things that can exist and things that necessarily exist, and a ‘specific’ possibility-of-existence: possibly and possibly not. In spite of Saul Kripke (*Naming and Necessity*) many modern analytic philosophers are still allergic to any necessity beyond the analytic. Again, in modern logic, rules of implication are defined by truth-tables independent of predicates. The ancient rules are inseparable from real-world concerns. Their entailment relations connecting predicates assume beliefs about underlying relationships in reality. ‘Modal’, however, also includes ‘always’/‘not always’, ‘with a condition’/‘without a condition’, ‘at a particular time’/‘not at a particular time’. See *Sharḥ* (logic), 181ff.

relationship that is actual to the premisses in themselves, but from the relationship which the mind supposes to be the actual case for them.⁴⁴⁸

Here Rāzī may be picking out an important aspect of Ibn Sīnā’s theory highlighted by Strobino. When discussing necessitation in argument (*darūriyyāt*), Ibn Sīnā highlights the priority of necessity under a description (*waṣfī*) over necessity of the thing in itself (*dhātī*) for scientific demonstrations (as opposed to ordinary syllogisms).⁴⁴⁹ As Strobino observes elsewhere, for Ibn Sīnā, ‘all scientific truths must ultimately express essential connections between the terms... the latter must be reflected without exception by definitional links.’⁴⁵⁰ We will come to the thorny problem of essential descriptions in the next chapter, but the point here is that conceptual necessity is foundational for providing explanatory accounts of the real world. The ‘modes’ – provided at the conceptual level are thus important in the explanatory process.

Rāzī points out that judgments of the intellect can correlate or fail to correlate with things in the world (*ḥukm al-‘aql qad yakūn muṭābiqan li-l-khārij wa qad lā yakūn*). However, this distinction is not about the difference between valid arguments and true arguments. The conceptual mode may indeed yield truth, yet not correlate with concrete reality. A proposition like ‘a human is necessarily not a stone’ is conceptually true, but being ‘not-a-stone’ is never instantiated, so it is never a necessary material fact. But in the real world stones exist and humans exist. So it is the impossibility of the stone’s being a human that provides the real-world ‘matter’ to which the conceptual ‘necessary’ proposition relates. We could also apply Strobino’s analysis and suggest that the conceptual necessary truth, which flows from the concept of human, *explains* the brute fact of the real-world impossibility.

⁴⁴⁸ *Sharḥ* (Logic), 179.

⁴⁴⁹ Strobino (2015a): 346-347. Perhaps: the morning star, qua morning star necessarily (always) rises in the East; the morning star qua Venus rises in the East at certain specific times.

⁴⁵⁰ Strobino (2016b): 263.

We can note that the temporal modes (always, at least once, at specific times) anchor some general propositions more closely to real states of affairs in the world and thus pave the way for a more precise assignment of necessity and possibility to events in the natural order. Any conceptual ‘necessity’ that might qualify bare (*muṭlaq*) propositions like ‘all stars rise in the east and set in the west’ is not fully justified until such propositions are related to actual existents by an appropriate set of additional qualifiers (temporal *jihāt*): any given star will always rise at one time and set at another.⁴⁵¹ Now we have a fully articulated necessary predication claim rooted in the regularities of the real world, and paving the way for explanations of why this *has to be* so, once we have examined the nature of the different stars.

Rāzī also explicates Ibn Sīnā’s gradations of the relationship (Sorabji’s 8) between ‘always’ and ‘necessary’ (*wājib*).⁴⁵² Strobino has highlighted the role of that account of the alethic and temporal modes from this section of the *Ishārāt* in solving a specific logical problem in the transmission of necessity from premisses to conclusion, via a non-necessary minor premiss.⁴⁵³ Street describes how Rāzī does formulate his own response to that and related issues.⁴⁵⁴ However, it is worth noting that the issue has all-important theological ramifications.

Ibn Sīnā identifies four classes of ‘necessary’ predication, each of which correlates differently with ‘always’ predication in the real world. There is unconditional necessary predication (God exists), and three kinds of conditional necessary predication: as long as the subject exists (the human is a body), as long as the subject bears a relevant property (the mover changes), at some time (eclipses will always occur on these dates; humans will

⁴⁵¹ *Sharḥ al-Ishārāt* (Logic), 180 ff.

⁴⁵² *Sharḥ al-Ishārāt* (Logic), 187 ff.

⁴⁵³ Strobino 2015a: 341-343. How can the necessary premiss ‘all walkers are animals’ and the existential premiss, ‘all humans are walkers’ yield the necessary truth ‘all human beings are animals’?

⁴⁵⁴ Street 2004: 72.

always breathe at some time). This fourfold classification makes clear that descriptive necessity correlates with descriptive endurance, not real-world endurance. Similarly, real world endurance need not correlate with descriptive necessity (a person may be white-skinned as long as they live, but they are not necessarily so).⁴⁵⁵

This classification explicitly breaks the link between the explanatory necessity of argument and the actual eternity of objects in the world. But that logical position provides a basis for answering the long-running theological questions of the status of God's attributes and of the eternity of the world. That may not be at the forefront of Ibn Sīnā's concerns at this point in the *Ishārāt*, but Rāzī's amplifying commentary suggests that he is more than aware of the link.

While Ibn Sīnā simply refers to the logical necessity (*ḍarūriyya*) of God's existence as an example of the unrestrictedly eternal, Rāzī spells this out with the distinction between the absolutely necessary (*wājib al-wujūd*) and the conditionally necessary (*wājib bi-shart*).⁴⁵⁶ The absolutely necessary is that whose essence is sufficient for its occurrence. 'Anything like that is eternally existent, has never not existed and will not cease to exist.' Anything that is constantly renewed (*mutajaddadan*) is dependent on the presence of a further physical cause (*sabab*) or an appropriate time etc. Such a being is necessary-given-that-condition – or necessary-through-another. Rāzī amplifies the logical point by spelling out the metalogical basis of the argument for the existence of God.

Then, after teasing out the logical implications of Ibn Sīnā's classifications, he acknowledges that whether something that is eternal can be non-necessary (glided over by Ibn Sīnā) is something that needs specific investigation.⁴⁵⁷ He considers the trivial examples that are agreed on (particular humans preserve their skin colour as long as they

⁴⁵⁵ See Strobino's detailed analysis in 2016b: 187-200.

⁴⁵⁶ *Sharḥ* (Logic), 182.

⁴⁵⁷ *Sharḥ* (Logic), 187.

live). Logicians may be reluctant to make claims about universals (souls, intellects, stars), but Rāzī states his position clearly. Necessary (*wujūb*) and eternal mean two different things. For a thing to be necessary is for its non-existence to be impossible. This will be either because it is necessary in itself, or because it becomes necessary through another. Thus, there are two senses of necessary, a more general one which includes both of these, and a more specific one, which is just ‘necessary through itself’.

He turns to the theologically critical case of the universals: ‘there is no doubt that endurance in the case of universals exists without that (specific) necessity’. This is a conceptual point: add together the unique species of each individual and their eternal existence, and nothing implies that they are necessary of themselves. It is only in the sense of ‘general’ necessity (which includes ‘necessary through another’) that eternally existing things *can* be considered necessary.⁴⁵⁹

The worlds of concept and concrete reality overlap in a necessity of the fact (2, 5). In this general sense, souls and stars are not so special. *Every* existent predicate bundle is necessary as long as it exists. Necessity-by-another applies just as much to the endurance of particular, accidental existents as to stars. Everything that exists only does so ‘on condition that it has first become necessary of existence’.⁴⁶⁰

Even if writing is not necessary (*yajib*) for the human at any particular time or according to any condition, yet it is necessary for him (*darūri*) as long as he is writing.⁴⁶¹

If a fact is a fact, it cannot not-be a fact. A conceptual truth becomes a matter of concrete fact. Strobino, like Gutas, recognises that Ibn Sīnā’s account of necessity ‘bridges the

⁴⁵⁹ *Sharḥ al-Ishārāt* (Logic), 187. Necessity *kayfa mā kāna*; cf *Mulakkhkhaṣ* (Logic), 76.

⁴⁶⁰ *Sharḥ al-Ishārāt* (Logic), 188.

⁴⁶¹ *Sharḥ* (Logic), 194.

theory of demonstration and the theory of predicables, suggesting Avicenna has a unified understanding of certain basic logical and metaphysical relations.⁴⁶² Rāzī reveals a very similar understanding as he equates this ‘necessity of the fact’ with the conditional necessity of everything in the universe and the unconditional necessity of the self-instantiating essence.⁴⁶³ By so doing, he decisively rejects Ghazālī’s attempt to limit necessity to the realm of concept alone.

The observable world consists of existent predicate bundles, all of which, whether enduring or not, are in a series of dependency relationships that necessitate their existence. Those real dependency relationships are mirrored in the relationships of necessary predication that feature in our propositions. Just as one property in a subject may necessitate another in the real world, so too one predicate necessitates another in concept. The words *ḍarūrī* and *yajib* straddle the worlds of physical reality and logical argument. This is what eventually makes it possible to encode the discoveries of empirical reasoning in syllogisms with real explanatory force.

But, of course, arguments are only as good as their premisses and none of the above gives us science unless we can be confident that we have correctly identified *ḍarūriyyāt*, the objects of epistemic necessity, in our world of knowledge. How does Rāzī respond to Ghazālī’s challenge to such certainty?

⁴⁶² Strobino 2016b: 184.

⁴⁶³ See Bertolacci 2008: 50 for Ibn Sinā’s equation of general necessity with assurance of existence.

§4.3 Certainty and ‘self-evident’ Truth

Rāzī presents a relatively straightforward structure for acquiring certain knowledge through reflection (*naẓariyya*) in the *Nihāya* and *the Mulakhkhaṣ*. We begin with conceptualisation (*taṣawwur*) of real-essences (*ḥaqīqāt*) and move to propositional claims, or assents, (*taṣdīqāt*) that combine them in asserting the existence of a subject-predicate bundle.⁴⁶⁴ Where conceptualisations are given necessarily (*ḍarūriyyatan*) we are led to necessary affirmations. Thus simply conceptualising “2”, “1” and “½” in “ $2 \times \frac{1}{2} = 1$ ” leads ineluctably to affirming its truth.⁴⁶⁵ Out of such analytically necessary propositions we construct reflective arguments, following the rules of logic, that allow us to demonstrate complex truth claims about the world.⁴⁶⁶ This is acquired knowledge. Both science and the proofs of the existence of God are therefore ultimately dependent on concepts, propositions and rules that are known necessarily, the *ḍarūriyyāt* introduced above.

If our propositions and explanations are to be sound, then our conceptualisation of things has to grasp their real-essence. Rāzī is aligned with Aristotle in holding that a complex is defined in terms of its simple parts, but differs on the issue of knowing the essence of a simple. Aristotle does not think that scientific knowledge is possible on the basis of sense-experience because it does not yield universals, and defining the essence of something is propositional, closely bound up with explaining its cause.⁴⁶⁷ Rāzī in contrast holds a phenomenological position, which he considers distinctive to *kalām vis-à-vis falsafa*. Our knowledge of the universals heat and sound as objects of sense is primary and cannot

⁴⁶⁴ *Nihāya* I, 103, cf *Mulakhkhaṣ* (logic), 7 ff (conceptualisation), 62 ff (assertion) .

⁴⁶⁵ *Nihāya* I, 175; cf *Mulakhkhaṣ* (logic), 81.

⁴⁶⁶ *Nihāya* I, 179.

⁴⁶⁷ For Rāzī on simples and complexes, see *Nihāya* I, 105. For essences as definable universals, and sense experience see Aristotle *Posterior Analytics*, I, §33, 157; II, §3, 181 ‘the essence is always universal and affirmative’; II, §10, 207-209 (explanation in terms of cause). However more ambiguously *Posterior Analytics* 100a17-100b1, 258: we perceive the particular, but perception (*aesthesis*) is of the universal.

be explained in terms of anything more basic.⁴⁶⁸ Knowledge itself, as we saw in the *Mabāḥith*, is beyond definition as the primary awareness in which the act of definition takes place.⁴⁶⁹

However, what it means for universals to be ‘self-evident’ (*badīhī*) or ‘ineluctable’ (*ḍarūri*) in the world accessible to the senses is elastic. It is hard to fix the boundary between the immediate perception of a direct object of sense (a colour patch) and the immediate perception of a complex whole (a white cow), which clearly contains much more information. That elasticity is useful, because it means we can generate more interesting acquired propositions from a larger set of substantive propositions. However, when stretched too far, it also makes them vulnerable to a number of sceptical critiques.

One obvious one is that since those who appeal to *ḍarūriyyāt* disagree, there cannot actually be any such things.⁴⁷⁰ However, it is another sceptical challenge that concerns us here. As the *Nihāya* phrases it, ‘our assurance (*jazm*) about self-evident truths is no stronger than our assurance about the evidence of the senses, but we cannot rely on assurance about sense-evidence.’⁴⁷¹ Rāzī directly confronts the problems of Ghazālī’s unpredictable library.

We have an ineluctable cognition (*‘ilm ḍarūri*) that the Zayd we see in the morning is the same as the Zayd we meet in the evening. However, our assurance is unsound because, as Muslims believe, God could cause him to go out of existence and created a second, identical Zayd in the evening. Rāzī’s household utensils turn into learned scholars rather than truculent quadrupeds. He points out significantly that this problem is not actually solved by an appeal to secondary causality (as Ghazālī’s presentation implies). The

⁴⁶⁸ *Nihāya* I, 116-119. Though note alongside this, a more positive valuation of such philosophical explanatory accounts at *Mabāḥith* I, 10, 306; cf *Mulakkhkhaṣ* (Logic), 57-58.

⁴⁶⁹ *Mabāḥith*, I, 331. Other candidates for primary concepts are existence, necessity, possibility, unity and plurality, knowledge of the self, see *Nihāyat* 120-121.

⁴⁷⁰ Rāzī lists 14 such contentious examples at *Nihāya* I, 157-160. They include the Mu‘tazilī claim that the goodness of truth and beneficence is self-evident knowledge, and the philosophical claim that bodies endure.

⁴⁷¹ *Nihāya* I, 166.

epistemological challenge affects Mu‘tazilīs and Peripatetics just as much as Ash‘arīs.⁴⁷²

Then there are the positive examples. People in a fever and the prophets feel certain that their visions are in the real world. Rain drops look like continuous lines. Boats on a waveless ocean appear not to be moving.⁴⁷³

Since, then, our subjective assurance (*jazm*) about what we see does not yield objective certainty (*yaqīn*), our subjective assurance about ‘primary’ cognitions (like the law of bivalence) is equally fragile. There are therefore no foundations for rational argument. Rāzī considers some more extreme forms of sceptical position (including a Parmenidean denial of existents) before framing a general response to such sceptics (whom he labels ‘sophists’). His case rests on the infallibility of immediate sense-perceptions. Can they tell the difference between passing between fire and water, or a blow and its absence, or between their doctrine and that of their opponents? For those sufficiently shameless to deny this he recommends tormenting them.⁴⁷⁴

There are three things that we can note immediately that contrast with Ghazālī’s treatment of the comparable material in the *Tahāfut*. The first is the clear distinction between the subjective *jazm* (assurance - fallible) and the objective *yaqīn* (certain - veridical). The second is that Rāzī makes clear, as Ghazālī does not, that the philosophers’ commitment to secondary causes does not save them the same epistemic uncertainty as the occasionalists. A hidden cause in the stars may spring surprises. Thirdly, Rāzī makes the point that the principle of bivalence – foundational to disjunctive argument (and with it conceptual and concrete necessity) – gains its force not from the intelligible realm, but from the infallible discrimination of sense-experience.

⁴⁷² Compare *Muḥaṣṣal* (110–111).

⁴⁷³ *Nihāya* I, 166–169.

⁴⁷⁴ Cf *Nihāya* I, 173. This extreme form of philosophical persuasion is borrowed from Ibn Sīnā in *Metaphysics*, I, 8, §12, 43.

In the *Nihāya*, Rāzī solves the paradox of disagreement about ‘self-evident’ truths by setting peripatetic restrictions. Only genuinely analytic contexts count, where conceiving the essence of the subject entails conceiving the essence of the attribute.⁴⁷⁵ In other texts (the *Maṭālib* for instance) he will allow a wider scope than this. Immediately, however, the question of the uncertainties about Zayd and the kitchenware, turns out to be irrelevant to the status of sense-experience, which remains infallible. The belief about the continuance of Zayd and the saucepans is not an object of such experience. The immediate threat to ‘primary knowledge’ is disarmed but the problem of our everyday certainties is left hanging.

The *Muḥaṣṣal* does, at one point, offer a causal account for why we have subjective assurance (*jazm*), and may shed light on what Ghazālī was articulating in terms of cognition (*‘ilm*). It involves, however, a different understanding from the *Tahāfut* about the regularities (*‘ādāt*) that yield knowledge (or certainty). The *Tahāfut* speaks of God’s creating knowledge in us through the *objective* regularities that we observe.⁴⁷⁶ The knowledge is then sound, insofar as those observed regularities point to the existence of one of the disjunctions of the possible (without demonstrating that the other is impossible). Rāzī, however, explores the genesis of subjective certainty, not knowledge.

Different bodily states and customs can bring about ‘an assurance where assurance is not necessitated (*lā yūjib al-jazm bihi*).⁴⁷⁷ Rāzī gives examples of *‘ādāt* and *ilf* as subjective habit, rather than objective regularities. People who spend their whole lives with Peripatetics are sure that what the Peripatetics say is true. Those who spend their lives with Mutakallimūn find the opposite certainty. Jews and Muslims are equally confident

⁴⁷⁵ *Nihāya* I, 173.

⁴⁷⁶ Marmura, *The Incoherence of the Philosophers*, 17, §39, 177.

⁴⁷⁷ *Muḥaṣṣal*, 116-117.

that they are correct in their debates.⁴⁷⁸ The rhetorical conclusion, ‘And that can only be because of habits’ underlines this.⁴⁷⁹ If this is what it is to acquire *jazm*, then what we are convinced of only co-incidentally maps onto a knowledge that connects with reality. The Ash‘arī is confident that God will not turn his copy of the *Luma‘* into a horse and the Peripatetic can return home secure that no wandering star will force her to discuss logic around the dinner table, but both have to acknowledge that (for different reasons) they may be wrong.

§4.4 Conclusion: Rāzī and Scepticism

We have followed one strand of Ghazālī’s argument in the *Tahāfut*, in which he deploys a sober sceptical argument to undermine accounts of natural causation that might prevent miracles *a priori*. This strand attempts to drive a wedge between epistemic necessity and necessity in the world. Using Sorabji’s classification, we have seen how Rāzī’s Avicennan commitment to an interweaving of epistemic and inner-world necessity resists any such attempt.

Ghazālī’s move also raises wild sceptical challenges to our everyday certainties that threaten the whole project of rational argument. Rāzī offers an idealised account of a reflective progression from self-evident, primary truths and infallible sense-perceptions by the rules of argument to new and certain knowledge. His response to the wild sceptical challenges is to reverse Ghazālī’s position. Ghazālī struggled to affirm the soundness of knowledge in a world in which everything is *really* possible. Rāzī instead accepts the limitations of subjective certainty. When we say something may or may not happen, that is an *epistemic* possibility not a real one. This is indeed the fall-back position of Ghazālī in the second, concessionary strand of his argument. Whatever our belief states, whatever

⁴⁷⁸ *Muḥaṣṣal*, 116-117.

⁴⁷⁹ *Muḥaṣṣal*, 116-117.

happens must be so. Rāzī is clearly not tempted by hard scepticism and is clearly committed to the possibility of the reasoned acquisition of new knowledge, even as he allows for epistemic uncertainty about the world.

This leaves us with the last two questions raised by Ghazālī's challenge. How do we acquire knowledge of universals, and what is the rôle of divine agency in such a process? This will be the subject of the next two chapters. We will begin by exploring the issue through the lens of Bilal Ibrahim's thought-provoking contributions on Rāzī's scientific method.

Chapter 5 Knowing Universals and the Problem of Definition

Rāzī is committed to the Peripatetic tradition of logic, in which the necessity of understanding and argument interweaves with necessity in the world. Both the argument for the necessary existent, and the possibility of discovering causal structures in the world, depend on certain ineluctable cognitions that are simply a given of human experience. In the ‘General Matters’ section of the *Mabāḥith* he identifies existence, possibility, necessity, knowledge, and (with existence) the laws of non-contradiction and bivalence, alongside the infallible experiences of inner and outer awareness, this colour patch, this sound, this pain, this awareness of ‘I’.

Some of these constitute a direct, phenomenal knowledge of essences (e.g. heat and sound) more basic than the explanatory definitions of philosophy. Rāzī himself notes this attention to phenomena or the immediate elements of experience as something that distinguishes the *kalām* from the *falsafa* tradition. Our question in this chapter is how that affects simple definitions, the building blocks of our knowledge of universals that allow us to construct demonstrative proofs and provide explanatory, scientific accounts of the world. The answer will help us evaluate the level of epistemic certainty Rāzī believes we can reach about the world, and where he lies on the flexible border between sober scepticism and critical realism.

The first part of this chapter will discuss Bilal Ibrahim’s interpretation of Rāzī’s epistemology and theory of science, which pays attention to just these concerns, and note Fedor Benevich’s related analysis of Rāzī, Surhrawardī and Abū l-Barakāt on definition.⁴⁸⁰ The second part will look more closely at Rāzī’s account of essential definitions of simple entities on the basis of their entailed attributes, with reference to Strobino’s account of Ibn

⁴⁸⁰ The main points of reference will be his doctoral thesis: *Freeing Philosophy from Metaphysics* (Ibrahim 2013a) and his subsequent article “Fakhr ad-Dīn ar-Rāzī, Ibn al-Haytham and Aristotelian Science” (Ibrahim 2013b). Cf. Benevich 2020b.

Sīnā on *per se* predication.⁴⁸¹ It will explore how the interweaving of conceptual and real-world necessity prepares the ground for an inductive science yielding real causal explanations in the world.

§5.1 Bilal Ibrahim: A Science of Essences or Phenomena?⁴⁸²

Ibrahim argues on the basis of a close reading of texts, primarily from the *Mulakhkhaṣ* and the *Mabāḥith*, that Rāzī is developing an alternative to peripatetic epistemology, whose logic allows for scientific investigation, but avoids commitment to any particular ontology or metaphysics.⁴⁸³ Ibrahim reads Rāzī as denying knowledge of essences, at least when regarded as intelligible entities that lie beyond what can be observed by the senses. Thus real (essential) definitions are unattainable and the concepts deployed in Avicennan demonstrative proofs are merely analytic. They cannot therefore lead us to new, non-trivial knowledge.⁴⁸⁴ Rāzī offers an alternative theory of concept formation based ultimately on the phenomena of the senses, unified into discrete bundles, constituting knowable entities that Ibrahim titles ‘structured universals’.⁴⁸⁵

⁴⁸¹ Strobino 2016b.

⁴⁸² Griffel’s account of Rāzī on the knowledge of essences also references Ibrahim and suggests a ‘nominalist’ approach (Griffel 2021: 350 ff). ‘Nominalist’ seems not quite right, given that (as we shall see below and as Griffel himself notes) Rāzī (a) believes natural forms have a non-local reality in the external world (b) believes we can know these. Here it is argued that the difference between Rāzī and Ibn Sīnā comes down to their different ontologies. The latter gives ontological primacy to all things mental and intelligible, and the special relationship between human intellects and intelligible forms flows from that (existence as actualisation). For Rāzī all created objects, whether material or non-material are on an ontological par (existence as thereness). Physically present instantiations of a form are more real, not less so than the derivative abstractions present in the mind. Benevich (Benevich 2020b: 3-14) also highlights Rāzī’s penchant for a nominalist, analytic account of *definitions* (whose elements have as referents concepts already available in the mind) and his scepticism about some scientific, essential definitions, but points out that he is a realist about the universals accessible through direct perception.

⁴⁸³ ‘This critical agenda is to mark out a logical theory of universals and predication that is “neutral” with respect to the epistemological and ontological principles of the Aristotelian system’. Ibrahim 2013: 3.

⁴⁸⁴ Ibrahim 2013a: 5.

⁴⁸⁵ Ibrahim 2013a: 8. Fedor Benevich has expanded on the underlying arguments.

In the first chapter of his study, Ibrahim indicates how this affects any enquiry about causality:⁴⁸⁶

...rather than belittling scientific investigation, Rāzī wants to systematically assess natural phenomena without the stronger (causal) explanatory model of Aristotelian science which is based on the knowledge of essences and demonstrative proof.

Ibrahim sees Rāzī's critique both of atomism and of received hylomorphism as a fruit of this improved method. His most recent article puts this in a bigger context, 'Rāzī and some later Ash'arite thinkers draw on a wider scope of ancient and Islamic sciences in developing alternative ways of analyzing composite substances.'⁴⁸⁷

I will argue that the main lines of Ibrahim's argument are sound, with one or two quibbles. However, I want to suggest that the discussion can be helpfully reframed in the light of Rāzī's theological choices for a non-Plotinian theology.

§5.1.1 The 'Structured Universal'

Ibrahim's concept of the 'structured universal' (based on the Arabic phrase *hay'a ijtimā'iyya*) is a focal point for his argument and, he suggests, is just the point where Rāzī's narrative of the acquisition of universals diverges from Ibn Sīnā's.⁴⁸⁸

The term *hay'a* is used in a number of different contexts by both Ibn Sīnā and Rāzī as an equivalent to *ṣūra* (form), generally implying a perceptible, physical structure.⁴⁸⁹

Ibrahim picks in particular on a passage in the *Nihāya* which places *hay'a* in the same breath

⁴⁸⁶ Ibrahim 2013a: 108.

⁴⁸⁷ Ibrahim 2020: 68.

⁴⁸⁸ Ibrahim 2013a: 152; 2013b, 402.

⁴⁸⁹ *Mabāḥith* I, 257. See discussion of 'quality' as a *hay'a qārra* that can be conceptualised without further additions. At 260 Rāzī analyses five rather different usages of the term *hay'a*, that seem to have more to do with being in a particular state or condition.

as *ijtimāʿ* - combination or assemblage.⁴⁹⁰ Rāzī is there discussing a specific problem for scientific knowledge well-discussed within the peripatetic tradition, the problem of the relation of a whole, as a distinctive, thing to the parts of which it is made.⁴⁹¹ Before we look at Ibrahim's argument in detail, we need to be aware of some standard discussions of scientific definition.

Knowledge is conveyed when we define or describe what is less well-known in terms of what is better known. We define a complex by identifying its parts. In the peripatetic world, this often means defining a species of thing (*nawʿ*) in terms of its genus (*jins*) and differentia (*faṣl*) – the human is a rational animal.⁴⁹² But there are other useful ways of dividing up complex entities: form and matter (the bronze and the statue), material parts (blood, flesh and bone), essential and accidental properties.⁴⁹³ Some of these divisions are notional, some physical. Genus and differentia or form and matter are separable in the mind. Blood, flesh and bone, the bricks of a house or the soldiers in an army, can be physically separated.⁴⁹⁴

There is an important set of distinctions developed by Ibn Sīnā, reworking Aristotle, between constituent properties (*muqawwima*) and various grades of consequential accident from the entailed (*lāzima*) or essential (*dhātiyya*) accidents (*aʿrād*) to the separable ones (*mufāriqa*).⁴⁹⁵ Strobino has analysed Ibn Sīnā's account across a range of texts, examining the interplay between the realm of definition, concept and argument and scientific

⁴⁹⁰ *Nihāya* I, 111.

⁴⁹¹ See for instance Aristotle *Metaphysics* Z, 10, 1034b20 ff, agonising over the relation between definition and parts. For Rāzī wrestling with sceptical challenges to definitions in terms of parts see *Mulakhkhaṣ* (logic), 919-23.

⁴⁹² See Ibn Sīnā, *Metaphysics*, V, 7, §2, 180.

⁴⁹³ Ibn Sīnā, *Metaphysics*, V, 8-9, 186-193.

⁴⁹⁴ For this distinction see *Mulakhkhaṣ* (Physics and Theology), 222 ff.

⁴⁹⁵ Ibn Sīnā in *Sharḥ al-Ishārāt* (logic), 45 ff, 51 ff, 64 ff, 74 ff. I will generally translate *lawāzim* 'entailed accidents', though with the caution that sometimes both Ibn Sīnā and Rāzī will speak of constituents as *lawāzim*. Strobino uses 'implicates'.

accounts of the real world through gradations of entailment/necessitation (*iltizām*) or ‘implicates’ based on the more primitive concept of containment or inseparability (*taḍammun*).⁴⁹⁶

The strongest entailment (a *per se* entailment) is between the constituent properties (genus/differentia) of a species of entity, which provide a real definition. Being human entails/necessitates being rational and being an animal, because both concepts are contained in what it is to be a human. Below that (a second sort of *per se* entailment) comes the case where a property of a species of entity contains that entity in its definition. The classic case of Socrates’ ‘snub-nosed’ contains ‘human’ in its definition, and is therefore one of a disjunctive set of nasal descriptors entailed by ‘human’.

At the third level of entailment (derivative *per se*: the locus for scientific enquiry) the entailment is mediated by one of the *per se* properties of an entity and may need to be discovered. ‘Being white’ is an entailment of ‘body’, not because it comes into the definition of body or vice-versa, but because bodies have a surface and ‘being white’ does entail ‘being a surface’. This is easiest to see in the case of mathematical objects. A triangle cannot be a triangle without being a shape. That is a constituent property (*muqawwim*). The fact that its angles add up to two right angles is a third-level entailed accident (*‘arad lāzim*) and is discovered by a proof through its known constituent and second-level entailed properties.

The final level of entailment is a necessity of the fact which (allegedly) is irrelevant to explanation because, although it falls within a containment relation, there is no definitional relationship. ‘All swans are white’ or ‘all crows are black’. ‘Black’ is not contained in the constituting definition of crow, nor is ‘swan’ contained in the definition of

⁴⁹⁶ Strobino 2016b. ‘The objects of scientific knowledge are essential connections holding among entities within a specified domain of discourse, which provide in turn the metaphysical grounding for definitional relations. The latter are expressed by *per se* predications.’ 2016b: 182. For the taxonomy 2016b: 187-201.

‘white’.⁴⁹⁷ This provides at least an initial framework for thinking about scientific enquiry as a process of ‘proving properties that should not already self-evidently hold of their subjects in the way constituents ideally do’.⁴⁹⁸

Ibn Sīnā makes a sharp distinction between definition (*ḥadd*), which identifies an essence (*māhiyya* or *ḥaqīqa*) by its constituent parts, on the genus-species model, and a description (*rasm*) which identifies it by its entailed accidents.⁴⁹⁹ The definition is the true universal in propositional form, and provides the basis for sound syllogistic reasoning. The description presents the effects of the essence, but an effect does not give us reliable information about the essence of its cause.⁵⁰⁰ So description is only ‘a shadow and an image’ of the reality it describes.⁵⁰¹ It cannot provide a sound basis for reasoning.

Here lies the problem for scientific knowledge. If sound definition of complexes depends on identifying their simple parts, we surely need to define their simple parts. However, the simple constituents of things in the world don’t have any further parts to explain them with.⁵⁰² Since we have no direct access to their essences, we can only know them by their effects (fire is hot and moves, water is moist and takes on different shapes). Either scientific definition is impossible, or we must redefine it in terms that give epistemic primacy to the sorts of infallible sense-experiences that Rāzī discusses in the *Nihāya*.⁵⁰³ This is the *point d’appui* for Ibrahim’s argument.

⁴⁹⁷ Nevertheless, there is still an entailment relation through the specification of the individual (which, as a body with a surface, has to have some colour). But, at least on this definitional scheme, it has nothing to do with being a crow. For Rāzī’s explication of the hierarchy of accidents and Ibn Sīnā’s ‘separability’ test, see *Sharḥ* (Logic), 76ff.

⁴⁹⁸ Strobino 2016b: 202.

⁴⁹⁹ See Rāzī’s elucidation at *Sharḥ* (logic), 27-28.

⁵⁰⁰ *Sharḥ* (logic), 61.

⁵⁰¹ *Sharḥ* (logic), 28.

⁵⁰² Noted by Rāzī at *Sharḥ* (logic), 46.

⁵⁰³ *Nihaya* I, 111-116; *Sharḥ* (logic), 117. See also *Mulakhkhaṣ* (logic), 57-58.

Ibrahim argues that Rāzī breaks down the Avicennan distinction between definition (essential properties) and description (sum of entailed properties), and advances a form of nominal definition, based on the sensory, entailed properties of objects.⁵⁰⁴ The two key terms that unify such a property bundle into a universal are *qadr mushtarak*, the common property that allows us to class objects together, and *hay'at ijtimā'iyya* the 'unified structure' that means the observed parts actually belong to the whole. Ibrahim puts a great deal of weight on this latter term, which appears in the *Mulakhkhaṣ* applied to a paste and its ingredients, an army and its soldiers and a village and its houses.⁵⁰⁵ What makes the aggregate of parts a single unit is its 'unified structure... which is one of the parts of the composite and is the formal part (*al-juz' al-ṣūri*) on which the rest [of the parts] depend.'⁵⁰⁶

The elements of the term also appear in the *Nihāya*. The context is a list of sceptical objections to the possibility of giving an account of any aggregate (*majmū'*) in terms of its parts.⁵⁰⁷ It is proposed, 'we can give an account of the structure (*hay'a*) of the assemblage (*ijtimā'*) that supervenes (*'āriḍa*) on these parts in terms of these parts, (or vice-versa)'. As in the previous example the *hay'a* is here considered a part additional to its elements. The sceptical objector points out that this means that the *hay'a* and its parts are extrinsic to each other, and therefore cannot be part of a definition, though they could be part of a description. Rāzī's resolution is to suggest losing the hard distinction between *ḥadd* and *rasm*, a move which nicely supports Ibrahim's argument and appears to diverge significantly from the standard position.⁵⁰⁸

⁵⁰⁴ Ibrahim 2013a: 152 ff, 156.

⁵⁰⁵ *Mulakhkhaṣ* (Physics), 222.

⁵⁰⁶ Ibrahim 2013a: 152-153.

⁵⁰⁷ *Nihāya* I: 111. Compare Sextus Empiricus *Outline of Pyrrhonism*, III, §§98-99, 394-395: 'if there can be a whole it is either something distinct from its parts or its parts themselves are the whole. It cannot be anything distinct from its parts... if the whole is just its parts, then the whole is simply a name, and an empty appellation, and has no proper existence.'

⁵⁰⁸ *Nihāya*, 113.

The passage in the *Mulakhkhaṣ* and the corresponding passage in the *Mabāḥith* are making a point about what distinguishes two adjacent entities (the man sitting on the stone) from the constituents of a mixture (a paste and its ingredients) and makes the latter a real unity.⁵⁰⁹ The distinguishing factor is a dependency-connection (*ta'alluq*) of (metalogical) need (*hāja*). Rāzī's gloss in the *Mabāḥith* is that the two parts of the paste together are the material parts that together with the formal part (being a paste) need each other to form the new unity. To avoid circularity, he suggests that they need each other in different ways. This has a hint of Ibn Sīnā's genus-differentia relationship, where the genus needs the differentia for its *existence*, and the differentia needs the genus for its *essence*.⁵¹⁰ By analogy, the army needs the soldiers to exist, but the soldiers need the formal structure in order to exist as an army, rather than a rabble. The *Mulakhkhaṣ* passage however has a one-way dependency relation.⁵¹¹ Only the formal part needs the material part to exist. Though all this is compatible with Ibrahim's claim, what Rāzī presents still looks like a fundamentally Peripatetic account of parts and structure, albeit applied to the special case of physical aggregates.⁵¹²

Again, the *Nihāya* passage cited does indeed suggest abandoning a distinction between definition and description, yet elsewhere Rāzī seems quite happy to present the standard position, albeit with provisos and acknowledgement of its difficulties.⁵¹³ In his commentary on the *Ishārāt*, he presents no principled objections to the division of entailed

⁵⁰⁹ *Mabāḥith* I, 56: 'On how the elements of the complex what-essence are combined'.

⁵¹⁰ See *Sharḥ* (Logic), 56, for instance.

⁵¹¹ Perhaps reflecting his rejection of the ontological status Ibn Sīnā assigns to non-existent 'things'.

⁵¹² Compare Ibn Sīnā's more elaborate account of material parts and the relation to form in *Physics* I, 10, §7, 68).

⁵¹³ *Muḥaṣṣal* 85; *Mulakhkhaṣ* (Logic), 58-61. 'On the difficulty of constructing definitions: the reason for this is the difficulty of grasping the proximate genus and the proximate differentia', *Mulakhkhaṣ* (logic), 61. We can note (1) that this is a position ascribed to Ibn Sīnā and (2) Rāzī upholds it against a challenge that equates definition with the analysis of pre-existing mental concepts, *Sharḥ al-Ishārāt*, 27-28, 110-116. Ibrahim seems to interpret the complaint in the *Mulakhkhaṣ* as a claim that it is impossible to achieve definitions (Ibrahim 2013b: 396). I will suggest below ways in which Rāzī seems to think it is possible, though not in all cases.

properties into essential properties and entailed accidents, on which the description/definition distinction depends. He does, however, note the special case of simple properties and the consequences of this.⁵¹⁴

The following passage from the *Mabāḥith* (echoed in the *Mulakhkhaṣ*) seems to state fairly clearly that real essences of simples can be grasped:⁵¹⁵

And I say, the real essences (*ḥaqāʾiq*) of simples can be intellected, and the demonstration of this is that complexes have to be constructed of simples, because any plurality has the singular existing in it. And if these simples are not intelligible, then the complexes would not be intelligible either through a definition. Nor could they be intellected through a description because description is a term for making something known through its entailed accidents, and if these entailed accidents were simple, then these would not be intelligible, and if they were complex then their simple elements would not be intelligible, so neither would these be intelligible, and in summary, the same argument applies as for the things that entail them, so in that case the claim that simples cannot be intellected necessitates that the human cannot intellect anything at all, either by definition or by description, yet the consequent is plainly false, so the antecedent must be false as well.

Against this background, some of Ibrahim's claims about a radical departure from the peripatetic framework seem a little too strong.⁵¹⁶ And indeed he does offer a more nuanced set of claims a little later on in the chapter.⁵¹⁷

⁵¹⁴ *Sharḥ al-Ishārāt*, 45–89.

⁵¹⁵ *Mabāḥith* I, 377 (the topic of the section is whether humans can know real essences). Cf *Mulakhkhaṣ* (Physics), 393.

⁵¹⁶ For instance: 'Any notion of differentia as a form that is causal and constitutive is opposed by Rāzī'. Ibrahim 2013a: 153. 'Rāzī wants to preserve the unity of parts without committing himself to Aristotelian or any other kind of essentialism' and 'the universal, in Rāzī's view is not construed as an essence or quiddity composed of constitutive parts,'. Ibrahim 2013a: 156.

⁵¹⁷ Ibrahim 2013a: 159-160: 'Rāzī need not rule out the possibility that between the inhering properties... and the proper parts certain necessary relations may hold... but he envisions a collection of items, where

§5.1.2 Breaking the Barrier between The Phenomenal and Intelligible

Nevertheless, Ibrahim is surely correct that Rāzī's account of logic, description and knowledge challenges some received peripatetic positions. Benevich has fleshed this point out, focusing on Rāzī's response to the Meno paradox in his account of scientific or essential definitions: if we are already able to talk about the referent at all, a definition can add nothing to the knowledge of it we already have.⁵¹⁸ 'The best result one can achieve with Aristotelian-Avicennian scientific definitions is a "nominal definition" of the referentially opaque meaning of a notion – in analytical parlance, of an intension – and not of essences of things in themselves.'⁵¹⁹ Whether I say 'the human is a rational animal' or 'the human is a featherless biped', I am not thereby giving new knowledge of the essence of a human-in-the-world. I am offering an analysis of two concepts of humanity.

However, Benevich also points out that this does not mean that Rāzī is a sceptic. Rāzī's reservations apply to conceptualisation (*tasawwur*), the first step in making truth claims. He argues that for Rāzī concepts must be immediately given, not acquired.⁵²⁰ That is, as we have noted throughout, direct inner or outer experience is what gives us our primary concepts, the *ḍarūriyyāt* from which alone knowledge can be constructed. A verbal definition is a second order thing, dependent on such primary concepts, but unable to be their source. However, this does not mean that verbal definitions are pointless (as the remainder of this Part attempts to demonstrate). Once there, concepts become the

identifying the proper parts as essential to the quiddity and proper accidents of a thing may be in many cases beyond our grasp.

⁵¹⁸ Benevich 2020b: 3-14.

⁵¹⁹ Benevich 2020b: 3.

⁵²⁰ He suggests, interestingly, that this is because of the importance of complete psychological determinism in his account of ethics (and the world). If knowledge were spontaneously acquired by humans that would undermine determinism. I would modify that claim slightly. The building blocks (the *ḍarūriyyāt*) must be a given, but further knowledge can be scientifically acquired in the process of reasoning, whose outcomes are governed by a further range of epistemological and psychological determinants.

ingredients of truth claims, or ‘assents’ (*taṣdīqāt*), and it is here that our understanding can be extended as these are verified in the light of experience or of argument. ‘Rāzī allows that one can and should argue about whether certain meanings, explicated in a certain way, apply to concrete extramental things.’⁵²¹ An illustration of this might be the way that in the *Nihaya* he rejects the *definition* of sound as ‘waves in the air’, but in the *Mabāḥith* sanctions the scientific account of waves in the air as the *cause* of sound (a truth-claim).⁵²² The verbal definition cannot present the real concept to awareness, but in the context of a new (or unfamiliar) truth-claim it can provide a real explanation that extends knowledge.⁵²³

Benevich suggests the prime reason for Rāzī’s attitude to concept-formation is his concern to emphasise psychological determinism. It might also be worth considering that the *kalām* tradition generally seems to be much closer to the phenomena-based epistemology of the Epicurean traditions. However, of more immediate and ongoing philosophical and theological concern to Rāzī, may be (a) the foundations of knowledge, for which the immediate, ineluctable concepts are essential, as the building blocks of propositions and syllogisms, and (b) his model of knowledge (human and divine) as an immediate relation between the self and an object in the world, whether a particular or a universal, in which the Avicennan barrier between the intelligible and the material dissolves.

We glimpse this in Rāzī’s resolution of the problem of aggregates in the *Mulakhkhaṣ*. Matter does not need form, but form does need matter. This reverses the ontological priority of the intelligible over the material found in Ibn Sīnā’s universe. Rather than rejecting hylomorphic accounts as a whole, Rāzī is rejecting an element of a Plotinian

⁵²¹ Benevich 2020b: 13.

⁵²² *Nihāyat-al-‘uqūl* I, 118; *Mabāḥith*, I, 305.

⁵²³ Contradicting Aristotle’s claim that they can be the same in *Posterior Analytics* II, 178-179, with the example of the eclipse (‘it is clear that what it is and why it is are the same’).

emanation narrative. In that theological narrative, the flow of existentiatio from the One is a flow of actualisation of potential. Prime matter, as absolute non-being, is at the extreme limit of potential, ‘needing’ form to become actual. In contrast, for Rāzī what is *there* already (in this case, matter) has priority over what is *not yet there*. Particular matter *already exists* and does not need a new form in order to become actual.⁵²⁴

This goes hand in hand with the account of knowledge and the mechanism of knowledge acquisition which we explored in Chapter 3, and which diverges significantly from Ibn Sīnā’s.⁵²⁵ For Rāzī knowledge is not the imprinting of a form in the mind, it is the (correct) correspondence of a mental form to an object in the world. Rāzī’s mechanism for knowledge acquisition allows a non-material soul to have direct knowledge of universals, forms and particulars. For all non-material perceiving agents, both universals and particulars are real and accessible in the extramental world. This serves the critical theological goal of breaking down Ibn Sīnā’s metaphysical barrier between the One, trapped in a world of timeless universals, and the plurality of forms in the material world. God can have direct knowledge of and act directly on individual, enmattered entities in the lower world.

Ibrahim suggests, highly plausibly, that Rāzī’s account of the construction of visual knowledge is based on the optical theory of the 11th Century scientist, Ibn al-Haytham. He highlights Ibn al-Haytham’s notion that the immediate information (the arrangement of colour points in the visual field) requires further acts of derivation (*istidlāl*) and discernment (*tamyīz*) before we can see things as *whole* sorts of things.⁵²⁶ After drawing parallels between Ibn al-Haytham’s psychology of perception and Rāzī’s account in the

⁵²⁴ See *Mabāḥith*, I, 147 ‘the universal needs the individual, because were it not for the individual, then the universal would have no existence.’

⁵²⁵ Noted in Ibrahim 2013b: 402-403. ‘Rāzī exhibits considerable interest in, and dissatisfaction with, the epistemological-psychological theory of knowledge and sense perception advanced by Avicenna.’

⁵²⁶ Ibrahim 2013b: 405-409.

Mulakhkhaṣ, Ibrahim points out acutely that the attraction of such an account is precisely that it explains the connection between knowledge of wholes (seeing as) and the immediate and infallible objects of inner and outer perception.⁵²⁷

Ibrahim, however, draws the conclusion that for Rāzī ‘definitional universals apply simply to “collections” of things, the genus of which he calls the “common factor” (*al-qadr al-mushtarak*) and the differentia “the distinguishing factor”. Universals do not constitutively define complex sensible objects, but only *distinguish* them. He slightly undermines his own case for a radical departure, however, by noting that Ibn Sīnā himself shows some of the same insights as Ibn al-Haytham in the *Kitāb al-Nafs* and noting that Rāzī’s stated problem is with Ibn Sīnā’s theory of form impression.

Such a strong claim about universals would situate Rāzī much closer to al-Ash‘arī himself. Fire is whatever perceptible object has just these properties of heat and movement, and we make no claims about an essence that lies behind it. The problem with the claim is that in other areas, as we have already observed, Rāzī unproblematically accepts the language of definition in terms of genus and species, of description of natural processes in terms of the acquisition of higher form, and of powers and properties that are an expression of a particular kind of nature.

Ibrahim has clearly identified a real difference and it does lie in the mechanism of perception and knowledge acquisition. However, we have already had a hint of an alternative explanation. Rāzī’s aim is not to abolish essences and dissolve universals into Humean perceptual bundles, but to point out that true universals are not bestowed on us out of a remote intelligible realm, but are available in the world of particulars before us.

Ibn Sīnā builds on one line of Aristotle (what we perceive are particulars). Universals are not accessible to the senses in particulars. They belong in the intelligible

⁵²⁷ Ibrahim 2013b: 409-410.

realm accessible to pure intellects only. Rāzī, follows another line (perception is of universals): natural universals exist in the material world and we can know them directly through our senses.⁵²⁸ We do not need a complex apparatus of abstraction that works from a physical imprinted form in the physical imaging faculty (*khayāl*) until the moment when the abstracted particulars in the (still physical) reckoning faculty (*wahm*) are turned into a universal in the non-material intellect (*‘aql*) by the agent intellect. To acquire the mental correlate of a universal and recognise a human, we just need to peel away the layers of phenomenal attributes specific to this particular person, and recognise the properties that are common to all the humans we encounter:⁵²⁹

There is no doubt that the noun ‘human’ is applied to Zayd and ‘Umar and this is not purely because it is a terminological commonality, but this is by way of a commonality in concept and meaning... when that common feature is evoked in such a way that it is abstracted from all accidents and alien, extrinsic concomitants, the form in the intellect will be a universal.

Yet this representational structure (he calls it a *hay’a* here) in the soul, even though it is common to all rational beings, is very similar to Ibn Sīnā’s assemblage of abstracted particulars in the *wahm* (the material predisposed to receive the universal), equally derived from the particulars in the world. It does not correspond to Ibn Sīnā’s true universal bestowed from above. Nevertheless, the same structure will be present in all rational beings who grasp that universal.

The *Mulakhkhaṣ* makes the point clearer, dividing universals into three categories: natural universals, logical universals and intelligible universals.⁵³⁰ The natural universal ‘has to exist in particulars, because “the animal” (*al-ḥayawānī*) is a part of “this animal”

⁵²⁸ See Aristotle, *Posterior Analytics* 100a17-100b1, 258.

⁵²⁹ *Mabāḥith* I, 333. Compare Rāzī’s account of deriving ‘human’ from a particular tall human in *Sharḥ* (Physics), 239-240.

⁵³⁰ *Mulakhkhaṣ* (Logic), 13-15.

(*hādhā al-ḥayawān*) and when the composite is existent, the simple is existent.’ The universal of logic is a relational category. The universal of thought, however is not the true universal form that cannot be present in particulars, as the Peripatetics claim. The actual universal is in fact, the common factor (Ibrahim’s *qadr mushtarak*) present in individual things as they are. ‘The mental form is called a universal metaphorically because it is a cognition that is dependent (*muta‘allaq*) on that thing that is the [real] universal.’⁵³¹

What we say is that we know ineluctably (*na‘lamu bi-l-ḍarūriyāt*) that the individuals of a single species share in the nature of that species, but that each individual is distinguished from the others by its individuating properties (*khuṣūṣiyyāt*). That which they have in common is different from what distinguishes them, and it is that common factor (*qadr mushtarak*) that is the universal.

§5.1.3 Rāzī’s theological Concerns

Ibrahim has correctly identified that Rāzī offers a different epistemological narrative to Ibn Sīnā’s and that the key difference is in the ontological priority of universals in the physical world over the derivative forms or traces (*‘āthār*) in the mind. He has correctly identified Rāzī’s preference for phenomenal primary concepts based on the objects of outer or inner sense, over scientific explanatory definitions as the foundations of reasoning. He has ingeniously suggested that Rāzī may be deploying Ibn al-Haytham’s account of perception to bridge the gap between primary experiences and basic human concepts (from ‘cool and moist’ to ‘sea’).

However, for the reasons above, I would suggest that it is only this aspect of the narrative that has changed. The sort of things we end up knowing are very similar – genera, species, essences, universals, natures, powers, bodies. Benevich’s account suggests the reason why. Our concepts may not be provided through verbal definitions, but our

⁵³¹ *Mulakhkhaṣ* (Logic), 14.

truth claims and our verbal reasoning about the objects of experience can lead us to true knowledge of things in the world.

We can also note that the inductive process Rāzī describes (the stripping away of individuating features to find what is common) is identical with the ‘material’ stages of the Avicennan account.⁵³² Only the leap to the intelligible realm is missing, and this is because Rāzī thinks it is both incoherent and unnecessary. Even though all those things (genera, species, universal essence etc.) can still only be separated from their objects in the mind, they are accessible to the senses in the physical world.

This is not so much freeing philosophy from metaphysics as freeing Ibn Sīnā from Plotinus, in order to allow an ontological parity in the external world between the material and non-material entities that occupy it.⁵³³ Alongside the philosophical and scientific motivations, theological ones are crucial. This version of our epistemic relation to a matter-based, hylomorphic universe brings us closer to the Ash‘arī material universe of individual substances and accidents, and a God who can both know and act directly on all of them.

On this account of Rāzī’s epistemological shift, he preserves a peripatetic optimism that we can have genuine knowledge of at least some things about the world.⁵³⁴ However, (and again Ibrahim seems to be right here) he inevitably blurs the lines between description and definition, because now the *only* route to knowledge of a universal is provided by the sets of phenomenal bundles in front of us, amongst whose elements lurks

⁵³² Strobino’s analysis of the tension between Ibn Sīnā’s empiricism and emanationism is helpful (Strobino 2015b). ‘If we have not formed basic concepts through a process that is grounded in sensation, repetition, meaning, experience and intellect, we are unable to attain the principles of scientific knowledge’ (2015b: 41).

⁵³³ A clash between ontologies in the *falsafa* and *kalām* traditions noted in Benevich 2020a: 25.

⁵³⁴ In the *Maṭālib* he will classify knowables into those things that are too weak and insignificant for us to know, those things that are too majestic and overwhelming to know and finally ‘the moderate items of knowledge... these are the sort of knowables that the intellectual power can perceive and encompass’. *Maṭālib* I, 48.

the universal we seek. As we saw, this affects the question of how we acquire a defined knowledge of the simples that allow us to define complexes. To that question we now turn.

§5.2 Acquiring Definitions: Entailed Accidents and Correlations

Ibn Sīnā's distinction between definition (*ḥadd*) and description (*rasm*) is based on the distinction between the constituent properties (*muqawwima*) that make a thing what it is (*māhiyya*) and the essential or entailed accidents (*ʿrād dhātiyya/lāzima*) generated by that essence. However, he acknowledges that cumulative descriptions can help us better pick out an entity.⁵³⁵ Rāzī too suggests that there is a useful sense in which we can know an entity through its entailed accidents, even when we do not know its constituent properties. However, this does not give us knowledge of its essence.⁵³⁶

An entity can be known through one of its entailed accidents, even if its essential predicates are not known. For instance, if we know of the soul that it is a substance causing movement in the body, then the fact that it causes movement in the body is something entailed by its essence but extrinsic to it. There is no question that this entails knowledge of those constituents.⁵³⁷

Rāzī does indeed recognise that there are areas of human discourse and understanding where we cannot go beyond what we see to the reality that lies behind it. In this case we can only talk about it in terms of its 'entailed accidents'.

⁵³⁵ *Sharḥ* (Logic), 114-115. 'Often what is employed in extending descriptions can increase the adequacy of our distinction' glossed by Rāzī as 'the more of the entailed accidents and the properties we know, the more perfect and general is the understanding we achieve.' Strobino notes Ibn Sīnā's ambivalence about the primacy of definition in scientific explanation. Strobino 2015c: 62 'he challenges the contention that appealing to definitions is a sufficient condition for facts to be established demonstratively.'

⁵³⁶ *Sharḥ* (Logic), 60-61.

⁵³⁷ He returns to so-called definitions of the soul in his commentary on answers to the question 'what is it?'. 'The sensory soul is a perfection of the natural body, providing of itself perceptions of particulars' is a description, not a definition. *Sharḥ* (Logic), 89. For Ibn Sīnā's himself the effects of the soul show that it exists, but do not reveal its substance, see *Shifā'* (*ilm al-nafs*) I, 1, 9-10.

He suggests elsewhere, as Ibrahim points out, that this epistemic limitation applies to other simple essences as well. But this raises the question *how* we can have any real knowledge of the complex essences that such simple essences make up.⁵³⁹ Entailed properties may have a part to play in giving us a deficient but working acquaintance with the things around us, but how do we get beyond them to real essences that allow us to give scientific accounts of the world?

Some remote accidental properties will not actually help us to get any closer to what a thing really is. And when we are considering basic essences, which are only known through a single entailed accident, we will not understand them any better by adding to the list of accidents that are dependent on that single entailed accident however long the list.⁵⁴⁰ Nevertheless, we can begin to see how description and definition might, after all, come together beginning with Ibn Sīnā's account of a description as an accumulated set of accidents and specifying properties (*jumla... bi-ijtimā'ihā*) that identifies an entity and makes it known.⁵⁴¹ Ibn Sīnā expands:

The best descriptions for providing the individual essence of an entity are those that place the genus first. An example is when we say of a human that they are an animal that walks on two feet, with broad nails, and with a characteristic of laughter.

The genus is given, and the missing differentia (rational) is implied by the phenomenal characteristic, 'laughter'.

⁵³⁹ We have already seen his argument *that* we can.

⁵⁴⁰ See *Sharḥ* (Logic) 117, for a further assertion of the maxim that a simple can only generate one entailed accident, a version of the 'one can only generate one' maxim which Rāzī rejects in the case of God, but seems prepared to accept when talking about physical things.

⁵⁴¹ *Sharḥ* (Logic), 117.

Rāzī points out that this does not work for simple things that only have one proper entailed accident. We cannot know that the entailed accident we see is generated by that essence without knowing the essence already, which we do not. He does, however, suggest a solution. We can combine several general features of the target entity until we have a restricted set of properties that correlate with just that entity.

We take entailed accidents that are more general than the thing itself and bind them together (*nuqayyidu*) until this [combination of descriptors] comes to correspond precisely (*musāwiyyan*) with the thing. And this does not entail a circular argument.

He (rather unhelpfully) illustrates what looks like a model for biological classification with the abstract example of ‘quality’, explained as ‘a stable structure (*hay’a qārra*), whose conceptualisation does not entail (*yūjib*) the conceptualisation of anything extrinsic to it, and with no relation or division in the parts of the entity that bears it’.⁵⁴² Each element of the description is more general than ‘quality’ so knowing them is not dependent on knowing ‘quality’, but when they are all combined the set of descriptors successfully picks out just the target entity.

The application for scientific enquiry is more readily apparent in an earlier discussion of Ibn Sīnā on scope and correspondence in essential accidents.⁵⁴³ The property we are considering must correlate with just that *dhāt* if we are to have an explanation, and know that that entity is the *‘illa* of that phenomenal property. A thing moves because it is a body, not because it is white.

⁵⁴² *Sharḥ* (Logic), 117-118. This description is discussed in more detail at *Mabāḥith* I, 257-262. There he calls it deficient, but adequate for the purpose of distinguishing ‘quality’ from the other accidents.

⁵⁴³ *Sharḥ* (Logic), 75-76.

As Rāzī explains it, if a proposition of the form ‘Fx is G’ is to explain anything, then ‘F’ and ‘G’ have to be matched to a corresponding level of specificity and generality.⁵⁴⁴ We take three properties ‘being a human’, ‘being able to laugh’ and ‘being tickled pink’ (*ta‘ajjub*). However, ‘being human’ does not logically require ‘being able to laugh’ on its own. It needs an explanatory middle term, namely ‘has the capacity to be tickled pink’. However, ‘has the capacity to be tickled pink’ can only explain why the human is able to laugh if we can establish that that predicate is co-extensive with the essence ‘human’.

This is significant for empirical science. We may not be able to see into any entailed-accident relationship directly, but we can at least match objects and their concomitant phenomena into appropriate sets. Thus, when the level of generality and specificity in predicates (including the sub-species specificities like male and female or the ubiquitous Zayd’s nose) matches, the *‘illa*-cause of the predicate maps onto just that subject and you have an explanation or the possibility of explanation: the animal breathes, the man laughs, the body dissolves. When not, not: the musician dissolves, the white object laughs.

Once you have your sets, you also have the clues that might lead you to a definition. Indeed, some of the essential constituent properties may be directly observable.⁵⁴⁶ Caution is needed, however. As we strive to identify the relevant correlated properties, errors can occur in the process of empirical reasoning. What is an accident can be mistaken for what is essential, and this will affect the validity of our explanations.⁵⁴⁷ Nevertheless, we have a method for classifying objects in a way that allows us to establish formal causal relationships. That entailment relation emerges when we establish a correlation of the

⁵⁴⁴ *Sharḥ* (Logic), 77 ff on ‘essential accidents’.

⁵⁴⁶ See *Sharḥ* (Logic), 89 discussing identifying the essence of the soul and defining ‘animal’. Note the conclusion: logicians are agreed that specifying (individuating) properties and accidents is not valid for demonstrating ‘what is it?’

⁵⁴⁷ *Sharḥ* (Logic), 263-264 (empirical reasoning).

properties *dependent* on the target essence. That avoids the paradox of an entailment relation between statements like ‘the human is rational’ and ‘the donkey is a brayer’, which, though unconnected correlate generally in all states of the world, and in particular when a donkey and a human are in the same stable.⁵⁴⁸

This is once more where concept and concrete reality cross over, as propositional knowledge of the meaning of terms maps onto states of affairs. Natural necessities ultimately correlate with the analytical necessity of human definitions and descriptions and provide the basis for explanations and expectations. It seems to be Rāzī’s theory of accessible universals-in-the-world that gives him this optimistic view about the relation between human knowledge and reality. He uses the example ‘why does the human laugh? *Because she is tickled pink*’ to illustrate why explanations work.⁵⁴⁹

What establishes this is that knowledge is a form corresponding to what is known, so if the existence of one entity depended on the existence of another, and the existence of the other brought it about and was its *‘illa*-cause, then accordingly that necessity (*ḥājja*) is preserved in the [content of] knowledge.

It seems that however we may establish it, where we have knowledge of an entailed accident, the knowledge of that conceptual entailment corresponds to an explanatory relation in the real world.

§5.3 Conclusion

In this chapter we have explored Bilal Ibrahim’s analysis of Rāzī’s scientific method, concluding that he does indeed have an epistemology distinctively different from Ibn

⁵⁴⁸ Rāzī elucidates Ibn Sīnā at *Sharḥ* (Logic), 64-65.

⁵⁴⁹ *Sharḥ* (Logic), 71.

Sīnā's. In particular, following Benevich, we noted the weight Rāzī gives to primary phenomenal experience in acquiring basic concepts.

However, Ibrahim's claim that Rāzī has a radically distinct understanding of universals to Ibn Sīnā's seems harder to justify. If true, Rāzī's approach to science and reasoning would be more Humean, with a radical abandonment of notions of essence and nature crucial to a Peripatetic world of causal nexuses and real explanations. He would be much closer epistemologically to al-Ash'arī's world of nominal descriptions and Ghazālī's real, physical possibility. Yet, it is hard to find either in the *Mabāḥith*, the *Mulakhkhaṣ* or the *Sharḥ*, unambiguous signs that he is systematically rejecting the peripatetic explanatory framework and comparatively easy to find clear signs that he isn't. Benevich usefully highlights that Rāzī seems to shift the explanatory, discursive, verbal knowledge associated with science entirely into the domain of truth-claims (*taṣdīqāt*), leaving conceptualisation the domain of immediate, ineluctable perception.

So, I propose an alternative frame to Ibrahim's for reading Rāzī's modified epistemology. We can see a faithfulness to a tradition within *kalām* (with ancient echoes) that emphasises the infallibility of immediate sense-experience. But at least as important is that Rāzī's epistemological choice supports his rejection of the Plotinian emanation narrative privileging the intelligible over the material world, and gives God and mortals alike direct access to particular and universal knowledge.

The rejection has theological grounds, but it has implications for science. Universals exist in the physical world and can be known directly by inspecting that world carefully. Peripatetic universals, while remaining non-local, become more like Ash'arī atomic accidents, yet the explanatory apparatus of genus, species, form, matter, essence and entailed accident, remains intact. Some essences are indeed unknowable (God, souls). However, systematic analysis of general properties gives us correlating sets of object types

and properties that do permit us to construct explanatory accounts. Rather than creating a gulf between the world of concept and the real world, Rāzī's optimistic epistemology strengthens the bridge.

The last chapter in this Part will explore how this applies to actual explanatory accounts, and assess more fully the rôles of reason and divine action in acquiring knowledge of universal truths.

Chapter 6 Finding Universal Explanations

If the argument of the previous chapters is correct, then Rāzī allows that we can acquire an essential knowledge of entities in the world that binds together the conceptual entailments of argument and the real-world necessity in things and that makes science possible. Where Rāzī differs from Ibn Sīnā is not in the reality of universals, but in their accessibility through the physical, rather than the intelligible world. This chapter will explore the transition from definition to scientific explanation, above all through the process of empirical reasoning.

There are differences between Rāzī and Ibn Sīnā, but when it comes to science, these should probably not be exaggerated. One implication of Ibrahim's argument, for instance, is that peripatetic science is based on dogmatic certainties and perfect demonstrations, while Rāzīan science is more agnostic and provisional. There is an impression that Ibn Sīnā's *burhān*, the demonstrative proof, is something absolute and homogeneous, dependent on a notion of changeless propositions and the essential definitions that go with them. If essential definitions are insecure or at times unavailable, the Avicennan scientific project collapses.

However, Ibn Sīnā himself (following Aristotle) is actually much more nuanced about the status of the premisses that go into proofs. Firstly, not all premisses that are widely accepted (*mashhūrāt* – Aristotle's *endoxa*) are absolutely certain and secondly which premisses are widely accepted will often be local to one particular discipline, and may not be widely accepted in another.⁵⁵⁰ Natural causes are an example. They are accepted as a fact of life in *Physics* but need to be demonstrated in *Metaphysics*.⁵⁵¹ Strobino notes that

⁵⁵⁰ *Sharḥ* (Logic), 254-257. He gives as examples of widely-accepted propositions that are not primary ethical convictions. The reckoning faculty (*wahm*), detached from observation, can produce erroneous convictions, like the (Stoic) idea that there is a void beyond the world (256).

⁵⁵¹ Ibn Sīnā, *Physics* I, 1, §2, 4; *Sharḥ* (Logic), 257: 'As for things taken as accepted (*maqbulāt*)... these are opinions taken from the consensus of experts (*ahl al-taḥṣīl*), or from an individual or teacher whose belief is approved.

Ibn Sīnā sets out an Aristotelian framework for scientific argument based on real definitions alone, but suggests that for him this model is an ‘idealisation’ which doesn’t always work in practice.⁵⁵² In fact:

(Ibn Sīnā) seems to be willing to claim that there is much more to this than meets the eye. A way out would be to broaden Aristotle’s claim that definition alone should be used in the middle term in demonstrative proofs and make use of descriptions along with definitions.⁵⁵³

In other words, Ibn Sīnā acknowledges that the explanatory propositions of scientific argument have as much to do with empirically accessible descriptions as with established, formal definitions. He is also as ready as the next person to acknowledge that scientific opinions need to be revised in the light of better arguments.⁵⁵⁴ There is a qualitative difference, however, between scientific proofs, based on sense evidence and open to multiple interpretations, and metaphysical arguments, based on the primary, necessary truths, like the law of bivalence, which yields the *a priori* concept of necessity.

Rāzī is very much on the same page as Ibn Sīnā on the metaphysics of necessity and its importance for demonstrating the existence of God. On the other hand, he disagrees with or calls into question some (but by no means all) of Ibn Sīnā’s metaphysical conclusions on the border between metaphysics and cosmogony, and, indeed, wherever he finds gaps in the reasoning. He seems broadly to accept the Peripatetic ‘standard science’ framework for talking about the physical world – at least in the *Mabāḥith* and the *Mulakhkhaṣ* – though with reservations about contested areas like time and body.

As for things that are established (*taqrīriyyāt*), these are the premisses that are accepted for the sake of argument in rhetoric, or those whose acceptance is entailed, and affirming them (*iqrār bihā*) belongs in the principles of sciences.’

⁵⁵² Strobino 2015c: 62.

⁵⁵³ Strobino 2015c: 75.

⁵⁵⁴ An example would be his preference for John Philoponus’ *mayl* over Aristotle’s *antiperistasis*.

The demonstrative syllogism within a given science is then not necessarily something that is a finished product either for Ibn Sīnā or for Rāzī.⁵⁵⁵ It captures and encodes material for explanations and predictions, but can be subverted by dissonant observations or a refinement of argument in the tradition of *shukūk*.⁵⁵⁶ It is not the last word about the way the world has to be. Rather it offers a best current explanation for why the phenomenon before us is happening and the best current prediction for what happens next.

The *Sharḥ* offers a useful example of how an explanatory syllogism works in its discussion of ‘why’ and ‘that’ demonstrations, revealing again how necessitation in the world intertwines with necessitation in argument. Our interest is in how the material for such syllogisms is acquired through an inductive process whose strengths and limitations are noted in different ways both by Ibn Sīnā and by Rāzī as they discuss *tajriba* or ‘empirical reasoning’. We shall find there are indeed some noteworthy differences, and these do reveal a greater space for epistemic uncertainty in Rāzī’s world.

§6.1 ‘Why’ Demonstrations and ‘That’ Demonstrations.⁵⁵⁷

Consider these two examples of a syllogism that expresses scientific knowledge:⁵⁵⁸

A (That)

- (1) If there is an eclipse of the moon then the earth is between the sun and the moon
- (2) But there is an eclipse of the moon
- (3) Therefore the earth is between the sun and the moon.

B (Why)

- (1) If the earth is between the sun and the moon, then there is an eclipse of the moon.

⁵⁵⁵ See McGinnis 2008: 146-147.

⁵⁵⁶ It is worth remembering that Ibn Sīnā was criticised for *not* treating Aristotelian teaching as dogma.

⁵⁵⁷ For a discussion of the Avicennan background, see Strobino 2016a, who again notes the close relation in Ibn Sīnā between the logic and epistemology of argument and metaphysics (2016a: 440).

⁵⁵⁸ *Sharḥ* (Logic), 356.

- (2) The earth is between the sun and the moon
- (3) Therefore there is an eclipse of the moon.

Ibn Sīnā explains that when the middle term of a syllogism is the cause (*sabab*) of the existence of the judgment in the thing itself (*fī nafs al-amr*) this is a ‘why’ syllogism. The proposition that is a cause for the assent to the *judgment* of fact (as source of the logical entailment from the concepts) encodes the state of affairs that causes the existence of the *fact* itself (as source of the entailment in the world). The middle term explains *why* the conclusion applies in relation to a fact about the real world at the same time as it shows *that* the conclusion applies. A ‘that’ syllogism, however, assumes a causal relation in order to establish from a given effect the existence of the cause. Both work because the same relations of cause and effect are in play.

In the ‘why’ syllogism the middle term is the cause and the conclusion the effect, in the ‘that’ syllogism, the middle term is the effect. Ibn Sīnā points out that in these two different sorts of syllogism the entailment relationships differ. In the real world the source of the entailed event (*malzūm*) is the earth being in the middle and the real entailed event (*lāzim*) is the eclipse. The entailment is one way only. In argument, however, the entailment works both ways, and the fact of an eclipse entails the fact that the earth is between the moon and the sun. The world of concept and the real world are both interrelated and distinct.

Rāzī’s commentary includes two examples of his own. The first is a physical example (fire and wood) that takes us back to the sceptical challenge of Ghazālī.⁵⁵⁹ The second seems to affirm Rāzī’s acceptance of the peripatetic definitional language of genus, species and differentia together with its metalogical possibilities. We can recognise again the importance of the mediated entailment relations (the third-level *lawāzim*) identified by

⁵⁵⁹ *Sharḥ* (Logic), 357.

Strobino. Every human is an animal; every animal is a body; therefore, every human is a body.⁵⁶⁰ ‘Being an animal’ is an essential constituent property of ‘being human’ and therefore one of its *‘illa*-causes. ‘Being a body’ is an essential constituent property of ‘being an animal’. This term is the ‘cause’ of the truth of the conclusion. The entailments in the peripatetic definitional propositions again map onto the world realities they encode.

Rāzī use of *‘illa* rather than *sabab* here reminds us that he is aware of the parallels between the quasi-analytic causality in the *kalām* tradition (a cognition (*‘ilm*) is the *‘illa* of being-a-cogniser (being an *‘ālim*)) and the language of causality in the Peripatetic tradition. Rather than dissolving real world implications into a trivial definitional ones, he seems to be affirming substantive conceptual entailments that correlate reliably to facts in the world, and (perhaps) thereby offers fellow Ash‘arī’s a stepping stone to join him on the side of the real.

The other example presents ‘the wood has contact with fire and so it catches light’ as the ‘why’ syllogism, and ‘the wood catches light, so it has contact with fire’ as the ‘that’ syllogism. Though Rāzī does not explicitly address Ghazālī’s sceptical challenge, his discussion adds another important layer to the epistemic dimension of claims about possibility. Ghazālī acknowledged that the possibility of ‘hidden causes’ means we cannot be sure what will happen next. Here, Rāzī amplifies that notion as he shows why knowing the *nature* of a potential agent does not *ipso facto* mean that we know what it will do.

This emerges as he solves a *prima facie* logical puzzle. How can the same term justifiably appear in the explanatory major premise and in the conclusion?⁵⁶¹ How can ‘fire’ be both

⁵⁶⁰ Rāzī fine-tunes the discussion. The middle term (animal) must be a cause (*‘illa*) of ‘being a body’ just with respect to the human. ‘Being an animal’ does not make a stone a body.

⁵⁶¹ On some readings the claim Fx causes Gx causes Fx may raise eyebrows. Insert F = father and G = son for instance.

cause and effect? He elaborates the example of fire and wood, where ‘the middle term which is an effect of the major term is an *‘illa*-cause of the major term in the minor’:

- (1) The nature of fire causes the motion of fire.
- (2) The motion of fire brings it into contact with wood
- (3) The contact of fire on wood causes the wood to catch fire.

Initially, Rāzī is justifying Ibn Sīnā’s claim that just because the same term (fire) appears at the beginning and the end of the process, this does not mean there is anything wrong with the explanatory syllogism.

However, he goes beyond Ibn Sīnā’s immediate concern and points out that the wood’s catching fire ‘is one of the accidental occurrences’ (*‘āriḍ min al-‘urūḍ*) of the major. This is how he spells it out:⁵⁶²

The motion of fire, for example, is caused (*ma‘lūl*) by its nature, this [motion] then becomes a cause (*‘illa*) for its nature to occur in the entity that it comes into contact with. For this reason, *motion* constitutes a mediating term for the occurrence of the major (fire), rather than the nature of fire itself. So, the nature of fire itself will not be a cause of combustion of itself, except by means of its effect, namely its contact with the combustible object or its movement towards it.

This should probably be read in the context of an important epistemological claim he makes earlier in his commentary: ‘knowledge of the essence (*māhiyya*) of the analytic cause (*‘illa*) does not logically require (*yaqtaḍi*) knowledge of the effect except on another condition, namely the conceptualisation of the effect.’⁵⁶³ He mentions the principle in other contexts as well, notably in the *Mabāḥith*, to which he appears to refer at this point in the *Sharḥ*.⁵⁶⁴

⁵⁶² *Sharḥ* (Logic), 358.

⁵⁶³ Cf *Sharḥ* (Logic), 69.

⁵⁶⁴ *Mabāḥith* I, 361–362 ‘I have mentioned in several of my books that knowledge of the cause does not necessitate knowledge of the effect absolutely’.

‘Cause’ is a relation, and therefore cannot be known unless both terms of the relationship are known. Thus, fire may have a knowable essence (or nature), but knowledge of that essence or nature does not entail knowledge of a particular effect without bringing in further considerations. This much is entirely in harmony with peripatetic physics. Ibn Sīnā carefully makes clear that an array of causes and conditions may be necessary for any given event to take place.⁵⁶⁵ ‘Fire burns’ is an undifferentiated universal claim. Whether this fire necessarily burns this wood will depend on a number of factors and conditions, only one of which is the nature of fire.

Rāzī, however, chooses to emphasise that ‘causes burning’ is not one of the *entailed* accidents of fire. Rather than ‘fire is hot and fire causes burning’, we have ‘fire is hot and fire moves upwards’.⁵⁶⁶ The extreme sceptical challenge to the idea of a fiery nature presented by Ghazālī relies on an implicit disjunction: either the nature of fire causes the cotton to burn or it doesn’t. If it doesn’t (and we have no evidence that it does) then there are no necessitating natures and there is always real possibility in the world.

Rāzī presents the nature of fire such that we know its entailed accidents, but we do not know the effects on other entities that those entailed accidents may become (incidentally) involved with. Possibility here reflects our epistemic state (we do not know if this fire is close enough to burn this piece of cotton) and does not undermine science or necessity in the universe. Ghazālī effectively acknowledges this in his moderate *falsafa*-friendly account of miracles, using the talcum powder example to explain why Ibrahim might not necessarily burn.⁵⁶⁷ Rāzī’s account articulates more precisely the reason why it

⁵⁶⁵ Ibn Sīnā, *Physics* I, 13, §8, 85-86 (on ‘always and for the most part’).

⁵⁶⁶ Burning as due to the movement of fiery matter in amongst the wooden matter also hints at al-Ash‘arī’s account of burning.

⁵⁶⁷ Ghazālī, *Incoherence*, 17, §18, 171-172.

would be possible to know the nature of fire without being obliged to conclude that Ibrahīm *must* have been burnt by it.

6.2 Induction (*istiqrāʾ*) and Empirical Reasoning (*tajriba*)

But where do we get the propositions for our explanatory syllogisms? Ibn Sīnā discusses the movement from particulars to universal belief and universal knowledge in two separate sections. In the first he discusses repeated experience (*mujarrabāt*).⁵⁶⁸ He identifies a strong link ‘that admits no doubt’ that binds event-types by a ‘syllogistic power’ in the expectations of the soul – like the anticipation of pain from being hit by wood. He attributes it naturalistically to the memory created by repeated impressions. The link is simply to be taken by the logician as an observable fact.⁵⁶⁹ They yield judgments that may be *subjectively* certain (*jazman* rather than *yaqīn*) or ‘for the most part’.⁵⁷⁰ Ibn Sīnā compares the judgments of repeated experience with a further category of ‘insightful’ judgments (*ḥadsiyyāt*). This time it is not memory but (*ḥads*) powerful ‘insight’ or ‘correct guessing’ (*Gutas*) that yields the judgment. Recognising that the light of the moon is derivative from the sun, for instance. Such judgments also have the syllogistic force (*quwwa qiyāsiyya*) that goes with repeated experience.⁵⁷¹

The second section offers a brief description of induction (*istiqrāʾ*) alongside analogy.⁵⁷² It is a universal judgment based on a number of particulars representative of the universal. Without mentioning subjective experience and memory, Ibn Sīnā points out that induction does not provide sound knowledge. You may judge from the case of

⁵⁶⁸ *Sharḥ* (Logic), from 256, (the section classifies processes of judgment according to reliability); 271, *al-istiqrāʾ*.

⁵⁶⁹ For Ibn Sīnā in naturalistic mode see McGinnis, ‘Logic maps onto the way the world is not because one has imposed some logical reconstruction of the world, but because the world structures and constrains the way one reasons about it’ McGinnis 2008: 138-139.

⁵⁷⁰ We will see that Rāzī’s analysis takes things in a slightly different direction.

⁵⁷¹ Information that comes from repeated, reliable reports (*tawāturiyya*) has a similar status. The consistently repeated independent reports presumably make it analogous to repeated experience.

⁵⁷² *Sharḥ* (Logic), 271.

humans, reptiles and birds that all animals chew with their lower jaw, but you have failed to take into account the crocodile.

Rāzī tries to harmonise these elliptic accounts.⁵⁷³ He begins with an apparent contradiction. Since repeated experience leads to a universal predication based on particular observations, it is surely induction and induction, as Ibn Sīnā himself is about to say does not yield knowledge, so how can he claim that particular observations yield objective certainty (*yaqīn*)? Rāzī resolves this by picking up on Ibn Sīnā's reference to a syllogistic power (*quwwa qiyāsiyya*).

Induction (*istiqrā'*) argues solely on the basis of the observed particulars to a universal judgment, whereas repeated experience (*tajriba*) combines the collection of particulars with an independent syllogism.⁵⁷⁴ A sort of 'empirical reasoning', we might say. He gives as an example the application of scammony upon which follows diarrhoea:⁵⁷⁵

And that is observed repeatedly, so it is understood by the intellect that it is not by chance, for things that occur by chance are not always or for the most part, so it is grasped that purging yellow bile is one of the actions of the scammony. And since that is not through choice, it is understood that it has to be natural. And since that does not come from the person's being a body (otherwise bodies would all be active in the same way), so it is understood that that is due to a potential that obtains in him. So the judgment is made that scammony in our land causes a purging of yellow bile when the one affected is correctly disposed.

We can note the embedded peripatetic assumptions that identify causation in nature (always or for the most part). Rāzī claims that such a judgment that combines observation and reasoning does yield certainty, whereas simple induction does not.

⁵⁷³ *Sharḥ* (Logic), 262 ff.

⁵⁷⁴ There is an analogy here to the way in which reasoning is needed to correct mistaken sense impressions.

⁵⁷⁵ *Sharḥ* (Logic), 263.

He has of course imported a very significant restriction, ‘in our land’. This detail anticipates an objection. Suppose that the only humans around were in the Sudan. Repeated experience would show that humans were black. So, either this necessitates (*yūjib*) the firm belief that all humans are black, or it fails to do so. In the latter case the repetition fails to provide belief and so it is no use. In the former case it does provide belief but the belief is (as we know) wrong. So empirical reasoning is just as unreliable as induction.⁵⁷⁶

Rāzī’s solution distinguishes between ‘absolute universal knowledge’ and ‘conditional universal knowledge’. His account suggests that knowledge of such restricted universals in nature is firstly a matter of knowing conjunctions of properties, rather than knowing underlying connections, and secondly that restricted universals may or may not be related to ‘real’ universals that obtain (as natures for instance) in all worlds beyond our experience. Nevertheless, the entailment relation stands,

The item that recurs in the senses, in the same form that it recurs in the senses, *entails* the sensed effect for the most part.

Rather than make a Humean point that this is a weak association by concomitance, he suggests a restriction that roots the entailed accident in biological causation. Skin colour goes with parentage. This is a restricted universal, but it is fully part of a world of natures. More Humean is ‘in particular countries’. But once the due restriction ‘for the most part’ has been made, this judgment is always, and changelessly certain (*yaqīn*).

The case prompts Rāzī to highlight two common errors in empirical reasoning. The first is to mistake an accident for the essence (as in the case of a human’s being a particular

⁵⁷⁶ The universal statement in the objection must be read as a statement about all possible humans, rather than about the set of all actual humans in the imaginary world, so that the statement ‘all humans are black’ would identify an essential property or an essential entailment of ‘being human’. This is what we (in our real world) know to be false.

colour). The second is to fail to match cause and effect (or entailed accident) with the correct level of specificity.⁵⁷⁷ Rāzī does not reject peripatetic models of the relationship of the general to more specific, but he is clear about how we can make mistakes in evaluating relationships of causality and entailment that depend on them.⁵⁷⁸

So we can be objectively certain that, within our experience, a particular kind of thing produces a particular effect for the most part, but we cannot be sure that everything that carries that description causes that effect.⁵⁷⁹ Particular sensory observations plus the syllogism do not yield universal certainty, but certainty ‘for the most part’, and restricted to the environment in which the observations have been made.⁵⁸⁰ This is his epistemological point. He does not deny a peripatetic framework of essences, genera, natures etc, but he does deny that we can be sure that we have nailed *all* such relationships correctly with our particular, limited observations. His logical point is that once you put those restrictions in, you *do* have an indefeasible, eternal universal claim. Remove them and you are left with probable belief (*ẓann ghālib*).

This leaves the question, whether it is possible to have certainty about an unrestricted universal claim. Here he invokes Ibn Sīnā’s agent intellect as the demonstrator that (may) provide objective certainty in *all* cases.⁵⁸¹ Unrestricted universal certainty in science can only come from a higher cause (*sabab*). Once again, in spite of their differences of detail on the psychology of knowledge, Ibn Sīnā and Rāzī seem not that far apart in the

⁵⁷⁷ If the people of a particular tribe speak ancient Greek, we might mistakenly suppose that they speak ancient Greek because they are human. We might equally mistakenly suppose that they only speak at all because they are members of that tribe.

⁵⁷⁸ *Sharḥ* (Logic), 264. This elucidation has its roots in Aristotle’s discussion of causality *per accidens* in *Physics* B, 3, 195a26-195b30.

⁵⁷⁹ Sc. given that we might mistake essentials for accidents or fail to recognise whether the relevant property lies in a genus or a species.

⁵⁸⁰ In doing so, he is elucidating an Avicennan position, see McGinnis 2008: 146-147. The knowledge obtained by methodic experience (*tajriba* or empirical reasoning) is conditional to the domain under which an examination is made, and in the light of new data, claims may need to be revised.

⁵⁸¹ *Sharḥ* (Logic), 264-265.

process that leads to proposing an absolute universal and in the need for celestial agency to transform it from ‘probable’ knowledge to certain knowledge.

For Ibn Sīnā, the elements of human knowledge acquired through the senses are assembled into pre-universal sets in the reckoning faculty (*wahm*), but this only yields knowledge of universals ‘in potential’ (*bi-quwwa*) and cannot be transformed into actual knowledge of universals without the action of Ibn Sīnā’s ‘agent intellect’. An analogy is the sun illuminating a room that the healthy eye, previously in darkness, has been unable to see.⁵⁸² The assembled particulars must be sufficient to prepare the ground for the transformational intervention of the agent intellect. There are no new facts added by the intervention.

Rāzī, does not accept Ibn Sīnā’s psychology in which the common sense (*al-ḥiss al-mushtarik*), the imaging faculty, (*khayāl*), and the reckoning faculty, (*wahm*) belong to the material soul and so cannot grasp universals. So here he seems to be creatively reinterpreting Ibn Sīnā’s narrative. He allows that empirical reasoning prepares for the reception of the certainty that a universal is indeed an unconditional universal, pointing out that receiving that certainty is not like the entailment of a syllogism.⁵⁸³ However, he is clear that the conditional universals yielded by empirical reasoning and practical science are indeed real universals, albeit restricted ones.

When Rāzī says that the transition from a conditional universal to an unconditional one is not like the entailment of a syllogism, this is quite in accord with Ibn Sīnā’s image of the light in the darkened room. No new sensory facts are added, nothing changes about the world, but assurance is granted. The change is from the epistemic probability of the absolute universal claim to epistemic certainty. There may be an implication that

⁵⁸² See for instance *Shifāʾ* (*ʿilm al-nafs*), V, 5, (231-235), 231-232.

⁵⁸³ *Sharḥ* (Logic), 265.

achieving epistemic certainty is not a foregone conclusion, that Rāzī's higher power may have more freedom than Ibn Sīnā's, but the solution to the problem of acquiring unrestricted universal knowledge is fundamentally the same.

Rāzī's discussion of Avicenna's insight or 'correct guessing' (*ḥads*) is similarly creative. Ibn Sīnā distinguishes *ḥads* from the similar *tajriba* on two grounds.⁵⁸⁴ *Ḥads* is 'a powerful insight in the soul, such that with it all doubt ceases and the mind submits to it'. This is, however, not communicable to someone who does not have access to the relevant consideration that 'necessitates' (*mūjib*) the insight, or is unable to verify the facts. He gives the example of working out from the structure of the moon's light that it comes from the sun.

Gutas has argued that this 'Correct Guessing' is central to Ibn Sīnā's conception of how the true philosopher-scientist operates. He analyses a series of passages suggesting that *ḥads* is the primary means by which new knowledge is acquired and in virtue of which the able philosopher can pass judgment on traditional or 'school' opinions. One can either learn the middle term of an explanatory syllogism by instruction, or one can have the insight that enables one to work it out for oneself.⁵⁸⁵ Those with facility in correct guessing receive it effortlessly as a 'divine effluence' (*fayḍ*) through a connection of the intellect. Those with less facility have to work things out more laboriously through a process of empirical reasoning.⁵⁸⁶

Gutas' material throws up two important points, one theological and one philosophical. Theologically, Ibn Sīnā clears space for the figure of the prophet, one who is able to master all knowledge and instruct humanity, because of their excellent contact with

⁵⁸⁴ *Sharḥ* (Logic) 254.

⁵⁸⁵ Gutas 1988: 181.

⁵⁸⁶ Gutas 1988: 187-188.

the active intellect.⁵⁸⁷ Philosophically, since insight into the truths from the intelligible realm comes through the instantaneous grasp of the middle term of a syllogism, ‘the structure of reality is syllogistic’.⁵⁸⁸

Rāzī picks up on this last idea in his commentary. *Ḥads* is when the mind moves swiftly to grasp the middle term (of a demonstration) spontaneously (*tilqā’a nafsihi*).⁵⁸⁹ He explains Ibn Sīnā’s elliptic remark connecting it with empirical reasoning, as meaning that insight is equally the result of repeated sense observations together with a syllogism. He illustrates by spelling out the reasoning that enables someone to recognise that the moon’s light derives from the sun.

However, Rāzī’s interpretation is significantly different from Gutas’.⁵⁹⁰ He seems uninterested in the subjective qualities that might make one human more open to insight than another. What distinguishes insight from empirical reasoning is not closeness to an agent intellect, but the origin of the events under observation. Where they do not depend on human agency, as is the case of the phases of the moon, *ḥads* is possible. Where humans have to engineer repeated experiences (as in the case of the scammony and the purging) we have empirical reasoning.

Perhaps, the distinction leaves astronomical science with a different status to an earthly science like (for instance) medicine. The boundary between the human activities of reasoned observation and the divine gift of universal knowledge may be more porous in the eternal regularities of the celestial realm. Or it may be the case, as Noble suggests, that Rāzī is working out of a different concept of what it means to be a philosopher and a prophet, based not on a general acuteness of mind or closeness to the agent intellect, but on species

⁵⁸⁷ Gutas 1988: 185.

⁵⁸⁸ Gutas 1988: 198.

⁵⁸⁹ *Sharḥ* (Logic), 265.

⁵⁹⁰ *Sharḥ* (Logic), 265-266.

of soul and special relationship with celestial archetype.⁵⁹¹ In that case *ḥads* does not have the same soteriological rôle for him as for Ibn Sīnā and is presented more prosaically as a special case of the general way we come to know the structures of the world.

Rāzī adds an important clarification at the end. Some might argue that this account of insight makes the statement about the relation between the moon and the sun analytically necessary (*ḍarūrī*), unmediated knowledge. Rāzī rejects this, referencing Ibn al-Haytham, the geometrician as a source. Astronomical truths may be universal and reached with insight, but that does not make them self-evident truths. The fact that the reasoning process may be instantaneous does not mean that we have not had to deploy the middle term of a syllogism in order to discover something new.

§6.3 Conclusion

Rāzī is optimistic about knowing at least some parts of reality. We can identify simple essences (black, tall, in the house) and their properties and use them to build up a reliable profile of complex essences and their properties. We can isolate, name, describe, and enquire after natural kinds and their entailed attributes. We can do all of this by observing regular, concomitant properties at the appropriate level of generality and specificity. The necessity that guides the sure conclusions of our arguments is rooted in a necessity that runs through the natural order. We can acquire knowledge (a form in our mind) of a cause in nature. Everything that is there is there because something has made it so, whatever the nature of the source of the necessity.

However, there is plenty of room within this for epistemic uncertainty about our conclusions. The first and most obvious is in the case of induction and empirical reasoning. The former can never provide more than a belief, while the latter can only provide

⁵⁹¹ Noble 2021: 229-234.

certainty with respect to the sample we have examined in formulating. A general universal claim may be probable, but only a restricted universal will be certain. Sometimes we will struggle to move beyond the observable entailed accidents of a kind and be unable to isolate the complete set of essential properties that allow us to offer accurate accounts and explanations. Sometimes mistakes will occur in our empirical reasoning because we treat an accident as if it were essential.⁵⁹²

There are of course other reliable sources of knowledge alongside syllogistic reasoning. Indeed much syllogistic reasoning depends on them, for instance widespread reports (*al-qaḍāyā al-tawāturīyya*) and widely-accepted facts (*mashhūrāt*).⁵⁹³ The level of certainty (*yaqīn*) we can have in the former is limited by the level of confidence (*jazm*) we have in those reporting. The latter seem like axioms (*awwaliyyāt*) but are not so (his examples are of ethical beliefs), and other, psychological causes may be in play – delicacy, pride, passion, custom, general benefit. Widely-accepted facts can be true and false. Subjective certainty (*jazm*), accordingly, is unreliable. This is of course where demonstrative arguments and proofs come into play, to justify claims that are being questioned. But even here:⁵⁹⁴

In every school of doctrine there are things that are well-known facts within them, that may not be well-known facts in different areas of teaching.

All of this points to a more nuanced approach to the status of scientific and philosophical knowledge than presented by Ghazālī in the *Tahāfut*. For the former the tone of the contemporary debate is confrontational and *falsafa* very much means a narrow reading of Ibn Sīnā. Rāzī on the other hand, has had the benefit of a century for things to

⁵⁹² *Sharḥ* (Logic), 264.

⁵⁹³ *Sharḥ* (Logic), 266-268.

⁵⁹⁴ *Sharḥ* (Logic), 269.

calm down and evolve. His engagement with Ibn Sīnā is both positive and critical in a way that respects the wider intellectual culture of which Avicennan *falsafa* is a part. He has the space to develop a philosophical epistemology that responds to the concerns of science and of *kalām* in a coherent and credible way.

Part III

Physics and Cosmology in the *Muḥaṣṣal*, the *Maṭālib* and the *Sharḥ*

Introduction to Part III

Rāzī's systematic attempt to integrate Ash'arī concerns with natural science in the *Mabāḥith* presents a freely choosing God who creates a universe of material (minerals, plants, animals, celestial spheres) and non-material entities (souls and possibly intellects) that runs with an internal deterministic, instrumental causality. The instrumental causes include both inanimate natural objects (rising flames and cooling water) and animate agents, who activate their capacities according to their causally generated motivations. Subordinate agents in the world produce motion or accidental change but only higher agents produce substantial change in suitably prepared materials, whereby entities become a different sort of thing. Whether it is God who directly intervenes to produce that transformation ('our' - Ash'arī - view) or some other celestial agent, like the agent intellect (the Avicennan view) cannot be resolved by philosophical argument.

Central to Rāzī's embrace of a modified Avicennan system is the *a priori* concept of necessity, vital to the proof of the existence of God, centring on the notion of 'necessity of the fact'. He rejects the Ghazālian objection that God's free choice and the possibility of miracles imply that any given factual state of the world could be otherwise. That 'could be otherwise' reflects our epistemic state, not a fact in the world. Our calculation of what to expect from a given causal nexus may miss hidden elements in that nexus. The unexpected can always happen.

Bilal Ibrahim proposed that Rāzī's earlier scientific works represent an intellectual shift from an 'essentialist' to a 'phenomenalist' physics. This would imply a more provisional, Ash'arī-friendly approach, with natural causality dissipated among objects classified as bundles of observable accidents. On our reading Rāzī's approach does indeed recognise the epistemic priority of the inner and outer perceptions of direct experience over peripatetic explanatory definitions. However, he also holds that universals exist in

particulars and are accessible to minds there. This is bound up with his theological rejection of Ibn Sīnā's separation between the intelligible and material realms.

Practically his narrative of the acquisition of universals seems remarkably similar to Ibn Sīnā's, whether universals as *a priori* concepts, essential definitions, explanatory definitions or explanatory, scientific syllogisms. The discussion of the *Sharḥ* did leave an interesting gap between the notion of a naturally acquired limited universal, and a celestially inspired absolute universal, but this seems simply to reflect limitations of scientific enquiry and its need to work with widely accepted doctrines, limitations recognised by Ibn Sīnā and others in the wider philosophical tradition.

In this Part, we ask whether Rāzī's mature work marks a radical shift away from that Peripatetic world-view and the causality embedded in it, in favour of classical Ash'arī views or whether it otherwise shows scepticism about the value of philosophy science.

In the *Muḥaṣṣal* and the *Maṭālib* we will find a radically non-Avicennan approach to time, body, space and dimension. In the *Physics* of the *Sharḥ* we shall see serious criticism of standard Peripatetic accounts of the transmutation of elements. The cosmology of the *Maṭālib* will offer space for an Ash'arī account of direct divine intervention. However, Rāzī is clearly more interested in challenging Ibn Sīnā's account of a single agent-intellect governing the sublunary world in favour of an astrological account involving multiple embodied, celestial agents.

The *Maṭālib* offers an alternative approach to the hard questions about the origin of the world and the resurrection of the body, whose answer in the *Mabāḥith* might have appeared less than satisfactory.⁵⁹⁵ The theories of Rāzī's namesake, Muḥammad ibn

⁵⁹⁵ For Griffel's judgment on the *Maṭālib* in the scheme of Rāzī's thought as something that goes beyond the *ḥikma/kalām* divide see Griffel 2021: 544-547. Rightly or wrongly this study works on the premise that it is indeed here (as Griffel ponders) that we have the best chance of finding what Rāzī really thinks.

Zakariyya al-Rāzī, and the discussions of Abū l-Barakāt al-Baghdādī will prove significant in the background.⁵⁹⁶ The *Maṭālib* will also offer an account of the relation between rational and inspired knowledge, alongside a rather broader set of primary propositions (*darūriyyāt*) than appears in his earlier work.

Rāzī is enthusiastic about a model of the universe that fuses elements from atomist traditions (including the *kalām* ones) with elements from the hylomorphic traditions, and makes space for the ancient practices of astrology. At the same time, he exploits the limitations of philosophical argument to find space that permits classical Ash‘arī views, without confirming or denying them. He is more interested in drawing on a wider understanding of philosophy as a common rational project that embraces ideas and arguments from a variety of traditions, than engaging in the narrow debate between *kalām* and *falsafa* that seemed so important to Ghazālī’s generation.

⁵⁹⁶ For Rāzī’s intellectually adventurous C10th *Landsmann* see Adamson 2016a: 48-54.

Chapter 7 The Substructures of the Universe in the *Maṭālib al-‘āliya*: Time, Body, Space, Dimension.

Aristotle proposed that body, time and motion were infinitely divisible *in potential* and in correlation to one another, in order to solve Zeno’s paradoxes of motion.⁵⁹⁷ Thus we can cross from one side of the room to another without *actually* traversing an infinite number of points. The mutakallim atomists choose the inverse solution. Time, body and motion are actually divisible, but only *finitely*. Again, you do not need to traverse an infinite number of points. Their solution, however, splits physical geometry from theoretical continuous geometry.

In the *Mabāḥith* Rāzī followed the Peripatetic solution and rejected (largely on geometrical grounds) the competing *kalām* account. Because he accepted the eternity of time and its status as an accident, ultimately dependent on body, he found himself committed to a world that was created but eternal. In the later *Muḥaṣṣal*, his treatment of the debate between peripatetic continuous body theory (using the notion of bodily form) and atomism favours the *kalām* account, though referencing the parallels with Democritean and Pythagorean atomist traditions. In the comprehensive *Maṭālib*, the same arguments appear in elaborated form and with some huffing and puffing, Rāzī affirms an atomic substructure for physical bodies, in spite of the physical problems this might raise.

§7.1 Atoms without Occasionalism?

But why? In the context of the *Muḥaṣṣal* the presence of atomism may have more to do with supporting the target audience in a reassuringly familiar doctrine, or an acknowledgement of the fragility of both positions noted by Ibrahim.⁵⁹⁸ But the *Mabāḥith*

⁵⁹⁷ For Rāzī’s recognition of this Aristotelian principle, see Setia 2012: 14.

⁵⁹⁸ Ibrahim 2020: 78.

made clear that the issue is not significant for the key theological concerns (the free action of God and God's knowledge of particulars). Unambiguous support for Ash'arī occasionalism is therefore unlikely to be his prime concern. I want to suggest four possible reasons why, in the end, he chooses atomism over Ibn Sīnā's theory of continuous matter constituted by a prime matter, 'bodily form' and a 'species form'.

The first reason is apologetic. The *Maṭālib* presents an extended argument for the existence of God based on possibility (contingency), but for the argument to work, all bodies have to be equivalently open to receiving all properties.⁵⁹⁹ The Avicennan theory of species-forms gives the indestructible celestial bodies a radically different status from the elemental bodies that transmute into each other.⁶⁰⁰ The atomic theory however gives all bodies the same status and the same openness to bearing all possible properties.

The second is to do with everyday physics. The peripatetic account of dividing bodies is incoherent. According to Rāzī's Peripatetics, place and volume are properties that derive from the formal 'bodiliness' of bodies and belong, derivatively, to a single continuous substance. That means, however, that when you pour one volume of water into two buckets, you destroy one substance and create two new ones.⁶⁰¹ We can avoid this counter-intuitive claim by supposing that volume is a relation of aggregated particulate bodies to a space that is distinct, particulate and equally primary.

The third reason is his apologetic commitment to the reality of time as a distinct entity in the universe.⁶⁰² Since only what is present exists, future time does not exist and

⁵⁹⁹ This is the Ash'arī-friendly aspect of the argument. For the explicit connection see *Maṭālib* VI, 189 at the end of a long sequence of argument dealing with the challenges to atomism.

⁶⁰⁰ There are of course other apologetic reasons for rejecting the indestructibility of the spheres, namely because that would challenge the scriptural narrative of the apocalypse.

⁶⁰¹ *Muḥaṣṣal*, 272; *Maṭālib* VI, 23.

⁶⁰² I am grateful to Francesco Zamboni for pointing out that Rāzī's concern with time conceptually drives the argument for the atomic body in the *Maṭālib*. Its thorough treatment at the beginning of Book 5 precedes the

past time does not exist. If, as Aristotle suggests, time is the number of motion and 'now' is an extensionless point bounding the past and the present, then 'now' has no existence. If this present 'now' has no existence then no other 'now' past or present ever had any existence either, so time cannot exist. This raises a problem for how God can have knowledge of all events at all times if none of them has ever existed. The solution is for the present time to be an atomic 'now' and for time as a whole to be the succession of atomic 'nows'.⁶⁰³ But once you have finitely divisible time, for motion to be possible (and to resolve the Zeno paradoxes) you also need finitely divisible motion and body.

A fourth, enabling, reason is perhaps scepticism about the relation between idealised geometry and physics.⁶⁰⁴ The reasons advanced for infinite divisibility of bodies in the world all assume mathematical perfection has to be real in the world. But just as Ibn Haytham was able to suggest that Ptolemy's perfect geometry of motion did not fit the physical facts, Rāzī similarly is prepared to accept that the arguments concerning the monadic substance are so compelling that we have to reject the arguments of ideal, continuous geometry.⁶⁰⁵

There are occasional passages of Ash'arī-friendly discourse the *Maṭālib*. However, numerous contrary indications suggest these do not commit Rāzī to an occasionalist universe of bare atoms carrying bundles of momentary atomic properties, at least not as Ash'arī himself would have intended.

discussion of prime matter in Book 6. For the background to the idea of time as substance in Galen and Mohammed Ibn Zakariyya al-Rāzī see Adamson 2012: 1-14. Rāzī's arguments for a time compounded of atomic 'nows' are given in *Maṭālib* V, 69-76. Note the correlation of the reality of now and the moment of existence.

⁶⁰³ We can recall Abu al-Hudhayl's use of a discrete 'now' in his account of action, reported by al-Ash'arī at *Maqālāt* I, 301-302, 305.

⁶⁰⁴ This point is more speculative.

⁶⁰⁵ *Maṭālib* VI, 156-158. E.g. Ibn Haytham, *Shukūk 'alā Baṭlamyūs*, 19. The hypothetical diameter and surface of the world-epicycle cannot have an effect in the real, perceptible world.

Firstly, his discussion of atomism in Book VI comes under the heading of a discussion of prime matter (*hayūlā*), the peripatetic term. He acknowledges formal gradations of matter: the material that is given form by craftsmen, the natural material (the elements) that acquire higher forms (animal, vegetable, mineral), universal matter (bare, space-occupying matter without formal properties), and prime matter.⁶⁰⁶ The question of prime matter as a notional substructure is separate from scientific accounts of the behaviour of complex visible bodies.⁶⁰⁷

Then three scattered remarks make explicit what is implicit in much of the material of the *Maṭālib*. At the beginning of Book IV we find a telling variation on one of the maxims of *kalām* ontology. Instead of the familiar ‘there are three things that exist, atoms, accidents and God’ we find:⁶⁰⁸

Either the existents will be in a location (*ḥayyiz*), or they will be inherent in something that is in a location, or else they will not be in a location nor inherent in something that is in a location.

In classical *kalām* there is only one candidate in the last category, namely God. Rāzī, however, points out there is no proof for that claim and in the course of the *Maṭālib* will propose three other candidates, namely souls, time and space itself.⁶⁰⁹ This is clearly not an Ash‘arī ontology.

His introduction to the argument from design offers a second pointer.⁶¹⁰ Though the classical argument from embryology supports an occasionalist perspective, Rāzī points

⁶⁰⁶ *Maṭālib* VI, 5-6.

⁶⁰⁷ Ibrahim talks about Body 1 and Body 2. Body 1 is the notional substructure. Body 2 refers to the objects extended in space of scientific exploration. Ibrahim 2000: 76.

⁶⁰⁸ *Maṭālib* IV, 9.

⁶⁰⁹ *Maṭālib* IV, 12.

⁶¹⁰ *Maṭālib* I, 215-216

out and celebrates stable and repeated features of the heavens and the earth that benefit humanity. Rāzī has clearly noted the tension in the Ash‘arī position. Were they not stable and repeatable, we would not be able to point them out and use them as evidence for the beneficent creator:⁶¹¹

As regards the elemental bodies, these are either simple or complex. In the case of the simple bodies, we enquire about the states of the four elements and their combination and attributes and the wonderful and beneficial quality that God on high has assigned (*awda‘a*) to them.

He waxes similarly lyrical over the features of animal and human bodies as a preface to the proof from embryology. The ‘beneficial quality’, however, has been ‘assigned’, (from the context) on a universal, not an occasional basis. It is through such universal, stable properties that the beneficent will of God is revealed.

A third indicator (from towards the end of the *Maṭālib*) appears in a discussion about God’s knowledge and human agency:⁶¹²

Everything whose happening is known necessarily happens and everything whose non-occurrence is known necessarily doesn’t happen. All of that we have already established. So we say, since this is the case, necessarily that necessity will be either be because God on high has tipped it into existence rather than non-existence, or because God on high created something that necessitated its happening, either through some intermediary, or without any intermediate thing, and on each of these suppositions our aim is achieved.

He does not exclude an occasionalist Ash‘arī explanation for God’s knowledge of human actions. But he makes clear that the apologetic goal can just as easily be reached by

⁶¹¹ *Maṭālib* I, 215-216.

⁶¹² *Maṭālib* IX, 63.

allowing that God works through intermediaries as by supposing that God does everything directly. We shall see multiple instances where his account of the universe presupposes just this, indicating what he regards as the more intellectually robust view.

Let us now turn to the detail.

§7.2 Why Choose Atoms? Time.

§7.2.1 The *Muḥaṣṣal*: leaving the *Mabāḥith*

In the *Mabāḥith* Rāzī follows Ibn Sīnā. Time's reality (*zamān*) is dependent on motion and therefore dependent on matter. That leads him to accept the eternity of the physical world. The *Mulakhkhaṣ* we noted, accepted the peripatetic account, but suggested a more non-committal approach to the (non) eternity of the world based on the notion of a 'before and after' that is neither temporal nor causal. In the *Muḥaṣṣal* Rāzī critiques the position of the Peripatetics using old-established sceptical arguments, as redeployed by the Mutakallimūn. His conclusion is thus *kalām*-friendly but is not yet the final position that he will take in the *Maṭālib*.

The *Muḥaṣṣal* begins by attacking the idea that time, as a relation, can be real.⁶¹³ The philosophers propose that relations ('before and after', 'simultaneous') are substantive (*thabūti*) existent attributes. This is the basis for Ibn Sīnā's claim that *zamān* (extended time) is real. The Mutakallimūn, however, deny the existence of relational accidents, mostly with hypostatisation arguments leading to an infinite regress. If a relation is a substantive thing, then it is in a relation to other substantive things, and so you create another relation that is a real thing... and so on.

⁶¹³ *Muḥaṣṣal*, 219ff. For ancient sceptical parallels, see Sextus, *Against the Logicians* II §453, 474ff. Relations only have a conceptual, not a real existence.

In the background is an Ash‘arī theological concern arising from an interpretation of God’s attributes as relations. If God’s relational attributes (knowledge, action, simultaneity) are substantive, then as they change, so does God’s essence, ‘this would entail the coming to be of an attribute in the essence of God most high and this is absurd’.⁶¹⁴ Importantly, this is not an argument against the reality of a time rooted in the present moment (*al-ān*) which Rāzī already favoured in the *Mabāḥith*, but against the reality of the *relationship* between that moment and God.

Rāzī’s discussion of the Aristotelian maxim ‘time is the number of motion’ deploys identifiable sceptical arguments.⁶¹⁵ We correctly use the language of time, speaking of God and events existing before and after, but time itself, whether a relation or a ‘now’, is not a real existent.⁶¹⁶

The first argument considers time as an enduring, independent substance.⁶¹⁷ Time is either stable (*qārru*) or unstable. If it is stable, then the time of the flood will be the same as time now. Since this is clearly not the case, it cannot be stable. However if it is not stable, then it will have a before and an after, thus time[1] will be in time[2] and if time[x] were real, that would entail a real regress.

The second argument effectively challenges the position Rāzī implies in the *Mabāḥith*, and highlights the central issue of the connection between time and body.⁶¹⁸ Time is either past, future or present (*ḥāl*). The first two do not exist. For time to exist, it must be constituted by the successive ‘nows’ that come to be and pass away in an instant

⁶¹⁴ *Muḥaṣṣal*, 219.

⁶¹⁵ Sextus, *Against the Physicists* II, §207, 312 (the paradox of time within time); for the paradoxes of simultaneity if time is stable see §212, 314–315; *Muḥaṣṣal*, 224 ff. Note parallels with the ‘generable/ingenerable’ arguments recorded by Sextus, *Against the Physicists* II §206–§214, 312–315.

⁶¹⁶ *Muḥaṣṣal*, 225; 226–228 (time as measure of existence).

⁶¹⁷ Compare Sextus, *Against the Physicists* II, § 191. Sextus talks of ‘limited’ and ‘unlimited’ rather than perduring and non-perduring. Aristotle *Physics* IV, 10, 218a25–30.

⁶¹⁸ Compare Sextus, *Against the Physicists* II §204, 312. See also Aristotle, *Physics* IV, 10 (217b 33–218a3)

(*daʿa*). But if the ‘nows’ are infinitely divisible, their parts have no extension and cannot exist with simultaneity. They would no longer be ‘nows’. The ‘nows’ in the succession must therefore be indivisible. He then adds a peripatetic (and anti-*kalām*) point ‘so that would entail that the body was composed of a sequence of points. This is ridiculous.’⁶¹⁹ This is, however, exactly the view he will finally adopt in the *Maṭālib*.

The third argument begins with a conditional proof for the necessary existence of time. If time exists, then necessarily it exists. However, since time is made up of ‘nows’ that come to be and pass away, clearly it does not necessarily exist. It follows that time does not exist.

The fourth argument challenges Abū Barakāt al-Baghdādī’s proposal that time is the number of *existence*. The problem is that both changeless God and mutable world relate to time. ‘It is impossible for it to be the number of the purely existent, because in itself, if it were being continually renewed, then it would not correspond to what was stable (*thābit*), and if it were stable then it would not correspond to what is subject to change’. There is a fundamental problem in conceiving the relationship between time and eternity that Rāzī’s fully developed theory in the *Maṭālib* will aim to solve.⁶²⁰

The final argument challenges the peripatetic account of time directly. Ibn Sīnā suggested that time, as an accident, has a derivative reality through the bodies in motion on which it supervenes.⁶²¹ The challenge plays on the principle that ‘an existent cannot subsist in a non-existent’. The baldness of the king of France cannot be real if the king of France does not exist. It begins by assuming Aristotle’s connection between time and motion. It adapts the definition from ‘the number of motion’ to ‘the number of the

⁶¹⁹ *Muḥaṣṣal*, 225, 11–12.

⁶²⁰ Elements are anticipated in the discussion of time and eternity at *Muḥaṣṣal* 213–215.

⁶²¹ Rāzī credits Afḍal al-Dīn al-Ghīlānī with this argument against the Peripatetic position.

extension of motion' (*imtidād*).⁶²² Rāzī then agrees with Ibn Sīnā, that the extension of motion never exists among particulars (*fī l-a'yān*).⁶²³ He concludes 'since the extension of motion has no existence in the particulars, then neither does the number of its extension have any existence' (applying the baldness principle).⁶²⁴

A constant undercurrent to these arguments is the correlation between 'existent' (*mawjūd*) and 'present' (*ḥāḍir*), alongside the different subjective approaches to *ḥāḍir*, *al-ān* and *waqt* found in Ibn Sīnā, Abū l-Barakāt and some of the Mu'tazilī authors. A phenomenal time constructed out of the moments of experience and action of agents takes centre stage. Out there is motion, extended in space, for all to observe. Such time, however, can only be a derivative, *notional* construction out of the sum of successive, perceptual 'nows'. Unless of course there exist minimal entities other than God that are neither bodies, nor inherent in bodies.

In an earlier discussion of the problem of pre-eternals, we catch a glimpse of where Rāzī will eventually go.⁶²⁵ He notes the Mu'tazilī doctrine which glosses pre-eternity (*qidam*) as reality from everlasting time (*'azl*).⁶²⁶ He then points out the problem highlighted by Wisnovsky. Standard arguments against the pre-eternity of other entities only apply to pre-eternal, all-powerful, necessary beings.⁶²⁷ So there cannot be two pre-eternal Gods, but there may be other pre-eternals that are not God-like. He then presents the doctrine of the *Ḥarāniyyūn*.⁶²⁸ There are five pre-eternals: God, soul, matter, eternity (*dahr*), and space

⁶²² See Ibn Sīnā, *Physics*, II, 11, (3), 232.

⁶²³ Ibn Sīnā bases the reality of motion on the momentary 'being between' two points on a trajectory. The reality of extended time is derived from the reality of the *trajectory* not on the (notional) extended *motion*.

⁶²⁴ *Muḥaṣṣal*, 228, 3–4.

⁶²⁵ *Muḥaṣṣal*, 208–213.

⁶²⁶ *Muḥaṣṣal*, 211.

⁶²⁷ *Muḥaṣṣal*, 212.

⁶²⁸ *Muḥaṣṣal*, 212 (also 280). 'Sabians', see van Ess 1991-7 (II): 442ff; Noble 2021: 608; Dhanani 1994: 72.

(*faḍā*). Elements of this ontology, promoted by the philosopher Muḥammad ibn Zakariyya al-Rāzī, one of Rāzī's reference points, will emerge from the discussions of the *Maṭālib*.

§7.2.2 Beyond *kalām*: Pre-eternal atomic Time in the *Maṭālib*

Adi Setia and Peter Adamson have both analysed elements of the long discussion on time in the *Maṭālib*.⁶²⁹ Adamson focuses on how Rāzī approaches the question of time's existent reality. Setia presents Rāzī's full-blown account of time as a continuous flow of atomic 'nows' in the context of the interrelated arguments for atomic motion, atomic distance and atomic matter. More recently, Adamson and Lammer have also provided a comprehensive analysis of Rāzī's arguments for a 'Platonic' nature of time.⁶³⁰ Adamson highlights how Rāzī ultimately relies on the reality of the moment as a primary concept (*ḍarūrī*) in contrast to Ibn Sīnā's treatment of it as a notional product of the reckoning faculty (*wahm*).⁶³¹ We can see the continuity with Rāzī's distinctive position in the *Mabāḥith* and the familiar privileging of ineluctable data of consciousness over second-order explanatory concepts. Many of the arguments that appear in the *Maṭālib* reprise earlier discussions. The conclusion, however, is something new. As Setia points out, it is tied to a thoroughgoing atomism, but with a distinctive, non-partisan motivation.

Rāzī begins his discussion with a daunting list of twelve arguments against the existence of time.⁶³² Much material echoes the arguments of the *Muḥaṣṣal*.⁶³³ The positive arguments for the reality of time are divided into two blocks. The first consists of ten immediate or intuitive reasons for believing that knowledge of time (and matter) requires 'no argument or derivation'.⁶³⁴ The older Rāzī is referenced. This section leads into a

⁶²⁹ Adamson 2018b: 65–98; Adi Setia 2012: 393–409.

⁶³⁰ Adamson and Lammer 2020.

⁶³¹ Adamson 2018b: 91.

⁶³² *Maṭālib* V, 5–107.

⁶³³ *Maṭālib* V, 9–19.

⁶³⁴ *Maṭālib* V, 21–26.

refutation of claims that time has anything to do with motion.⁶³⁵ The second block of four arguments, taken from Ibn Sīnā, provides derivations for the existence of time.⁶³⁶

The ‘intuitive’ block makes use of a wider range of *ḍarūriyyāt*, (ineluctable cognitions). Direct knowledge of time comes either from an inner awareness or is the analytical consequence of intuitive concepts, like ‘before’ ‘after’ ‘simultaneous’ ‘coming to be’ ‘enduring’ ‘generable’ ‘pre-eternal’. All humans, regardless of intellectual capacity, are able to date events. The language of *badīhiyyāt* or *ḍarūriyyāt*, points to instinctive or inborn knowledge due to human nature (*al-fiṭra al-aṣliyya* or *gharāʾiz*).⁶³⁷ The tenth of these arguments, based on our recognition of fast and slow, leads him to a positive conclusion and its corollary:⁶³⁸

Since it is established that knowledge of interval and time is primary intuitive knowledge, we say that this interval cannot be a term for the motion of the sphere, nor a term for any of the properties of one of the motions of spheres.

He then fulfils an earlier promise and presents eleven arguments to challenge the derivation of time from movement.⁶³⁹ Each example illustrates how our awareness of time is epistemically prior to our awareness of motion. The definition of motion implies time, but time does not imply motion.⁶⁴⁰ Rāzī is careful to point out that it is not just a matter of time’s not being a specific motion (like motion of the great sphere), because this is something Ibn Sīnā himself rejects.⁶⁴¹ The set of arguments concludes that neither motion, nor any of its properties can be time. Rāzī offers the Peripatetics a consolation prize

⁶³⁵ *Maṭālib* V, 26–32.

⁶³⁶ *Maṭālib* V, 33–49. Some of the material can be found in Ibn Sīnā, *Physics*, II, 10 (5)–(12), 222–228.

⁶³⁷ The epistemological foundations of the arguments seem much more exuberantly naturalistic in this work than in the *Muḥaṣṣal* or in the logic of the *Sharḥ*.

⁶³⁸ *Maṭālib* V, 26. See Adamson and Lammer 2020: 108.

⁶³⁹ *Maṭālib* V, 18.

⁶⁴⁰ *Maṭālib* V, 30 (argument ix).

⁶⁴¹ Ibn Sīnā, *Physics*, II, 10, (12), 228.

however. Motion, whether of spheres or water clocks does not generate time, but it can be used to enumerate time by dividing it into parts and portions.⁶⁴²

The ‘derivative’ block of arguments for the existence of time considers four models: the first is time as extension, the second is time as that which is picked out by ‘before’ and ‘after’, the third is the intuitive awareness of past and future, the fourth is time as that which can be fixed by an identifiable event. The first two are robustly challenged (again). The latter two are affirmed. On the third model, our ability to fix moments in the past and future establishes that time, whatever it is, is not body-like or body-derivative. It is non-local and non-stable. Because it is thus radically different from stable bodies, ‘it is decisively necessary that this thing titled period (*mudda*) and time (*zamān*) is something entirely distinct from these things’.⁶⁴³ Rather than being a derivative of motion it is what ‘surrounds and contains motion’.⁶⁴⁴

The fourth model, fixing the moment by identifying events like sunrises, is familiar from *kalām*. However, Rāzī does not follow the *kalām* tradition which makes time a nominal entity identical with the (real) predication event. Instead, he argues that the fact that we can use events for the purposes of dating implies the existence of independent time. Time is a concept analytically derived from the intuitive notion of simultaneity.

Rāzī sums up the reasoning and the epistemology that lies behind it, appealing to the principles established in the *Nihāya*, that we reason from self-evident premisses to substantial conclusions:

Once we have reflected on our knowledge that fixing a time is something that everyone of sound mind judges possible, then once we have reflected on our knowledge that the possibility of this self-evident premiss necessitates the claim

⁶⁴² *Maṭālib* V, 32. For a similar view attributed in the Arabic world to Galen see Adamson 2012: 5.

⁶⁴³ *Maṭālib* V, 45.

⁶⁴⁴ *Maṭālib* V, 46.

that time exists by the argument that we have sketched, then this argument is one of the clearest proofs and strongest of demonstrations to establish this conclusion. And in God we succeed.

Rāzī then turns to the definitional essence (*māhiyya*) of time. The sequence of eighteen arguments repeats much of what has gone before.⁶⁴⁵ The discussion of whether time is a continuous or discrete quantity, eventually brings the focus back on the ‘now’ and reveals Rāzī’s favoured position.⁶⁴⁶

The conclusion is that past and future time are constructed of indivisible present moments, and these present moments are the indivisible ‘nows’. So time is a complex of indivisible ‘nows.’

He now openly accepts the consequence that bodies are constructed of atoms. Some may not like this, but ‘we do not accept that the claim affirming atoms is false’.⁶⁴⁷

Rāzī believes that this understanding of time is more ancient than the peripatetic account.⁶⁴⁸ Time itself, as a structured sequence of ‘nows’ does not flow, but the relation of events and entities to its successive parts does flow and change, analogously to the way the (non-real) relation of God to successive generables flows and changes. He states ‘this teaching is the most accurate of the teachings presented on the essence and reality of time’ and attributes it to ‘the Imām Plato’.⁶⁴⁹

⁶⁴⁵ *Maṭālib* V, 51–68.

⁶⁴⁶ *Maṭālib* V, 69–74; 74.

⁶⁴⁷ *Maṭālib* V, 74.

⁶⁴⁸ *Maṭālib* V, 76. The antiquity of arguments is an important factor for him.

⁶⁴⁹ For a similar attribution by the older Rāzī see Adamson 2012: 1–2. Rāzī’s access to the *Timaeus* was however mediated by the Arabic version of Galen’s reading of the dialogue, in which an eternal time is revealed, rather than brought into being by the first motion. Adamson and Lammer 2020: 109–110.

There are reservations. If we cannot conceive anything except in time, then time becomes something that exists necessarily of itself, making it a potential rival to God.⁶⁵⁰ The compromise is that time is neither a contingent generated by God, nor is it a necessary being to be identified as God. It simply exists in parallel to God and is independent of anything else, though through its changing relations of ‘before’ and ‘after’ it has an aspect of contingency.⁶⁵¹ We have immediate awareness of it, while its real essence is utterly hidden from us.⁶⁵² Like the soul and God, it is scientifically unknowable.

He supports his conclusion with scriptural texts and other ancient takes on time and eternity. Striking among these, in the light of how his ontology will unfold, is a reference to the Sabian notion of five everlasting, necessary beings that we first met in the *Muḥaṣṣal*, the older Rāzī’s set of God, soul, matter, time, space.

§7.2.3 Rāzī’s Approach to the Problem of Time.

The most obvious constant from the *Mabāḥith* to the *Maṭālib* is the emphasis on the ‘now’ (*al-ān*) as a ‘now’ of perception. This bridges the observations both of Ibn Sīnā and Abū Hudhayl, but draws a conclusion foreign to both, that time really exists.⁶⁵³ In fact, the ‘now’ and its existence join necessity, possibility, existence and the soul as an object of self-evident knowledge arising from the logic of our awareness.⁶⁵⁴ The objects of primary awareness are epistemically crucial and substantive, and underpin the metalogical arguments that give us necessary knowledge. Only in the *Maṭālib* the ‘now’ can no longer be an extensionless boundary between past and future, it must have a minimal extension in

⁶⁵⁰ *Maṭālib* V,77ff. See V, 13.

⁶⁵¹ Adamson and Lammer, apropos this set of puzzles, point out that in his Qur’ān commentary, Rāzī is able to declare God the creator of space and time, establishing its contingent yet eternal status theologically. Adamson and Lammer 2020: 119.

⁶⁵² *Maṭālib* V,77–80.

⁶⁵³ For the background to this view in John Philoponus, see Adamson and Lammer 2020: 113. That Ibn Sīnā in his own (very different) way was something of a realist about time, see Lammer 2020: 514.

⁶⁵⁴ *Maṭālib* V,84.

which moments of existence can be present. These atomic ‘nows’ connect and separate past and future, making time a complex whole, whose parts are never simultaneously present.⁶⁵⁵

Secondly, even though he has dismissed Ibn Sīnā’s account of time, he deploys his elucidation of three key terms for time. Ibn Sīnā explains that when we compare generables (*ḥawādith*) with generables, we get time (*zamān*); when we compare permanent entities with generables, we get the eon (*dahr*); and when we compare permanent entities with permanent entities, we get eternity (*sarmad*).⁶⁵⁶ Rāzī raises the question whether the eon is itself permanent or changing and highlights the fact that Ibn Sīnā comes down on the side of permanent. Thus Ibn Sīnā who started off following Aristotle ends up following Plato. The one time has three labels representing those three different sets of relationships. For Rāzī such positive convergence with opponents is a further indication of the soundness of a viewpoint.⁶⁵⁷

A third point is how his discussion of the origination of time in the *Maṭālib* relates to the problem of the eternity of the world.⁶⁵⁸ He presents yet again the arguments for the pre-eternity of time. But he now frames the debate as between ‘the majority of the philosophers’ and the *mutakallimūn*. He restates the argument that the non-being of time

⁶⁵⁵ *Maṭālib* V, 83-87. Adamson and Lammer mention but do not focus on this aspect of *zamān* (time as a relationship between mutable things), as a sum of atomic ‘nows’, sequentially present, both separating and joining past and future. However, this view of time, neither *kalām* nor *falsafa*, is the fundamental (non-*kalām*) reason that Rāzī in the end chooses material atomism. Significantly he sets his discussion of time *before* the discussion of place, space and void, as well as of body. For the explicit connection see *Maṭālib* VI 29: ‘We shall also set up a proof that time is a complex of sequential and connected ‘nows’, such that no one of them is susceptible to any division at all. Then we shall show that if this claim is sound in the case of motion or of time, then necessarily and decisively the body is a complex of parts that cannot be divided.’ He redeploys the proof of time as a continuous complex of atomic nows at *Maṭālib* VI, 40-46.

⁶⁵⁶ *Maṭālib* V, 89-91.

⁶⁵⁷ Adamson and Lammer interpret this less benignly as *ad hominem* point-scoring. Adamson and Lammer 2020: 112.

⁶⁵⁸ *Maṭālib* V, 99 ff.

is inconceivable. A parallel justification of the *mutakallimūn* position is conspicuous by its absence at this point (we shall see a later justification, ambivalent and *en passant*). He clearly invites the reader to share his conclusion, while he avoids stating unequivocally that he disagrees with the *kalām* position.

What will prove significant, when we compare it with the *Mabāḥith*, is that the conclusion is the same (time is pre-eternal) but the reasoning about the nature of time is very different. It is no longer dependent on motion and matter. Conceiving of the eternity of time no longer obliges us to conceive of the eternity of the physical world.

Lastly of interest is his treatment of eon or ‘backwards’ eternity (*azl*).⁶⁵⁹ This provides the missing justification for the *kalām* claim that time is originated, but deals with it in an unusual way. The argument against the reality of the eon as a pre-eternal sequence of nows, is a familiar one. Each now is something that comes into being, with a before and after, and anything like that cannot be pre-eternal. So is the eon real or not? If it is real then it cannot be pre-eternal, by the argument that favours the *mutakallimūn* position, but if it is not real then neither the existence nor the non-existence of the world can be pre-eternal.

This looks like the sort of pairing of contradictory arguments that would lead a Sextus to say, stop worrying and just get on with life. But Rāzī seems to be saying something a bit more interesting: ‘It is just that the problem of how to conceptualise how it is so is of too lofty a nature for mortal minds and human thoughts’. We are fundamentally unable to articulate the problem correctly. A number of other polarities could be resolved by calling the framing of the question into account in this way. More immediately, it leaves his own understanding of time, the eon and eternity invulnerable, without having to reject outright the traditional *kalām* view.

⁶⁵⁹ *Maṭālib* V, 105–106. Compare *Mabāḥith* I, 669.

7.3 Why choose Atoms? ‘Bodily Form’

When Rāzī presents arguments about body and space in the *Muḥaṣṣal* he already favours an atomist position, for which the *Maṭālib* argues decisively. However, there is significant difference in the framing.⁶⁶⁰ In the former he follows a pattern of arraying one family of beliefs, with accompanying justifications, over against another family of beliefs with accompanying justifications. In the latter there is a more thoroughgoing engagement with contrary arguments (most of them geometrical), that raises profound questions about the relationship between mathematical models and the real world.

By placing his discussion of body under the heading of ‘prime matter’, Rāzī shifts the debate further away from a partisan battle of ideas between *falsafa* and *kalām* towards a more universal frame. He will explore alternative philosophical models in order to reach the best solution to a real problem. He certainly brings named ‘alternative’ philosophers into the discussion in the *Muḥaṣṣal*. However, hints of convergence among different traditions in the *Muḥaṣṣal* are spelt out in the *Maṭālib*, as we saw in the case of time.

Finally, there is the apologetic significance of providing a working alternative to Ibn Sīnā’s five-element hylomorphic theory, in which body, space and fundamental characteristics are entailed accidents of prime matter, bodily form and species form. Rāzī’s argument from contingents to the necessary being is founded on the complete equivalence of bodies. Nevertheless, his account of body and space will clearly prove as compatible

⁶⁶⁰ Bilal Ibrahim believes that Rāzī’s argumentation in the *Maṭālib* is fundamentally different from that in the *Mabāḥith* and *Mulakhkhaṣ*, including ‘revelation’ alongside reason, and that is how he is able in the later work to argue for a position on bodily form and atomism on which, by the scientific method of the earlier works (as Ibrahim argues for it), he remains agnostic. Ibrahim 2000: 71 (fn. 9). So far I have been unable to discern a radical qualitative difference in approach in the argumentation around these *physical* questions across the different texts. Though there are undoubtedly theological interests at play in the *Maṭālib*, this is as true in the earlier works, as I argued in chapter 3. What does seem to me clear (and is the point of these sections) is that his thinking develops. Particularly puzzling is Ibrahim’s strong claim that in the *Maṭālib* ‘We find no references to the actual concepts (e.g., the nature of substances, motion, hylomorphic analysis, etc.) that he develops more deeply in the *Mulakhkhaṣ* and the *Mabāḥith*.’

with a broadly hylomorphic material universe of interacting causes as with an Ash‘arī universe of occasional accidents.⁶⁶¹

7.3.1 *Muḥaṣṣal*: A philosophical Debate

The *Muḥaṣṣal*, again presents in miniature several of the basic arguments around the atomic point that will reappear in the *Maṭālib*.⁶⁶² Rāzī divides the options around ‘body’ into four. It can be a complex of finite indivisible particles (the dominant *kalām* position), a complex of a real infinity of particles (the view of al-Nazzām), a simple continuum of finite divisibility (held by no one) and a simple continuum that, however far down you divide it, can always be further divided (the peripatetic position).⁶⁶³

He briefly provides two sets of proofs for the *kalām* position, one set from geometry and one from motion. The point is real, because two lines really touch one another at that point. It is indivisible, because if the point where a perfect sphere touched a perfectly flat surface were divisible, the sphere would no longer be perfect, but flattened. If it is in a location, then ‘we have established the monadic substance’ (*jawhar al-fard*). This argument works whether one thinks of the point as a substance in its own right or as inhering in a substrate.⁶⁶⁴

A follow-up argument from motion indicates a similar indivisible minimum unit of distance that can be travelled. Motion has a real existence in the present moment, because

⁶⁶¹ Here, Ibrahim (and Setia before him) is spot on, that he is working towards a new hybrid understanding of prime matter that is neither atomism as Mutakallimūn know it nor hylomorphism as Avicennans know it.

⁶⁶² *Muḥaṣṣal* 268–274.

⁶⁶³ The Aristotelian description is ‘divisible in potential’. We need to remember that this is one attempt to solve Zeno’s paradoxes of body and motion, which arise from *actual* division.

⁶⁶⁴ He later references Democritus’ account of atoms at *Muḥaṣṣal*, 279ff but notes that for Democritus the atoms are spherical, and although they cannot be physically taken apart (*dūn al-qisma al-infiqāqīya*), they are open to a division in imagination (*qābila li’l-qisma al-wahmiyya*). Rāzī’s argument from geometry goes further (they are conceptually indivisible) and perhaps shows more affinity with the structures of Pythagoras, which he references at *Muḥaṣṣal*, 284ff.

otherwise there could be no past or future motion.⁶⁶⁵ The present unit of motion cannot be divisible into an earlier and later part, because *ex hypothesi* both parts would have to be present and that would be contradictory.⁶⁶⁶ He accordingly concludes that motion (like time in the *Maṭālib*) is a succession ‘structured of [several] things, none of which is receptive of division’.⁶⁶⁷

The next step considers the trajectory covered by each of these atomic (*lā tatajazza’u*) particles of movement. If that trajectory were divisible, then there would be a movement to a half-point of the movement. But then our original movement would turn out to be divisible as well, and we have just shown that it isn’t. So that section of distance is *not* divisible and once again we have a piece of atomic space that turns out to be our monadic substance.

Two subsequent passages spell out the problem of infinite divisibility of distance, drawing on Zeno without naming him. They highlight a conceptual problem with ‘potential divisibility’ (the peripatetic solution to the paradox).⁶⁶⁸ If body is composed of real, infinite parts (as implied by the theory of infinite divisibility), then you would need infinite time to traverse those parts. This is less of a problem if you assume (as the Peripatetics do) that time also is infinitely divisible. However, as soon as you hold that time is real, monadic and indivisible (as Rāzī will insist in the *Maṭālib*), the problem becomes real.

The Peripatetics claim that the body is one continuum and that it is infinitely divisible *in potential* only. Rāzī points out the genuine problem this concept of ‘unity’ raises. Either the unity is an essential entailment of the body (as bodily form theory implies), in

⁶⁶⁵ *Muḥaṣṣal*, 270ff. We have seen the related argument in the case of time above. This is also in accord with the account of al-Ash‘arī, ‘the reality/essence (*ḥaqīqa*) of the mover is that in which movement subsists’. Ibn Furāk, *Mujarrad*, 262.

⁶⁶⁶ For a similarly structured argument (with reference to time) see Sextus Empiricus, *Against the Physicists*, II, § 199, 308, and *Muḥaṣṣal*, 225.

⁶⁶⁷ *Muḥaṣṣal*, 270-271.

⁶⁶⁸ *Muḥaṣṣal*, 271-272.

which case it can only be removed (in division) by annihilating the body, or it is an accidental property in which case, by supervening on a divisible body, unity would be divisible into a regress of unities.⁶⁶⁹

Rāzī makes the case concrete with the example of one quantity of water being divided into two. We know ineluctably that if the two parts of water existed in their previous unified state, then each had a real identity. That would imply that there is no such thing as ‘potentially divisible’. If a body is infinitely divisible, then its infinite parts are real. Zeno’s challenge stands. But if we say (to avoid this) that the two parts did not exist before the division, then we are saying that the act of dividing the water annihilated one original unitary substance and created two new unitary substances. This is self-evidently false.⁶⁷⁰

Rāzī selects just three of the many possible geometrical challenges to the idea of an indivisible particle.⁶⁷¹ Two responses consider the sides of an indivisible particle or plane. These must be identifiably different. The particle may lie between two other particles, while the upper surface of the plane is clearly different from its lower surface. The third depends on a continuous geometry of space. It begins by supposing a line six units long. One particle moves at a constant speed from the left-hand side, the other from the right-hand side at the same speed. They cross, overlapping one on one, at the midway point between the third and fourth unit. Except that if the particles and the units are indivisible, they cannot.

The natural solution is that space, like time, is discrete or ‘grainy’. Though this has uncomfortable consequences for real geometry in the physical world, that simply has to be

⁶⁶⁹ We can recognise elements of Rāzī’s response to al-Mas‘ūdī’s *Shukūk* from his *Jawābāt*. See Shihadeh 2014a: 381-393.

⁶⁷⁰ A further argument suggests that since the fractions of the body can really carry the property of ‘being half’, ‘being a third’ etc, by analogy its infinitesimal divisions are real.

⁶⁷¹ See Ibn Sīnā, *Physics*, III, 4, 273-301 and *Mabāḥith* II, 11-23 for the full gamut of objections.

lived with.⁶⁷² There are no real spheres. Rāzī explicitly accepts that consequence in the *Maṭālib*. In the *Muḥaṣṣal*, however, he simply replies to the first problem with the counter-example of the centre of a circle. This point ‘faces’ every point on the circumference, yet remains an indivisible point without multiple facets. Ergo the fact that one particle is adjacent to two others on either side, does not mean that it is divisible into two sides.

The section finally returns to Ibn Sīnā’s theory of bodily form, according to which ‘being in a location’ is a formal property inherent in (informed) matter.⁶⁷³ Rāzī’s criticism here is not directly dependent on atomic theory, rather he reworks his earlier formal objection. There is an incoherence in maintaining that an intrinsically unified substance is capable of being split up. Ibn Sīnā may suggest that unity and plurality can supervene on the same object, but this is not good enough for Rāzī. Unity and plurality would then be temporary accidents, whereas what is under discussion is the *essence* of the body. The implication is that Ibn Sīnā has admitted to a faultline in his own theory.

It is unclear at this point how exactly Rāzī’s quasi-geometrical space-occupiers differ from space itself. The following section, however, gives a taxonomy of opinions about the eternity or otherwise of bodies and their accidents.⁶⁷⁴ In the category of those who believe that bodies are eternal while their properties are originated, we find two models of how atoms might form bodies.

Democritus’ atoms simply are basic bodies, which generate properties as they concatenate.⁶⁷⁵ Rāzī gives a brief, standard description of his views on such interaction and

⁶⁷² The idea of grainy space-time is currently being explored as a way of unifying quantum theory and relativity. See Rovelli and Vidotto 2015.

⁶⁷³ *Muḥaṣṣal* 274-275.

⁶⁷⁴ *Muḥaṣṣal*, 275-284. He identifies four broad families of belief: body is originated in its individuality and in its attributes (e.g. Muslims, Jews, Christians Zoroastrians); eternal in individuality and in its attributes (Peripatetics and some Platonists); eternal in individuality and originated in attributes (the physical philosophers and others); originated in individuality and eternal in attributes (no one believes this).

⁶⁷⁵ *Muḥaṣṣal*, 278.

on the concatenation of the tiny, indivisible spheres that make up the world. The followers of Pythagoras, however, do not believe that the origin of the world is body.⁶⁷⁶ The principles of bodies are numbers generated (*mutawallada*) in units, for complexes are constituted by simples. So the basic principles are units, independent of anything else. They subsist of themselves. A unit that occupies a position yields a point. Two points combined yield a line, when two lines combined yield a plane, and two planes combined yield a body. ‘So it is clear that the principles of bodies are the units’ (*waḥdāt* – not *afrād*).

If we follow the implications of what Rāzī presents, we recognise that his account of point particles is closer to Pythagorean atomism (at least as described) than Democritean atomism. Rāzī’s atoms are not even notionally divisible and Democritus does not require grainy space-time. For Rāzī’s Pythagoreans, bodies and dimensions do not exist until the atoms are combined in their octads.

This theory of point atoms and body looks very close to the sort of *mutakallimūn* models recorded by al-Ash‘arī. It seems pointed that it is presented within the class of those who *do* believe in pre-eternal principles of body. Is Rāzī underlining that ideas that an Ash‘arī might consider ‘ours’ actually have an exogenous origin? Or is he both hinting at and distancing himself from a view of the physical world that he at the same time favours, in which the building-blocks of bodies are as ancient as time?

7.3.2 *Maṭālib* Book 1: Body of Proof

In the first book of the *Maṭālib* Rāzī carefully sets out the preliminary premises needed to construct an argument for the existence of God based on the contingency of bodies. For this reason, long before the treatment of *hayūlā* in Book VI, he stipulates as a

⁶⁷⁶ *Muḥaṣṣal*, 284. Apart from the ‘physical philosophers’ (Thales, Anaxagoras etc). Alongside the Pythagoreans in this category are various dualists and the Harranian Sabians.

premiss for the theological argument that all bodies must be similar.⁶⁷⁷ Rāzī acknowledges that this is a challenge: ‘to prove that a body is similar in all its specific, real essential properties is extremely difficult.’⁶⁷⁸

As we saw in the *Sharḥ*, some entities are not amenable to essential definition. Sometimes we have to content ourselves with descriptive accounts based on co-extensive, entailed phenomena. This is exemplified, here, in the phenomenological claim ‘that bodies are equivalent in their massive nature and quantity, and this is known directly’. Whatever bodies may be, that they occupy space and dimension is something intuitively know. From our point of view, bodies just are space-occupying objects. This much can be agreed by atomist and peripatetic alike.⁶⁷⁹ The difference is in the underlying account of why this is so. But Rāzī believes this is enough to show that whether you belong to one camp or the other, all such bodies (Ibrahim’s ‘Body 2’) are equivalent in being potential bearers of higher-level properties:⁶⁸⁰

It is necessary to say that every attribute that can occur in one body can occur in other bodies, and every attribute that a body can do without can be absent from other bodies, and since this is so, the body of the heavenly spheres can lose the attributes in respect of which the heavenly sphere becomes the heavenly sphere, and an attribute of being earth can occur in it, and an earth-body can lose the attribute in respect of which it is an earth-body and the celestial attribute can occur in it, which is what we wanted to show.

⁶⁷⁷ *Maṭālib*, I, 170–199. Versions of the *kalām* proof are presented from 200–206, 207–209.

⁶⁷⁸ *Maṭālib*, I, 177–178. But not impossible.

⁶⁷⁹ Ibrahim notes Rāzī at *Mabāḥith* II, 52, ‘[The corporeal form is] a thing that is neither perceptible nor known immediately (*darūratān*)... No proof has been set out, in my view, that body is composed of matter and form, so of course we do not assert it’. He notes how Rāzī endorses the immediately known properties of body, as ‘magnitude or three-dimensional extension along with immediately related properties’. Ibrahim 2020: 78.

⁶⁸⁰ *Maṭālib* I, 180.

We will return to the subject of higher-level properties, crucial to secondary causality, in the next chapter. Here, we note that Rāzī bases a key premiss for his theological proof on a convergence of ideas. Whichever ontological direction you come from, there is a common basis (the equivalence of bodies) for the argument from contingency to the necessary being. Incidentally, too, he has challenged the Peripatetic doctrine of the indestructible celestial element, and opened the door to a non-eternal visible cosmos.

This much is Rāzī in agnostic mode for the sake of the theological argument. We will now turn to his critique of Peripatetic and *kalām* views in which he will take a positive philosophical position on the substructures of the world that goes beyond both schools.

7.3.3 *Maṭālib* V and VI: Place, Void, Body

To make sense of Rāzī's movement towards a definitive atomism we need to consider his exploration of place (*makān*) and void (*khalāʾ*) in Book V of the *Maṭālib*. Along with the preceding discussion of time, they set the stage for the atomic bodies that Rāzī will place in them in Book VI.⁶⁸¹ Aristotle defines place (*topos*) as enclosing body. The original Ashʿarī account of place is a resting surface. For many Mutakallimūn, place is an absolute non-existent identified notionally through the bodies that occupy it. Rāzī rejects all of these. Place is a non-bodily space (*faḍāʾ*) with real dimensions, identical with the void. In this he is following a line of argument that appears in John Philoponus and is discussed by Abū l-Barakāt al-Baghdādī. Rather than present the issue as *mutakallim* against *failasuf*, Rāzī once again presents it as an issue of Plato against Aristotle.⁶⁸²

⁶⁸¹ *Maṭālib* V, 109-154 (place), 155-183 (void). Peter Adamson has carefully analysed Rāzī's arguments for place as space, a dimensioned reality in Adamson 2017 and shown its relation to the discussion of void in Adamson 2018a.

⁶⁸² In the *Timaeus* Plato presents a third 'difficult and obscure' kind of entity alongside the form of the paradigm, and the imitation of the paradigm (48E), which provides a home for everything that comes into being. It is a nature that receives bodies. It does not change or alter in its capacity. It receives everything

He begins with a phenomenological account of place:⁶⁸³

Place is that entity in which an entity is and from which it separates itself through motion and which nothing else can occupy at the same time, and which moving objects reach one after another in turn. And this much is something known immediately.

He has to do some spadework to explain why Plato sometimes refers to place as matter and sometimes as form, neither of which seem immediately very place-like.⁶⁸⁴ But he concludes that the respectable teaching about the real essence of place is either that it is space (*faḍāʿ*) or that it is (enclosing) surface (*saṭḥ*).

Those who believe in space fall into two categories. On the one side are the *mutakallimūn* who believe that space is absolute non-being, on the other are (non-peripatetic) *falāsifa*, who claim that ‘this void is existent dimensions’ (*abʿād*) subsisting of themselves, which provide the place for bodies. He adds that ‘this teaching is what the divine Plato chose and the majority of the sages who preceded him who deserve respect’.⁶⁸⁵ Rāzī places his discussion within a universal philosophical enterprise, enabling him to justify a position that is neither peripatetic, nor *kalām*. Incidentally, it affirms a second of the older Rāzī’s Sabian eternalists from the *Muḥaṣṣal*.

Rāzī argues for the reality of space and void on the basis that we can refer to it and recognise properties in it. We can talk meaningfully about half a yard of void and we know

into it but never takes on the form of what it receives. It is analogous to the gold that can be made into many statues but remains gold. He goes on, however, to describe it as an *ekmageion* – something, like wax, that receives impressions, which as a result looks different at different times. (50B–50C). The most significant line for the purposes of Rāzī’s ontology is ‘being, and extension (*chōrē*) and becoming existed as three distinct things before even the heavens came into being’ (52D). Aristotle’s discussion of place and void, with *topos* as containing surface is found in *Physics* 4, 1–9 (208a28–217b28). Cf Ibn Sīnā *Physics*, II, 5–9, 157–218.

⁶⁸³ *Maṭālib* V, 111. In fairness Aristotle, too, starts with everyday observations, but he does not assert intuitive or ineluctable knowledge. *Physics* Δ, 1, 208a27–208b14.

⁶⁸⁴ Here he may be engaging indirectly with Ibn Sīnā *Physics*, II, 7, §1, 170.

⁶⁸⁵ *Maṭālib* V, 114.

ineluctably that absolute non-being cannot be halved or quartered. Because we can talk meaningfully about bodies being in place and moving from one place to another, we can identify distances. Therefore, space cannot conceivably be absolute negation. The quasi-analytic judgments (*ḍarūriyyāt*) relating to the phenomenology of sense experience are crucial, throughout.⁶⁸⁶

He considers the Mutakallimūn case. What we point to are imaginary constructs, which our mind supposes and our intellect hypothesises.⁶⁸⁷ The only thing that can be picked out in the external world is a body but if place is a body, that leads either to a regress or to the peripatetic position. Rāzī deploys one of his fundamental epistemological arguments, notional entities have no independent ontological status. Either a mental existent corresponds to reality or not. If it does not, then propositions claiming correspondence are simply false. But no one holds that their propositions about directions or locations are false. Rāzī points out that the *kalām* definition of motion and rest in terms of presence in a location (*ḥayyiz*) implies that locations cannot exist in imagination only. He concludes that space or place can indeed be picked out by the senses. It is a dimensionality that subsists of itself and in which bodies can be found.

This leads to the related problem of dimensions.⁶⁸⁸ Both Mutakallimūn and Peripatetics agree that dimensions are proper to bodies and that bodies cannot interpenetrate. If dimensions were real, then bodies would not be able to be in them.

⁶⁸⁶ For Adamson these intuitive judgments (which we have highlighted as crucial to his epistemology throughout) are key to Rāzī's resolution of the problem in favour of an independent space. Adamson 2021: 227-229.

⁶⁸⁷ *Maṭālib* V, 117. This relates to a Mu'tazilī doctrine of the *shay'* taken up by Ibn Sīnā. The *kalām* category of 'thing' (*shay'*) grants mental entities an ontological status that may or may not correspond to entities in the real world. See Wisnovsky 2003: 146-155. Al-Ash'arī, in contrast, makes time and place nominal objects of reference in virtue of perceptible events and bodies. Rāzī, follows al-Ash'arī, in not granting a mental *shay'* an independent ontological status, but does not accept extreme Ash'arī positivism.

⁶⁸⁸ *Maṭālib* V, 121-142. For Philoponus' argument in favour of real dimensions in the void see *Corollaries on Place and Void*, 173ff.

Therefore, they are either not real or they only exist in the substrate of bodies. Rāzī deploys a familiar metalogical principle. For any two entities, having one common entailed property does not entail having all entailed properties in common.⁶⁸⁹ Space and bodies may each share dimensionality, but they need not share the essential property of non-interpenetration. Their respective dimensionalities can behave differently.⁶⁹⁰

Further thought experiments establish our existential awareness that the indexicals ‘here’ and ‘there’ are immediately known, but do not entail body.⁶⁹¹ Place and body are thus conceptually distinct.⁶⁹² Rāzī suggests the only reason there is not universal agreement among intelligent people is that these considerations never occurred to them.⁶⁹³ He explores paradoxes arising from the peripatetic account place as ‘enclosing surface’. The same wax has a smaller ‘place’ and larger volume as a sphere than as a cube.⁶⁹⁴ A cube with a lump gouged out has a smaller volume and a larger place than the original cube. In the separate discussion on the void, the phenomena of separation, rarefaction and motion offer further real-world challenges to the peripatetic account.⁶⁹⁵

⁶⁸⁹ This is a maxim Rāzī frequently refers to. Different *māhiyyāt* can share in one entailed attribute without sharing in others. It perhaps goes back to the critique of arguments by analogy. See *Sharḥ* (Logic) 271, 275. Adamson highlights an intermediate pro-Aristotelian argument playing on the identity of indiscernibles (Adamson 2017: 218-221). If space and body interpenetrated, they would share all the properties of whatever occupied those dimensions; they would thus be indistinguishable and so identical. The deduction of a complete set of shared properties on the basis of one observable shared property (in this case, dimensionality), is legitimate in classical *kalām* analogical argument, but consistently criticised by Rāzī. Adamson also highlights a further argument, that even if space and body did share all properties, their individuality would be distinct. These would correspond to our intuitive knowledge of ‘that’ (body) and ‘there’.

⁶⁹⁰ Compare Philoponus, *Corollaries on Place and Void*, 176, ‘I reply that our theories must conform to the facts, not vice-versa. Just because we see quantity always accompanied by substance and declare that it cannot exist in its own right, it does not follow that nature is in fact like that.’ Abū l-Barakāt al-Baghdādī explores the notion of space as dimensions with the absence of resistance. *Mu‘tabar* II, 54.

⁶⁹¹ *Maṭālib* V, 143-146. Note the parallels with the earlier existential reflections on the real ‘now’.

⁶⁹² *Maṭālib*, V, 144.

⁶⁹³ *Maṭālib*, V, 146.

⁶⁹⁴ Adamson notes Rāzī’s debt to Ibn al-Haytham for these examples. Adamson 2017: 225-226.

⁶⁹⁵ *Maṭālib*, V, 151 (wax); 157 – a reprise of the argument from the *Muḥaṣṣal* that when an insect moves in a universe without void, the whole world has to move.

Rāzī follows Aristotle's order of discussion, and next considers void. For Peripatetics, there can be no void because body requires space and space requires body.⁶⁹⁶ Rāzī points out the argument is circular, as well as being a minority view. His solution turns a metalogical claim about existence into a merely logical one. A body's 'entailed accident' of being in a specific place is not a relation that brings that place into existence, any more than the fact that the place has to have a body brings the body into existence. Body and space are ontologically on a par. They can 'mutually entail' in the everyday sense in which vacuums are necessarily filled by available air or water.

Adamson, who has analysed the arguments of this section in detail, suggests that Rāzī's account of void, while making space for universes beyond our own, does not promote the notion of empty space between the celestial bodies within it. However, void will usefully account for different densities in bodies, according as their proportions of internal atoms and void vary.⁶⁹⁷ He also notes that Rāzī's account of void is dependent on the notion of space as a substance distinct from body. Though this is a clear rejection of the Peripatetic position, it is also a rejection of the Mutakallimūn position that space is absolute non-being.⁶⁹⁸ Rāzī is taking the discussion in a new direction.

This discussion of the void incidentally seems to answer a question raised earlier. Is his atomic theory more like Pythagoras or more like Democritus? The 'most powerful argument' for the reality of void suggests an answer, and gives a helpful introduction to his discussion of prime matter.⁶⁹⁹

We shall present a certain demonstration that the bodies that we sense are composed of parts, each of which is receptive of division in the imagination, but is not receptive of the division of separation at all. And we will provide a proof that

⁶⁹⁶ *Maṭālib* V, 155-156.

⁶⁹⁷ Adamson 2018a: 310.

⁶⁹⁸ Adamson 2018a: 318.

⁶⁹⁹ *Maṭālib* V, 166.

the shape of each one of these must be a sphere. And when it is proved by the certain demonstration that these two propositions are sound, this entails that when these spherical particles are assembled and linked, a void occurs in what lies between them.

Such atoms would appear fairly unequivocally Democritean and his void a continuum. However, intriguingly, what he actually says in Book VI is rather different.

7.3.4 *Maṭālib* VI: Prime Matter and Atoms

Rāzī argues in Book VI that bodies are composed of atoms without volume, surface or shape. These, when combined, form bodies extended in space. This explains why all bodies are equivalent, supporting the argument already presented in Book I. That apologetic point will be reinforced in the summary chapter at the end of Book VI.⁷⁰⁰

The book is structured in four main sections. The first presents the different accounts of body offered by atomists and Peripatetics and sets out the arguments for an atomic theory. The second presents objections to the monadic substance, focusing particularly on geometrical proofs. The third considers infinity, the similarity of bodies, and the question of other worlds. The fourth summarises the conclusions with respect to apologetic concerns and repeats some of the earlier arguments.

Before he embarks on his main argument Rāzī divides matter into four categories. There is ‘craft’ matter, that is, the materials used by craftsmen to make artefacts (wood, iron etc.). There is natural matter, namely earth, air, fire and water from which all sublunary entities come and into which they decay (‘I mean minerals, plants and animals’). Then we have universal matter ‘this is pure body’. This is the basis for both celestial

⁷⁰⁰ *Maṭālib* VI, 189ff; 199ff.

entities and for the four elements (*arkān* here – ‘pillars’- rather than *‘anāṣir*) and the three classes of being that come from them. The fourth category is prime matter:

Some say this is atoms, others that it is a self-subsistent individual essence (*dhāt*) in which bodiliness inheres, and the individual essence of the body is generated from this subsistent receptor (*qābil*).

Craft materials, animals, plants, minerals, earth, air, fire and water are already a part of our world, shaping the logical space in which we reason. The spheres and stars at least appear immutable. We can note that these, and their commonly understood relationships, are not being called into question. Animals, plants and minerals are produced out of the four elements, and natural materials are worked by craftsmen to make new objects.

The matter of dispute, as far as Rāzī is concerned, is what underlies these things and ultimately bears the hierarchy of properties that are manifested in the celestial and natural order and (either directly or ultimately) bestowed by God.⁷⁰¹ The common-sense account of the world will not be challenged by this enquiry, and that common-sense account includes an everyday understanding of causality.⁷⁰²

Familiar material is modified, expanded and supplemented in the great blocks of parallel argument. The first section discusses yet again the definition of body, contrasting the opacity of the peripatetic definition (receptivity to bodiliness etc) with the immediacy of the notions of volume and quantity.⁷⁰³ The arguments for atomic time reappear.

⁷⁰¹ See *Maṭālib* VI, 215.

⁷⁰² This will become clear in the following chapters on the natural and celestial world where we will see Rāzī recognising that the certainty of everyday causality is crucial for the *kalām* proofs.

⁷⁰³ *Maṭālib* VI, 17.

Together with the argument for atomic motion they provide a proof for the atom, the particle that cannot be partitioned.⁷⁰⁴

Geometrical arguments for atomic points are expanded in this section and contrast with exhaustive treatment of geometrical arguments against them in the section that follows.⁷⁰⁵ The key question about real bodily infinities (the source of the Zeno paradox) is handled first from the point of view of the fundamental problem for the peripatetic position (real infinite divisibility), then from the point of view of Nazzām's theory of infinite atoms (real infinite accumulation). The conclusion is that bodies have real, finite parts.⁷⁰⁶ Physical arguments against the atom based on contiguity, gradual transition and motion also appear and elicit a striking response that we will come to below.⁷⁰⁷

The model of the atom that emerges from these arguments is closer in the end to al-Ash'arī (as described by Rāzī at the outset) than to Democritus, in spite of the remark in the earlier argument on the void.⁷⁰⁸ They have no shape or dimension and, since what is divisible in imagination must be divisible in actuality as well, they can have no divisibility in imagination.⁷⁰⁹ They cannot form a true circle in the real world.⁷¹⁰ When atoms are put together they create a body with three dimensions.⁷¹¹ Rāzī contrasts the Ash'arī (and ancient Mu'tazilī) position that a single atom is receptive to life with a later Mu'tazilī belief

⁷⁰⁴ *Maṭālib* VI, 29–46. The argument from motion was briefly presented, we saw, in the *Muḥaṣṣal*.

⁷⁰⁵ *Maṭālib* VI, 47–60, 74–84 (for), 131–168 (against – with rebuttals).

⁷⁰⁶ *Maṭālib* VI, 61–68 (infinite division), 69–73 (infinite accumulation). See also the further treatment of infinities at 169–188.

⁷⁰⁷ *Maṭālib* VI, 85–126.

⁷⁰⁸ *Maṭālib* VI, 21–22. Either he changes his mind, or his infinitesimal particle is 'like' a spherical atom, in having just one side. Given that his arguments are to do with the structure of distance and dimension, and given that he has already argued for dimensioned space as a non-bodily existent, his space (as providing the locations for atoms) must be composed of minimal parts, rather than be the smooth void that he implies in *Maṭālib* V.

⁷⁰⁹ *Maṭālib* VI, 146 (no shape or dimension), 63 (divisibility in imagination). He does mention the possibility of Democritean atoms *Maṭālib* VI, 20, 25–26.

⁷¹⁰ *Maṭālib* VI, 145 (circle).

⁷¹¹ *Maṭālib* VI, 9–10 (with discussion of competing beliefs).

that life is dependent on a complex of atoms.⁷¹² The interest is academic (he will commit to the doctrine of separable, non-bodily souls) but the point is consistent with the fact that his apologetic, as we have seen, is based on the equivalence of *bodies*, rather than atoms, with respect to higher-order properties.

He arrays various permutations of Mu‘tazilī belief alongside similar philosophical theories. Some picture the atoms as triangles or cubes. One outlier gives them length and breadth.⁷¹³ Democritus’ theory of solid, infinitesimal spheres is mentioned separately.⁷¹⁴ We also find a theory of the construction of five elements out of five primary shapes. Rāzī attributes this to Euclid, although a very similar theory is presented in Plato’s *Timaeus*, where the four elements are constructed out of increasingly complex arrangements of equilateral and isosceles triangles into various polyhedra, of which the simplest is the fiery tetragon.⁷¹⁵ The Pythagoreans do not seem to feature this time.⁷¹⁶ A major point seems again to be that these questions are the subject of a universal, convergent human enquiry, not matters of parochial partisan allegiance.

§7.3.4.1 Dividing the Waters

Rāzī returns to the Peripatetic problem of dividing the water four times in the *Maṭālib*.⁷¹⁷ One of these references intriguingly puts it in the context of the problems facing *each* of the three different approaches to prime matter: finite divisibility (*kalām* and ancient philosophers), real infinite divisibility (Nazzām) and real unity with infinite (potential)

⁷¹² *Maṭālib* VI, 21.

⁷¹³ *Maṭālib* VI, 21.

⁷¹⁴ *Maṭālib* VI, 25.

⁷¹⁵ *Maṭālib* VI, 26–27, see *Timaeus* 54D ff. In spite of giving this detailed air-time, Rāzī does not seem to want to derive elemental properties from the primary spatial structures of the elemental bodies, either because it imperils his vital maxim that all bodies are equivalent, or because (as will emerge from his arguments) in grainy space, there are no real triangles.

⁷¹⁶ Though Pythagoras’ triangle of three atoms does get a mention at *Maṭālib* VI, 149.

⁷¹⁷ *Maṭālib* V, 125; VI, 23, 63, 121.

divisibility (Peripatetics). Rāzī points out that all three options yield paradoxes: the first group have the physical problem of the rotating millstone, which in a grainy space ought to fall apart the moment it starts turning; Naẓẓām solves Zeno's paradox of motion through a real infinity with a bizarre leap (*tafra*) across space; the Peripatetics destroy one unitary substance and create another every time they pour a cup of tea. So, opting for any one of these will involve accepting counter-intuitive conclusions. Rāzī is managing his readers' expectations. Whatever conclusion he may come to, it will not be completely pretty.

The paradox of the water itself is so significant to his argument because it forces Peripatetics towards atomism by their own logic. Their theory of a bodily unity conferred by the bodily form cannot get around the paradox it generates.⁷¹⁸ The attempt to do so by claiming that the form gives unity while the matter gives divisibility merely highlights that parts of matter can already be individuated before actual division. Thus, all bodies must be actually divisible.⁷¹⁹ They cannot be infinitely so (Peripatetics accept this), so their divisibility must be finite. The conceptual world of the Peripatetics, properly explored, turns out to require finite, indivisible particles of matter, rather than a notional prime matter with a bodily form. We can recognise a pattern of Rāzī on the one hand critiquing the Peripatetics, but on the other pointing to a deeper-level convergence between traditions.

Rāzī's positive proofs for atomism, based on motion/change and time are drawn from the argument of Book V, relying on a phenomenology of existence as presence, and ineluctable knowledge.⁷²⁰ It is his chosen epistemology that gives him compelling reasons to choose one set of awkward conclusions over another. The different argument sets are

⁷¹⁸ *Maṭālib* VI, 63 (main argument for), 121 (argument against).

⁷¹⁹ Rāzī focuses on the actuality or potential of the *object* susceptible of such division *ad libitum* rather than the potentiality of the act of division. He is of course responding to developed interpretations of Aristotle.

⁷²⁰ *Maṭālib* VI, 29–46.

not Pyrrhonian arrays that pit one set of ridiculous conclusions against another to show that argument is futile and leave our thoughts at peace. Rather, this is a Holmesian case of eliminating the impossible and proving the (at first sight) improbable. Because the ‘now’ of motion is not divisible, nor will the motion be. Because motion will not be divisible, nor will the distance it traverses. *Voilà* the individual substance.

He sets out openly the awkward consequences. Despite appearances, there is no gradual change or gradual motion. Motion is being in one location after being in an adjacent location. There is only ever punctual change and punctual motion. The problems are handled in more depth in the section arguing against atomism.⁷²¹ There he challenges Ibn Sīnā’s definition of motion as a state between end points, and returns to an idea he floated in the *Mabāḥith* to explain how real grainy change can appear continuous.⁷²²

His example is the shadow thrown by the sun that grows shorter as the sun rises. Appearances say that the shadow gradually grows shorter. The argument says that it shortens by discrete, atomic amounts. The transition from one state to another has either not occurred, or it has occurred, and yet we talk of ‘being in transition’. Rāzī explains the origin of our notion of ‘transition’ this way:⁷²³

This imaginary idea (*khayāl*) that occurs of its being in transition (*intiqāl*) from non-being into existence is a product of the reckoning faculty (*wahm*) and a conceptualisation of the imaging faculty (*khayāl*) and there is no fundamental reality to it at all.

The same can be applied to motion:

The particle was in contact with the first particle [sc. on the surface] then it came to be in contact with the second particle and between these two moments of contact there was no intermediate state distinct from these two in reality, but this

⁷²¹ The arguments against, *Maṭālib* VI, 115–126.

⁷²² *Maṭālib* VI, 124–125. *Mabāḥith* I, 591.

⁷²³ *Maṭālib* VI, 125.

intermediate state is existent in the reckoning faculty and the imaging faculty.

In the *Mabāḥith* this idea was speculatively applied to qualitative change only. Here it is asserted and generalised to *all* motion. Change in the world of the *Maṭālib* evolves as a sequence of discrete predication events and as a result that world begins to *look* a lot more like al-Ash‘arī’s without entailing his occasionalism.

The gap between reality as we construct it and actual reality resurfaces in the geometrical paradoxes. Though the sphere balanced on the plane surface had offered an initial geometrical argument for the point particle, Rāzī accepts that continuous geometry and its figures are not compatible with a world of atoms.⁷²⁴ There is no continuous geometry of spheres, triangles, squares, and rational or irrational lengths in the real world. Since we have an overriding reason to believe in the atom, we have to abandon the geometer’s principles of the continuous circle and the possibility of the superposition of lines in the real world. The prejudices of our reckoning faculty (*wahm*) may find this *implausible*, but ‘still on the whole it is (albeit remotely) *possible*, preserving these decisive proofs from reproach and criticism’.

He makes a similar, though more tendentious, point against peripatetic claims that the Mutakallimūn fail to deal with the problem of an atom having to have two sides.⁷²⁵ If one atom sits between two others, then it has one contact on its right side and another on its left side – it therefore has two parts. If a plane surface of atoms is held in the sunlight, one side will be lit, the other not. Rāzī’s redefines the terms of the model. “‘b’ is in contact with ‘a’ and ‘c’” actually means “‘b’ occupies the space on the right of the space occupied by ‘a’ and on the left of the space occupied by ‘c’”. The notions of ‘sides’ and ‘contiguity’ do

⁷²⁴ *Maṭālib* VI, 144–158. For the original sphere/plane argument 50–51. It is thus downgraded to an *ad hominem* argument against the Peripatetics.

⁷²⁵ *Maṭālib* VI, 92–96.

not properly come into the true description, they are inserted by our *wahm*. This, once again, proves mistaken when weighed against the demonstrations for proving the monadic substance, which are certain and admit no doubt.

Rāzī is aware that the borderline between the speculations of *wahm* and the wide-ranging ineluctable truths he elsewhere relies on is thin. Perhaps that is why he downgrades his argument to an *ad hominem* response. The Peripatetics themselves argue that you cannot look beyond the edge of the world. Any reasonable person would say that you can. If the Peripatetics claim that their arguments for the finitude of the world trump such intuitions, Rāzī is entitled to do the same.⁷²⁶ However, in fact, Rāzī accepts neither their arguments on this point, nor the claim that these successfully trump sound intuitions.

§7.3.4.2 Epistemology: *wahm* or ‘*aql*, an infallible Distinction

Rāzī genuinely needs extended ineluctable truths, so is there a criterion that distinguishes these from the speculative products of *wahm*? He does provide a response to the problem, *en passant*, which is worth noting for its anti-sceptical tenor.⁷²⁷ The context is again a deviant thought-experiment suggesting there is space beyond the cosmos, this time by extrapolating the poles to infinity in their different directions. Peripatetic science challenges this on the grounds that the distinction between north and south is a speculative construct.

Rāzī points out that Peripatetic epistemology itself divides abstract judgments into those that stem from the speculative reckoning faculty (*wahm*) and may be false and those that stem from the intellect (‘*aql*) that are veridical.⁷²⁸ He then considers a person of sound mind and instincts in whom are found certain (*yaqīniyya*) and decisive (*qāti‘a*) judgments.

⁷²⁶ In consequence of defining place as ‘that which is contained’.

⁷²⁷ *Maṭālib* V, 153.

⁷²⁸ We saw Ibn Sīnā placing Kantian limitations on the *wahm* in *Sharḥ* (Logic), 256.

To know these are true, we would have to know three things: the difference between intellect and imagination, the veracity of the one and the mendacity of the other and that the judgment in question comes from the intellect. If that knowledge can only be derived by argument, then the foundations of our knowledge would collapse, because the reliability of argument is dependent on the self-evident knowledge it is trying to establish. It follows that if we are to have self-evident knowledge (*badīhiyyāt*) at all, we must have the capacity to know that there are two different sorts of certainty, speculative (*wahmiyya*) and intellectual, and to tell them apart.

He then offers a naturalistic route to establishing such self-affirming, self-evident knowledge:

There is no meaning to primary self-evident items of knowledge other than judgements of a kind such that if an intelligent person wanted to have a doubt about them in his soul, then he would be unable to do so.

Since we do (as a matter of fact) have such knowledge, then we must also be able to make the distinction. This follows the pattern of his argument from epistemic optimism deployed in the *Mabāḥith* and the *Mulakhkhaṣ* showing that we can have knowledge of simple essences.⁷²⁹

He uses this principle to challenge the claim of the Peripatetics. The knowledge that the region of the north pole is distinct from the region of the south pole precisely fits the criteria. A thinking person could not doubt it. This is therefore self-evident knowledge and not speculation. The thought experiment is valid. There can be an infinite void beyond the universe.

The key criterion is ‘can you, as a thinking person doubt it?’ When we apply that criterion to Rāzī’s geometrical paradoxes and the problem of incremental change, we can

⁷²⁹ *Mabāḥith* I, 377; *Mulakhkhaṣ* (Physics), 393.

indeed doubt that there are real circles or that there is continuous change in the real world. But when we consider the notion of the crumbling millstone and the sideless, contactless, adjacent atom it might seem a bit more of a stretch.

Rāzī is maintaining a difficult balancing act. He is reframing discussions and challenging certainties but he is also upholding the foundations of self-evident knowledge. This process has been crucial to the development of science throughout the ages, from Ibn al-Haytham's challenge to Ptolemy's physically questionable epicycles, to Dirac's impossible negative energy equations. On the whole, the ancient atomic description of matter, for all its flaws of detail, has provided a better and more useful description for the way things are than Ibn Sīnā's bodily form. However, there is a tension in Rāzī's approach that roots ineluctable truths in subjective certainty and then selectively subverts such certainties.

§7.3.4.3 Convergence with classical Ash'arism

Finally, we should note that Rāzī creates space for an Ash'arī viewpoint without necessarily affirming it. This is a pattern we meet at various points in the *Maṭālib* and *Muḥaṣṣal*.⁷³⁰ Rāzī offers parallel rationally permissible solutions and the reader decides.

The issue is the genuine physical problem raised by grainy-space atomism. If space is grainy, the outer part of the millstone can no longer move in perfect proportion to every element between edge and axis. Different parts of the wheel must move at disproportionate speeds and the wheel ought to break up. Rāzī comments:⁷³¹

Except that the Mutakallimūn say that it is the God of the world who moves each one of them [the circles of atoms in the millstone] in some of their locations and

⁷³⁰ *Maṭālib* VI, 116-124.

⁷³¹ *Maṭālib* VI, 116.

brings them to rest in others in such a way that these relative positions remain as they were. And an action of this kind is quite in keeping from an all-wise God.

He reminds us again of all the arguments for and against infinite divisibility and concludes:⁷³²

Since a certain proof has indicated affirming the separable substance (*al-jawhar al-farad*), and then affirming the separable substance entails the occurrence of splitting in the millstone, and the doctrine that the body is composed of infinite particles entails impossibilities more decisive and more unacceptable than this entailment, we must accept the implication and stop being bothered by it.

We may accept an Ash‘arī explanation. But we also have the option of allowing the logic of argument to set us free and give us an almost Pyrrhonian *ataraxia* in spite of the paradox.

As for Rāzī himself, it is hard to know what he really thinks. However, he is about to argue for a world of subordinate agents (souls) who have direct power over matter and its properties and he takes seriously accounts of the actions of local spirits in the natural world. This leaves him, and his reader, a number of options for speculating about how the millstone turns without crumbling, including Ash‘arī occasionalism but not requiring it.

§7.3.5 Conclusion

Rāzī’s views on the substructures of the universe have shifted considerably between the *Mabāḥith* and the *Maṭālib*. In the earlier work, though he challenged Ibn Sīnā’s ontological (and epistemological) privileging of the intelligible world over the material, and though he reserved judgment on bodily form theory, he clearly found in favour of the Peripatetic solution to Zeno (continuous time, motion and matter) and accepted the eternity of the world. In the later work he has, as Ibrahim has indicated, created a new

⁷³² *Maṭālib* VI, 123.

model for the substructures. In so doing, he has blended traditional *kalām* debates with the alternative perspectives available from the wider philosophical tradition represented by critical philosophers (Philoponus, Muḥammad Ibn Zakariyya al-Rāzī, Ibn al-Haytham, Abū l-Barakāt al-Baghdādī) or simply non-peripatetic philosophers (Democritus, Pythagoras, Euclid, Plato).⁷³³

The resulting world is not classical Ash‘arī. It has at least two eternal existents alongside God, namely time and space, both of which (in contrast to the world of the *Mabāḥith* and indeed of the Mutakallimūn) can exist without bodies. However, as a theological consequence, the stage is set for a world created out of nothing at a time of God’s choosing. In parallel with this, Rāzī’s theory of body as aggregates of point atoms in grainy space sets all bodies on an equal footing, including celestial bodies. All bodies are equally receptive to all properties and equally vulnerable to dissolution. The world we know, like the world of the Stoics, Epicureans and Christians, can have a beginning and an ending in time. It may even be that our world is only one of many possible worlds in the infinity of atoms and space.⁷³⁴

This theory of matter yields a material world of featureless bodies extended in space all equally receptive to higher properties. It confirms the basis for the version of the argument from contingency deployed in Book I of the *Maṭālib*. These material substructures are equally susceptible to an Ash‘arī occasionalist account of the events in it, and to a modified Peripatetic account that includes hierarchies of properties and secondary

⁷³³ Ibrahim 2020: 68. Ibrahim downplays the philosophical importance of the *Maṭālib*, because it does not entirely accord with his epistemological thesis, but in fact it illustrates his major point that Rāzī is part of a movement towards a reconception of the physical world that goes beyond the creaking apparatus of Peripatetic science or classical *kalām* atomism.

⁷³⁴ *Maṭālib*, VII, 8. ‘Since we have proved by derivation that outside the world there occurs an infinite void and there is no proof by derivation that this world is the only one, but that it is possible that there are worlds apart from this one...’. He is considering the possibility of celestial agents beyond our observation.

causes. In spite of friendly nods to the classical Ash‘arī interpretation, however, Rāzī’s intellectual preference continues to be for a universe that includes real secondary causes.

Key evidence for this is his critical appropriation of astronomy and the science of the lower world. He does make frequent use of scientific examples from the lower world in the *Maṭālib*, largely in the service of the argument from design, which is key to his proof of God as a choosing agent. However, they are not systematically discussed in their own right. In the next chapter, then, we shall rely on passages from the *Sharḥ al-Ishārāt*, and follow Ibrahim’s lead in noting, not a swing to a more occasionalist account, but a philosophical divergence from classical hylomorphism towards new scientific paradigms.

Chapter 8 The Science of the Lower World: Ash‘arī Miracles and the Challenge to Classical Scientific Paradigms.

The Rāzī of the *Maṭālib* is an atomist, who diverges from the peripatetic account of time, space and body. However, his account of time and space is equally divergent from classical *kalām*. He is not defending a partisan position, but rather, in the spirit of Ibn Sīnā, he is searching for the best account. That account explains two of the four levels of matter that he identifies at the beginning of *Maṭālib* VI, universal matter (pure body) that is receptive of the higher forms of elemental matter, and prime matter (atoms).⁷³⁵ This leaves matter in those basic forms that we experience (earth, air, fire and water) and the higher order bodies and their properties. But does he nevertheless become more occasionalist, or does he preserve something of the peripatetic hierarchy of forms and interacting natures?

I want to present two discussions. One sets Rāzī’s treatment of miracles in Book VIII of the *Maṭālib* alongside his presentation of the argument from design in Book I. Both passages engage critically with the Avicennan model of causality on the one hand and Ash‘arī occasionalism on the other. While Rāzī shows sympathy with the Ash‘arī narrative, he nevertheless makes a preferential option for secondary causality in explanations of the physical world.

The second considers Bilal Ibrahim’s proposal that not only does Rāzī reject hylomorphism at the level of bodily form, but he also rejects it in his account of higher-order physical phenomena in favour of a phenomenalist approach highlighting properties and powers.⁷³⁶ Referencing the *Sharḥ al-Ishārāt* we shall agree with Ibrahim that Rāzī

⁷³⁵ Ibrahim’s ‘Body 1’ in Ibrahim 2020: 76.

⁷³⁶ Ibrahim 2020: 70: ‘Rāzī develops an ‘attributive’ analysis of substances and elementary bodies, which rests on empirically established properties as distinguished from the form-matter ontology of Aristotelian philosophy.’ Ibrahim argues largely on the basis of material in the *Mabāḥith* and the *Mulakkhaṣ* and sees this as an extension of his earlier epistemological argument.

challenges elements of the classical hylomorphic account, but offer a different interpretation. The end product is still fundamentally hylomorphic.⁷³⁷ However, Rāzī's interventions pick up on a critical tradition attacking those elements of the paradigm that are no longer fit for purpose. In terms of method and content, there is more continuity with Ibn Sīnā than Ibrahim quite gives credit for.

§8.1 Occasionalism in *Maṭālib* VIII: The Horse in the Library rides again

Rāzī specifically sets out al-Ash'arī's views on nature and causality in Book VIII of the *Maṭālib* in the discussion on prophetic miracles.⁷³⁸ A later section resolves the doubts cast on prophetic miracles.⁷³⁹ Rāzī affirms that customary events can be interrupted, thus saving the possibility of miracles. However, he also spells out that such interruption is equally compatible with occasionalism, peripatetic determinism and randomness. Al-Ash'arī's position is relativized from the outset as only one of the 'various doctrines of humanity' on the topic.⁷⁴⁰ Once again, the reader, can decide without prejudice to his theological virtue, whether he prefers an Occasionalist or Scientific explanatory account of the world.

§8.1.1 The epistemological Challenge of the Ash'arī Argument

The doctrines of al-Ash'arī recounted by Rāzī in these passages contrast with views he explicitly affirms elsewhere in the work. Al-Ash'arī teaches that life, knowledge, capacity, desire and aversion supervene on an individual atom and require no physical structure. Rāzī himself, however, has taken elaborate pains to base his argument for the existence of God on the sameness of *bodies* – physical structures in space – that are the

⁷³⁷ I think this is something Ibrahim would accept. For him, Rāzī is objecting to 'robust' hylomorphism.

⁷³⁸ *Maṭālib*, VIII, 35–37.

⁷³⁹ *Maṭālib*, VIII, 35–37; 93–100.

⁷⁴⁰ The Mu'tazilis are included but their teaching is dismissed as being confused.

bearers of possible attributes. At the beginning of Book VI he acknowledges that animals and craft materials have properties that supervene on mixtures of the four elements and their underlying atoms. Human knowledge and choice, are attributes not of a material, local substance, but of the non-material, rational soul.⁷⁴¹

Al-Ash‘arī also makes claims about the relation between perception and reality. All physical conditions for sight may be present and we may not see the mountain in front of us. Conversely, the blind man in the east may see a gnat in the west. Rāzī expresses sympathy for this position but relates it to the action of other spiritual entities that can influence human souls.⁷⁴² The thought-experiment, of course, raises potential problems for Rāzī’s realist approach to knowledge based on the primacy of the sensory. Then we have the Ash‘arī challenge to the regularities implied by scientific causality. A mountain can be transmuted into pure gold; the waters of valleys can turn to blood; a human can come into being without two parents. Rāzī spells out that ‘all in all he denies all effectuations (*ta‘thirāt*) and natures (*ṭabī‘āt*) and powers (*quwwāt*)’.⁷⁴³

Rāzī is often very careful to assert that there is only one effectuator, God. He follows Ibn Sīnā in denying that there is such a thing as Nature with a capital N. Nevertheless, he shows no evidence of any personal inhibitions in talking about natures, effectuation and powers when describing the relations of objects in the world. Indeed, he devotes a considerable amount of space throughout the *Maṭālib* to describing and justifying a model of the universe that operates with a mixture of physical and psychological determinism ultimately dependent on God. Furthermore, he presents a significant third-

⁷⁴¹ *Maṭālib* VII, 101–138 in particular. A link between the soul and an individual atom is explicitly rejected at VII, 110–111 and 119.

⁷⁴² See the discussion of the epistemology of miracles from VIII, 127–136, particularly 136, where jinn have the capacity to make themselves seen and not seen to mortals.

⁷⁴³ Rāzī clearly has a different reading of al-Ash‘arī from Frank’s.

party argument for caution about ‘anything can come of anything’ claims, a point crucial to the *badīhiyyāt* of his own epistemological foundations.⁷⁴⁴

Regularities are in fact as open to disruption for a Peripatetic as for an occasionalist.⁷⁴⁵ So Ash‘arī miracles may have a Peripatetic-friendly explanation. For instance, there is a scientific account available for human beings born without parents. In the normal process of generation, the elements are combined in a specific way to produce a compound that is especially suitable or ‘readied’ for a particular kind of soul, at which point the appropriate rational soul is automatically implanted in it. It follows that, provided that just those elements are combined, irrespective of whether this is by ordinary or extraordinary means, the process of hominization will take place.

More generally, sublunary events affecting individuals are dependent on ‘a celestial formation’ (*shaklan falakiyyan*).⁷⁴⁶ So the fact that a particular body (whether a mountain or the ingredients of a human) is given its specific properties is a result of such a formation. Yet celestial formations cannot be precisely known.⁷⁴⁷ Therefore ‘there is no form of disruption [sc. of regularities] that cannot reasonably be supposed.’ A surprising event need not be a disruption of a natural order, but simply a disruption of our normal, underinformed expectations. Strictly we should not say that a regularity was disrupted, but that our ideas about regularities need to be expanded.⁷⁴⁸ ‘Possibility’ in the world is, as we saw in Part II, a reflection of our epistemic states.

But al-Ash‘arī’s examples do revive the tensions between what we know to be logically possible and the epistemic status of our assured expectations. When we see a

⁷⁴⁴ We are back in the realm of the ‘horse-in-the-library’ problems.

⁷⁴⁵ The ‘parallel’ account approach, we saw, is there in chapter 17 of the *Tahāfut* as well. *Maṭālib* VIII, 36–37

⁷⁴⁶ Compare *Muḥaṣṣal*, 509.

⁷⁴⁷ He discusses this theme in detail at VIII 153–158.

⁷⁴⁸ A point noted by Hume in his discussion of miracles in the *Enquiry*. Hume, *Enquiries*, 110–116.

youngster, we know the stages of gestation and birth that he has been through. If anyone claims that none of these happened:⁷⁴⁹

we respond decisively that he is lying in this claim, and we are sure that what he is claiming is wrong and is a falsehood. And since this certainty occurs immediately without the assurance being provided by a prior derivation, or a previous syllogism, we know that this is self-evident assurance, and primary knowledge.

He considers a familiar range of *adunata*, which include al-Ash‘arī’s mountain of gold, adding an endearing take on the horse-in-the-library puzzle. Now donkeys, worms and insects become incredibly learned and hold a seminar on Ptolemy. All of this threatens the whole rational enterprise by calling into question the ineluctable truths (*darūriyyāt*).

Fifty pages later, as he enunciates three principles that will allow the believer to accept miracles with a quiet mind, he includes a response to the epistemological problem:⁷⁵⁰

It is not impossible for a thing to be known to be allowable and possible, and nevertheless, there comes about a decisive assurance (*al-jazm wa l-qata‘*) that it does not exist and does not occur.

The example he chooses this time is blinking at Zayd. We know immediately that the Zayd before us when we open our eyes is the same as the one who was there before we closed them, even though there is a definite possibility (*al-tajwīz al-qaṭā‘ī*) that he is a different person.⁷⁵¹ The reason for this epistemic certainty is a fact of nature.

⁷⁴⁹ *Maṭālib* VIII, 38.

⁷⁵⁰ *Maṭālib* VIII, 97.

⁷⁵¹ He does not relate this to his earlier suggestion in Book V that there is an assurance of the speculative reckoning faculty (*wahm*) and an assurance of the intellect. We may presume the latter.

He amplifies a fundamental point already made in the *Nihāya* that the paradoxes of expectation are irrelevant to adjudicating between the theological merits of an occasionalist or a scientific view of events.⁷⁵² The careful thinker who analyses all possibilities for the origins of things will deduce that they come about either through chance, or through a necessary necessitator, or through a choosing agent. The phenomenon of a succession of Zayds is a real possibility in all three cases, so we know it is absolutely possible. Yet at the same time we know immediately that it is the same Zayd we are looking at on different occasions, however far apart they may be.

This gives Rāzī a reason of principle for departing from pure occasionalism in the direction of the stability and predictability of a peripatetic universe.⁷⁵³ Either things really are being created and destroyed from moment to moment, in which case our self-evident beliefs are fallacious and we have no basis for knowledge at all, or else the universe is regular and our intuitions are reliable. If an occasionalist account stresses the former then we cannot be sure of its truth. If it stresses the latter then it becomes practically indistinguishable from a scientific-theological account. In each case, the latter, has the more plausible claim to truth.

§8.1.2 The Effector of Existence and Agents of Change.

Throughout the *Maṭālib*, Rāzī asserts a fundamental message of the sole existentiating agency of God, even though his universe has a rich cast of natural, human and celestial agents. The tension between these positions emerges in his discussion of miracles in Book VIII. It is in the realm of reasonable possibilities (*iḥtimālāt*) that spirits, stars or spheres are involved in explaining what happens in the world. This, however,

⁷⁵² *Nihāya* I, 167.

⁷⁵³ He hints at an alternative take to the standard argument against the endurance of accidents at *Muḥaṣṣal* 265–267, using the idea of a succession of dependent accidents.

poses a potential threat to interpreting miracles as acts of God.⁷⁵⁴ Rāzī responds with the first of his three principles to which ‘the grace of God leads his servants’:⁷⁵⁵

As for those who accept that the God of the world is a choosing agent, we say we are declaring that there is no effector (*mu’aththir*) at all to bring an entity from non-being into existence apart from that single one. And since this is established, the teaching that there is any other effector apart from God is false, whether they say that it is a star or a sphere or an intellect or a soul or a lofty spirit or a lower spirit.

Rāzī repeats in summary many of the elements of the proof from contingency from Book I, making much of the principle that there can only be one agent responsible for any given effect. This is more than compatible with a strong Ash‘arī approach to all forms of causality. At first glance this sits at odds with many passages where he freely uses the language of *‘illa*, *sabab*, and *ta’thīr* of inner-worldly entities and his account of human choice, which (though caused) still has the ‘liberty of spontaneity’ and makes humans, like any other being with a soul, agents.

There are two pointers to a resolution. One is that his responses focus on the cause of *existence* and thereby imply the Avicennan division of causes into the inner-world causes of change or motion and the intelligible causes of the existence of substances. The argument of the *Mabāḥith* established that there was no reason why God should not act directly to bring individuals into existence. Philosophically both options are sound. The passage above is, then, as compatible with Rāzī’s suggestion in the *Mabāḥith* as it is with a strong Ash‘arī claim.

⁷⁵⁴ *Maṭālib* VIII, 52.

⁷⁵⁵ *Maṭālib* VIII, 93.

A second familiar point appears slipped into a discussion on the source of real possibility (*ṣihḥa*) crucial to the proof for the existence of God.⁷⁵⁶

[This real possibility] will be possible of itself and so it has to have an effector, and that effector is the individual essence (*dhāt*) of God on high, whether we say that this individual essence brings about this real possibility immediately *or by some means* (*mutawassiṭ*).

From the apologetic point of view whether the act is fulfilled immediately or with mediation makes no difference to the principle of absolute divine agency. Once that is allowed, objections to secondary causality (including subordinate existentiating agency) disappear.

This relates to the question of the agency of Nature and natures. Al-Ash‘arī (according to Rāzī) denies natures, while Rāzī himself talks about them freely. But does the language of ‘natures’ entail commitment to an independent, overarching non-intelligent, yet purposive ‘Nature’ – as the materialist philosophies of Empedocles, Democritus and Epicurus practically accept and the philosophical theist Aristotle argues?⁷⁵⁷ Rāzī offers a clear response in his presentation of the argument from design in Book I of the *Maṭālib* with a developed statement of the Quranic argument from the development of the embryo.⁷⁵⁸

He explores a number of different arguments based on standard science to show that the material elements (the seminal fluid and the womb) cannot of themselves transform into the complexity of the human person. Simple and non-conscious causes can

⁷⁵⁶ *Maṭālib* VIII, 94.

⁷⁵⁷ The former group proposes a stable, natural order and purposiveness emerging out of randomness. The latter regards this as counter-intuitive, and argues that purposiveness is in the universe from the outset, and nature is an expression of it.

⁷⁵⁸ *Maṭālib* I, 218–227. This is clearly an important argument in the tradition, both from an Ash‘arī and a Quranic point of view and Rāzī suggests (as Kant will do five and a half centuries later) that this is the most attractive and persuasive of arguments for the existence of God.

only have simple effects. He applies a classical maxim, ‘it is impossible for actions that show wisdom and excellence and are appropriate for some benefit to be produced by something that is not knowledgeable and wise.’⁷⁵⁹ The formation of the embryo is therefore the creative act of a knowledgeable and wise God. He calls this a ‘strong and perfect’ argument. There is no influence of natures and spheres nor is there any ‘generative power’.⁷⁶⁰ He invokes ‘extended’ intuitive knowledge:⁷⁶¹

We know immediately that the natural power that exists in our limbs does not have perfect wisdom and complete power, and we know immediately that anything without knowledge and power cannot bring into being something like this structure that contains within it such remarkable utility.

He also deploys the pitcher analogy as presented by the older Rāzī. Like Paley’s watch, this provides evidence for the soundness of our intuitive reasoning from the purposiveness embedded in an object to a purposeful designer and maker.

He concludes that arguments suggesting these wonderful effects are ‘produced by bare Nature, devoid of knowledge and power’ are feeble and degraded. This position is not alien to Ibn Sīnā’s world, which also requires such complex biological forms to be bestowed by the agent intellect on suitably prepared matter. The criticism of nature here is not that it can have no effects, but that it is not intelligent and so can only have simple effects. In fact, Rāzī’s argument relies on stable natural properties that behave in reliable ways, according to standard scientific understandings.

⁷⁵⁹ *Maṭālib* I, 220.

⁷⁶⁰ *Maṭālib* I, 221–226.

⁷⁶¹ *Maṭālib* I, 224.

The Qur'anic exegesis that follows makes this explicit. Rāzī considers the phrase 'we made him sturdy and established him for a known period'.⁷⁶² Rāzī refers this to the different properties that are acquired by the fluid at the different stages of gestation. This act of creation 'requires' (*yaqtaḍī*) those certain specific steps in every case: the drop ceases to be fluid and clings to the womb; the clinging is 'required' for a determinate time, until the embryo has developed perfectly. Then 'that preserving, clinging nature changes into an emitting, expelling nature, and when that happens the child is separated from the womb.'

Blind Nature has not brought this about, but we cannot describe it without reference to simple natures that have specific observable effects. The Qur'anic exegesis supports something remarkably similar to Ibn Sīnā's doctrine of *isti'dād*.

All such processes are due to the creative action of God, in the case of every animal, however annoying or unpleasant.⁷⁶³ In biology God fulfils the rôle Aristotle assigns to Nature. But does God have to do it directly, or can it be mediated – as it is for Ibn Sīnā with his 'giver of forms'?

Rāzī considers the option that animal bodies may be created by one of the celestial spirits, like a 'soul, or an intellect or one of the angels'. He attributes this view to Hindu philosophy, which (he says) has mortals at the service of such angels, rather than God. He meets the question whether spheres, stars, intellects or souls can be the agents of the formation of bodies with constructive ambiguity. The 'possibility has substance', but stars and spheres are physical bodies with specific individuating properties created by a wise God. So 'this argument has no force for us'. The implication seems to be that insofar as they are physical bodies, themselves created by God, they are not capable of being the

⁷⁶² *Maṭālib* I, 226. *Qur'ān*, 77: 21.

⁷⁶³ Mosquitoes, bed-bugs, ants and worms: *Maṭālib* I, 223 (objection) and 226 (response).

source of the wise action – though (as the Quranic exegesis shows) that need not mean they are not involved in someone else’s wise action.

The question of whether intellects and souls might be involved in this ordering, however, yields slightly different response. Again, ‘the possibility has substance’ but now:

Nevertheless, we say that if that intellect or soul were possible of existence, it would require a cause (*sabab*) and circular arguments and regresses are false, so this must end with something that is a necessary existent of itself, and if that thing were necessary of existence then that is what we aimed to show.

Rāzī sidles away from the question of whether actions showing wisdom and knowledge can *only come* from God to the rather different, earlier question whether all agents of such actions are *ultimately dependent* on God. This rhetorical blurring of the lines allows space for intelligent celestial agency (whether on an Avicennan or astrological model) in the workings of the world, but always on the understanding that such agency, along with its very existence, is ultimately dependent on the one necessary being.

§8.2 Natures, Elements and Change in the Lower World

Ibrahim argues on the basis of a close reading of the *Mabāḥith* and the *Mulakhkhaṣ* that Rāzī rejects the form-matter analysis of Ibn Sīnā not just with respect to prime matter and bodily form, but with respect to elemental natures. Rather than forms and essences, there are embodied powers that manifest in attributes like hot and cold etc. in neutral bodies.⁷⁶⁴ He points out Rāzī’s empiricist critique of dogmatic positions on the reality of the four sublunary elements and their limitation to four, and makes powerful connections with

⁷⁶⁴ Ibrahim 2020: 96. ‘As noted, for Rāzī, powers are empirical objects that exhibit certain dispositions and capacities. As we will see, he rejects the notion of powers as natures and forms, which is central to Avicenna’s approach.’

the wider currents of criticism of the peripatetic tradition from antiquity.⁷⁶⁵ Ibrahim suggests that in the end ‘he envisions a contingent world, like that of classical *kalām*, but one that is explanatorily more complex (and epistemically more cautious) than the limited atomistic framework of the latter.’⁷⁶⁶

Much of Ibrahim’s argument is powerful and persuasive. However, there is an ambiguity in it that needs to be resolved. Either Rāzī wants to reject the idea that there are embodied essences in the real world in favour of bundles of properties in extended bodies or he wants to consider extending the number of elemental substances beyond the four established by inductive methods. The first would bring him closer to a classical *kalām* position and the second would bring him closer to modern chemistry. That Rāzī is exploring the fault lines in the creaking apparatus of classical peripatetic thought is not in dispute. However, Ibrahim himself does not seem to believe that Rāzī is abandoning the idea that there are real natural kinds in the world. In fact, we have argued in Part II that Rāzī is optimistic about being able to acquire knowledge of simple and complex essences by appropriate empirical methods.

This section will refer predominantly to the *Sharḥ al-Ishārāt* where we can see more clearly how Rāzī reacts to specific positions of Ibn Sīnā. The discussion of elemental substances and complex change in particular will provide a basis for assessing the more radical element in Ibrahim’s views. I want to suggest that Rāzī continues to hold to a fundamentally hylomorphic structure of the world. However, this turns out to be significantly different from the more classical hylomorphism of Ibn Sīnā.

⁷⁶⁵ Ibrahim 2020: 98–105.

⁷⁶⁶ Ibrahim 2020: 109.

We can begin with an alternative reading of one key passage cited by Ibrahim in support of his stronger claim. The passage reads as follows in Ibrahim's translation:⁷⁶⁷

now that that which has been obtained by proof is the grounding (*istinād*) of these attributes, like place, quality, and others, in powers that exist in a body, which are conserved in themselves (*maḥfūzat al-dhawāt*) and which return the body to these qualities upon the cessation of constraints and obstacles. As for whether those things are causes for the existence of corporeality, so that they correspond to constitutive forms (*ṣuwar*), or are not, so that they correspond to attributes (*a'rād*), is something that has not been established by demonstration. What is closer [to the truth] according to us is not to make these causes of corporeality and to not count them as forms but rather as attributes.

The immediate discussion in the *Mabāḥith* passage is of the powers in a body that generate (for instance) the motion of fire upwards, its heat and its outward appearance. The question is whether those powers are accidents or forms. Rāzī opts for accidents (*a'rād*), which Ibrahim plausibly translates as 'attributes'. For Ibrahim this is an indication that Rāzī is abandoning the idea of a formally defined essence of fire in favour of something much more Ash'arī-like, namely inherent powers that generate phenomenal properties in otherwise neutral bodies.

It is certainly true that Rāzī is separating powers from forms. It is less clear that he is abandoning forms. An alternative reading is possible. The first thing to note, is that although he questions whether these powers qualify as forms that constitute the body, he has not suggested that the forms of the elements fire, water etc. have no ontological status. Secondly, the specific question is whether each of the three separate powers is indeed a form that contributes to constituting the body as fire.

⁷⁶⁷ Ibrahim 2020: 97–98; *Mabāḥith* 62–63:

Rāzī, as so often, does exegesis and finds another context where Ibn Sīnā rejects the idea that multiple forms on the same ontological plane can constitute a single being. But this is different from the case of multiple constituting forms in complex bodies, which are arranged hierarchically. It is on that basis – the fact that there are three correlative powers in question – that he prefers to label them accidents rather than forms. In context, though, because these are ‘essentially preserved’ powers, ‘accidents’ must mean entailed accidents – i.e. accidents proper to a specific sort of essence.

An alternative reading, then, is that this is an area where the Peripatetic terminology has long been found inadequate. Ibn Sīnā’s own discussion of nature suggests that the form of a thing is what generates its quality (heat) whereas the nature is the power that generates its effect (upward motion).⁷⁶⁸ That is already very different from Aristotle’s broad-brush use of terms. Similarly, the genuine criticism of the classic account of the four elements that Ibrahim identifies may be better read as a move towards modification of the form-matter paradigm, than towards its outright rejection.

§8.2.1 Natures in the *Sharḥ al-Ishārāt*

Rāzī is providing a positive elucidation rather than a critique in the *Sharḥ al-Ishārāt*. Nevertheless, he is not afraid to raise objections in specific areas that are recognisably similar to the doctrines rejected in the *Maṭālib*. Thus, on atoms and bodily form we find a clear foreshadowing of his later position.⁷⁶⁹ However, when it comes to natures, though there is some disagreement on detail, Rāzī’s presentation is positive, and gives useful background to some of the material we have already explored.

⁷⁶⁸ Ibn Sīnā, *Physics*, I, 6, §2, 45.

⁷⁶⁹ *Sharḥ* (Physics), 8–9; 75–81.

Thus, Ibn Sīnā offers an account of a simple body ‘whose nature is one and that contains no complex of powers and natures’. Such a body cannot have different effects.⁷⁷⁰ There is of course a puzzle here, because fire, for instance, will do different things to different substances. Rāzī puts the statement in the wider context of things that inhere in bodies and are sources of effects:⁷⁷¹

The first is what produces an effect in a single mode without any awareness, and that is a nature. The second is what produces the effect in a single mode with awareness and this is the celestial soul. And the third is what produces an effect not in a single mode, but with awareness, and that is the animal potential (*quwwa*) and the fourth is what produces an effect not in a single mode, but without awareness and that is the vegetative potential.

Rāzī interprets ‘not having different effects’ not to mean that a simple body only has one effect, but rather that a simple body (or a celestial soul) consistently has the *same* effects.⁷⁷² Some might suggest that fire has one nature that makes it hot, another that makes it dry and another that makes it rarefied, but that would not make the body of fire, each part of which has all these natures, complex.⁷⁷³ But then with regard to natures themselves:

Whether a nature produces one effect or more than one, that... does not necessitate that effect at one time rather than another or in one substrate rather than another, but at all times and substrates in a single fashion. For we have shown that nature is a power from which an effect is produced in a substrate in a unique sequence.

⁷⁷⁰ *Sharḥ* (Physics), 124.

⁷⁷¹ *Sharḥ* (Physics), 124–125. Compare Ibn Sīnā *Physics*, I, 5, §3, 39.

⁷⁷² This will be important for Rāzī’s account of astrology, which relies on regularity.

⁷⁷³ *Sharḥ* (Physics), 126. Rāzī will go on to raise doubts about identifying ‘the hot’, ‘the dry’ and ‘the rarefied’ as one same thing.

§8.2.2 Elements and Change: Natures and Sources of Motion

We can recall that Ibn Sīnā limits sublunary agents (including ‘natures’) to motion and accidental change. Generation and decay – existentiation or substantial change in the biological and elemental realm – is the remit of the agent intellect. In this section we want to look at Rāzī’s elucidation of Ibn Sīnā on the sources of motion.

Rāzī’s later ontology of motion and change in the *Muḥaṣṣal* and in the *Maṭālib* is, of course, firmly embedded in an atomistic universe. Rāzī there echoes al-Ash‘arī in describing motion and rest as members of the same kind, whose common feature is ‘being-in-a-place’ (*kawn*).⁷⁷⁴ He states this formally at the beginning of Book IV of the *Maṭālib*, as he sets out a *kalām* categorisation of the accidents, dividing them into accidents of perception and accidents of place. Being in a place is a genus that has four species under it, motion, rest, combination and separation.⁷⁷⁵ Motion, whether motion proper or qualitative change is, we have seen, grainy, not continuous.

However, his commitment to atomistic substructures need not affect other aspects of his views on the science of the empirical world. Rāzī sets his later views on atomism in a philosophical rather than a partisan context and clearly departs from a standard *kalām* position in his discussion of time, space and the void. When confronted with the millstone problem, he keeps options open between agnostic acceptance of a brute fact and the need for agent-intervention. This nuance in the later work suggests that his elucidation of Ibn Sīnā on the sources of motion, insofar as it is independent of the question of the substructures of body, space and time, still stands.⁷⁷⁶

⁷⁷⁴ Ibn Furak, *Mujarrad*. 262. Al-Ash‘arī speaks of *jins* (genus or category), while Rāzī speaks of *naw‘* (species) at *Muḥaṣṣal* 238.

⁷⁷⁵ *Maṭālib*, IV, 10-11.

⁷⁷⁶ *Sharḥ* (Physics), 132ff.

Ibn Sīnā calls ‘nature’ (*ṭabīʿa*) and ‘characteristic’ (*tabʿ*) principles of motion, the one inanimate, the other sentient. Rāzī follows this through. Every body, left to its own devices, when no ‘strange effectuation supervenes on it from outside’, has to have a determinate shape (*shakl*) and a determinate position (*waḍʿ*). This explains the natural motions of fire and the other elements:⁷⁷⁷

It is an established fact that this power [that is the natural motive power] continually demands that the body be brought about in that place, whether it is actually occurrent in that place or not.

Ibn Sīnā’s discussion of impetus (*mayl*) followed Philoponus’ account of why the arrow flies rather than Aristotle’s.⁷⁷⁸ Rāzī pursues this. Ibn Sīnā distinguishes between the impetus that comes from the natural characteristic of a body and the impetus that comes from an external cause. His model for the process (Rāzī will illustrate with the stone flung upward) is that the external impetus initially cancels out the natural impetus, eventually ceases and then the natural impetus takes over.⁷⁷⁹ Rāzī adds, using experimental examples, that impetus is distinct from motion and motive potential, equating it with ‘thrust’ (*mudāfaʿa*). Ibn Sīnā mentions that strong and weak impetus can be felt. Rāzī notes that ‘that is something known self-evidently upon reflection’. Once more, though Rāzī’s epistemology may emphasise the sensory over the conceptual more than the Peripatetics, when it comes to practical science, they are not that far apart.

⁷⁷⁷ *Sharḥ* (Physics), 133.

⁷⁷⁸ ‘Impetus’, ‘impulse’ or ‘inclination’, Greek *ρoπη*. It is an ancestor of momentum, but hazier in the absence of a mathematical definition of velocity, acceleration and force. *Sharḥ* (Physics) 133–141.

⁷⁷⁹ Rāzī will later refer to some of the difficulties with the mechanics of *mayl* further on, including Abū Barakāt al-Baghdādī’s alternative to Ibn Sīnā’s account of the resolution of contrary forces, whereby every movement has to have some countervailing impetus in order to prevent a motion that takes no time.

Impetus is related to the natural motions. It may be inanimate (the flask of air held under water thrusting upwards) or animate (the animal seeking something out or avoiding something) or the result of an external force. We can feel the thrust because we can feel the pressure (*i^ctimād*).⁷⁸⁰ Such natural impetus is associated either with lightness or with heaviness:

Every thrust is directed towards a region, so natural thrust is a natural directedness towards a region, and the true regions (as you have learnt) are two, so there are two natural impetuses, weight – which is downward impetus – and lightness – which is upward impetus.

This is compatible with the theory of space Rāzī will present in the *Maṭālib*, which is neither *kalām*'s indemonstrable non-existent, nor the surrounding body of peripatetic theory, but which is real empty dimensionality with regional characteristics.⁷⁸¹ It is also not occasionalist. The natural, and forced motions of embodied entities are sustained by various forms of impetus, an enduring thing in the world.

§8.2.3 Elements and Change: Properties, Transmutation and Scientific Doubts

Ibrahim rightly points out that it is in the blurred boundaries between qualitative change in the elements (water getting hotter and becoming steam) and transmutation (water becoming fire or air) that Rāzī offers some of his most sustained criticism of classical Peripatetic positions.⁷⁸² He argues, that we can see Rāzī moving away from Avicennan hylomorphism where the form in some way 'constitutes' the matter in which it inheres, towards a 'substrate-plus-accident' view, in which essences are dissolved in phenomenal

⁷⁸⁰ *Sharḥ* (Physics), 134.

⁷⁸¹ As is clear from *Sharḥ* (Physics) 128 and 134, Rāzī attributes the motion to proper region (earth belongs in the centre), rather than sympathetic attraction (earth is attracted to earth).

⁷⁸² Ibrahim 2020: 89: 'He asks how we know whether the change from one element to another (say, from water to air) involves substantial change rather than accidental change.'

properties.⁷⁸³ The first part seems correct. We would attribute this to his rejection of the Plotinian element of Ibn Sīnā's narrative, which gives ontological priority to the intelligible realm. It is less clear that Rāzī is abandoning completely the hylomorphism found in the Peripatetic and medical traditions. Rāzī continues to talk of essences and he continues to hold something like the multi-level hylomorphism of the medical and peripatetic science, even as he calls some beloved dogmas (and empirical results) into question.

I suggested earlier that we should already think of *kalām* atomism as a simple (single-tier) form of hylomorphism: atomic properties (accidents) inhere in an atomic material substrate. This is clearly distinct from Epicurean atomism, for instance, or Democritean atomism, where the only real properties are those generated by the contiguities and shapes of the atoms themselves. The key difference with the Peripatetic hylomorphic system is that in the latter, objects with a substance-form (like trees) provide the substrate for a distinctive range of accidental properties, and can themselves be subsumed, in conjunction with other substance types under higher substance-forms. It is that hierarchy (along with the notion of natures and essences) that is rejected in the single tier *kalām* account. Nevertheless, there are similarities, and it seems that these may have been recognised and exploited by Ibn Sīnā in a limited way and by Rāzī in a thoroughgoing way.

Ibrahim claims that Rāzī replaces the notion of natures and essences with a narrative of powers and accidents. If correct, that would imply that he is not interested in classifying distinctive kinds of body, just distinctive bundles of properties. However, the thrust of the epistemological argument of Part II was that identifying distinctive property bundles is precisely what enables us to identify otherwise elusive natural kinds of embodied entity. Moreover, though he does certainly criticise inadequacies in accounts of

⁷⁸³ Ibrahim 2020: 93.

the elemental properties and their transmutations, he also questions the empirical evidence for their inter-transmutability. That hardly squares with abandoning the idea of natural kinds. There is then the simple fact that he continues to deploy significant elements of the peripatetic vocabulary (nature, real-essence (*ḥaqīqa*), definitional essence (*māhiyya*) etc.) in all his works from the *Mabāḥith* to the *Maṭālib* in spite of the real criticisms that Ibrahim highlights.

The criticisms, then, are not so much to do with abandoning a hierarchical form-matter ontology of embodied substances *per se* as with participating in the long-running critique of its procrustean, classical form from a perspective informed both by the *kalām* phenomenalist and atomist tradition as well as by the extended philosophical tradition. It is very significant that his criticisms are often extensions of observations Ibn Sīnā himself makes, with the implication that deep-down, they are making common cause.

Ibn Sīnā himself begins his discussion of the elements in the *Ishārāt* from the point of view of their phenomenal properties, considered as powers. He names heat, cold, burning, numbing, moistness, dryness, smoothness, hardness, stickiness, friability.⁷⁸⁴ Some of these count as active powers (burning), some as passive (friability). Rāzī carefully explicates the relationship between such powers and the objects that possess them. It is fire, not heat, that sets alight and cotton, not its inflammability, that burns. What the powers do, in another echo of Ash‘arī *qudra*, is render their possessors apt (*yuhayya*) to perform a particular action or to undergo a particular effect. They are the internal causes (*‘ilal*) of that aptitude.

Rāzī presents Ibn Sīnā’s explanatory definition of heat as ‘an active quality that moves what is in it upwards by causing it to become light’, but rejects this for familiar

⁷⁸⁴ *Sharḥ* (Physics), 157-158.

reasons. Firstly, it is very hard to establish the definition beyond reasonable doubt and secondly heat's definitional essence (*māhiyya*) is something immediately known to the senses, and we should not explain the self-evident in terms of the obscure.⁷⁸⁵

Why, then, does he not challenge Ibn Sīnā when he explains burning as 'that which has a very light penetrative quality, that brings about in a connected body numerous separations close to each other in position...sensed as a whole as a single wrenching'? Or 'numbing' as when the chill from the cold object 'reaches the organ so that the substance of the spirit that conveys to it the power of sense and movement becomes cold... and thickened...so that the powers of the soul cannot operate in it.'⁷⁸⁶ In these cases, perhaps, the definitions do have a real explanatory power not captured by the immediate experience of numbing and burning.

When it comes to moist and dry, he challenges the definition of the former as a source of adhesion, not on the grounds of obscurity, but on the grounds of evidence. Pure water, which is as moist as you can get, is actually less adhesive than honey: the rules of co-extension do not work. He accepts instead the description of moistness as 'the ease with which [an object] is receptive to alien forms and the ease with which it abandons them'. He here uses the word *rasm* rather than *ḥadd*, consistently with the principle that a description is the compilation of phenomenal effects of an essence. He describes dryness in the opposite terms. This time he spells out why these explanatory accounts (*aqwāl shāḥira*) are successful. "Ease of receiving form" and "ease of adhesion and separation" are known immediately'.⁷⁸⁷ The question is simply which one of these phenomenal properties is to be identified as moistness.

⁷⁸⁵ *Sharḥ* (Physics), 159–160.

⁷⁸⁶ *Sharḥ* (Physics), 161.

⁷⁸⁷ *Sharḥ* (Physics), 162.

Although Rāzī goes through the other properties listed, he concludes his elucidation of Ibn Sīnā's position with the claim that the simple bodies must have an active quality and a passive quality otherwise they could not interact and no higher-order bodies would come into being. However, those simple bodies 'are devoid of all active and passive powers apart from heat, cold, moisture and dryness'.⁷⁸⁸ This is something indicated by inductive examination (*istiqrāʾ*). Accordingly, those four properties are the 'primary active and passive qualities of the elements (*arkān* – 'pillars'). The other properties, he suggests, are listed because they relate to the perceptual powers of animals. These passages show something of the care with which Rāzī treats peripatetic claims in the light of his own epistemological commitments. They also show that his preference for phenomenal accounts of natural objects is not completely at odds with Ibn Sīnā's approach.

We now come to the area where the classical dogmas become questionable. Ibn Sīnā describes fire as the element that is predominantly hot, water, the element that is predominantly cold, air the element that is predominantly fluid (*mayʿān*), earth the element that is predominantly solid (*jumūd*).⁷⁸⁹ However Rāzī invokes Abū l-Barakāt al-Baghdādī's counter-claim that actually earth is colder than water – cold goes with density and lightness with heat. Water *feels* colder because it reaches the pores, just as molten bronze feels hotter to the senses than fire, because the bronze is slow to separate from the hand.⁷⁹⁰

On Ibn Sīnā's account (at this point) a sort of transmutation between the elements takes place because one or other of the characteristic properties shifts.⁷⁹¹

In comparison to water, air is hot and light, and water becomes like it when it is boiled and becomes light. And when earth is on its own and its characteristic

⁷⁸⁸ *Sharḥ* (Physics), 164.

⁷⁸⁹ *Sharḥ* (Physics), 165ff.

⁷⁹⁰ *Sharḥ* (Physics), 166–167.

⁷⁹¹ *Sharḥ* (Physics), 165.

state is not heated by some cause (*'illa*) it is cold. And when fire is extinguished and its heat leaves it, there emerge from it solid earthen bodies, such as are thrown out of thunder clouds.

Rāzī, again explores the empirical basis for these claims. In the first case, water becomes light because it turns to steam, a mixture of small particles of air mixed with small particles of water. So what Ibn Sīnā means is that the act of boiling water is the cause (*sabab*) of its transformation into air. This works because ‘being heated’ is natural for air. Rāzī notes that this is a persuasive argument (*iqnāʿī*), that is to say, it is supported by repeated observations, but cannot yield more than plausible belief.

Rāzī accepts the argument that earth is naturally cold, but attacks the suggestion that solidity comes from the removal of heat. He exposes the weakness of the theory by suggesting an alternative explanation for the phenomenon of Ibn Sīnā’s ‘solid earthen bodies’, which he takes to be the chunks of iron and bronze arrowheads (presumably meteorites) reported as being thrown out of thunderclouds. Why should this simply be down to the loss of heat?⁷⁹²

Why is it not possible to say that [the iron and bronze] came into being because bodies that were steamy and fummy because of the quantity of their movement turned out to be similar to the steams and fumes from which iron is generated in the mine, then they rise to the sphere of aether and they bake together and from them is generated the iron?

This is a better explanation, because it explains why *different* solid bodies (bronze, iron, stone) are ejected from the clouds. If loss of heat was the single cause, they should be all the same.

⁷⁹² *Sharḥ* (Physics), 170.

Ibn Sīnā's account is questioned not for theological or epistemological, but for scientific reasons. The neat procrustean peripatetic bed in which each of the four elements has a pair of entailed properties does not provide a sufficient explanation for the facts. A better account can be given in terms of evidence that would seem to be based on empirical data from observational vulcanology and metallurgy. We are in the transition zone from classic four-element theory towards modern chemistry.

Rāzī's challenge to Ibn Sīnā's account of transmutation itself implies anything but an abandonment of interest in embodied natural kinds.⁷⁹³ Rāzī certainly agrees that entities have common underlying matter. This, however, does not stop him criticising some of those experimental proofs for elemental transmutation offered by Ibn Sīnā which provide support for that notion.

Ibn Sīnā's first piece of evidence is the formation of water droplets on the outer surface of a jar filled with ice. This shows that as air loses its heat it turns to water. Rāzī criticises the weakness of the argument by analogy and reformulates it, to eliminate alternative explanations, before attacking the stronger version. One of the more powerful counter-examples is meteorological. If cold changes air to water on the surface of a chilled jar, then it should do so all the more in the depths of the arctic winter. However, this is not what happens.⁷⁹⁴ The same objection applies to Ibn Sīnā's second example of clouds gathering around mountain tops and producing snow. Here Rāzī brings in Abū l-Barakāt al-Baghdādī's alternative explanation of particles rising, losing heat and falling, condensing in the process.⁷⁹⁵

⁷⁹³ *Sharḥ* (Physics), 172–179.

⁷⁹⁴ *Sharḥ* (Physics), 176–177.

⁷⁹⁵ *Sharḥ* (Physics), 178. See Abū l-Barakāt al-Baghdādī, *Mu'tabar* (Physics), 213–217.

Rāzī thereafter simply lists the examples standardly given. Squeezed bellows show that air becomes fire; deliquescent salts are evidence that earth becomes water; waters rising from springs form stones (stalagmites and stalactites, presumably). His final comments are that the examples only work for those who have seen and validated the experiments for themselves, and that even then there is a lot more work that needs to be done thereafter to turn these pieces of evidence into sound syllogisms.⁷⁹⁶ Last of all, he suggests a significant alternative explanation, which he attributes to ‘several of our colleagues’:⁷⁹⁷

...who allow a transformation in quality while the species form remains the same.

So why is it not possible to say that when water becomes air, this is not because the form of water has ceased to exist, but because its quality of wateriness and cold has ceased to exist, even though the form of water continues?

And so on. Thus, the case for the transmutation of elements is not proven. This is not an abandonment of a theory of specific bodily substances. Rather it is a pointer towards an account of state change rather than chemical change.

So non-transmuting stable elements might share phenomenal properties. But that is not completely alien to Ibn Sīnā’s account. Fire can cool and become solid, water can heat and become vaporous. Rāzī concludes that since ‘these four questions are settled’ and it is established that the matter of each of the elements is receptive to having as an attribute the form of the others, necessarily they have a common underlying matter (*hayūlī*).

⁷⁹⁶ This is absolutely consistent with the claims about empirical reasoning discussed in Part II.

⁷⁹⁷ ‘Species form’ is used here in the sense of individual elemental form, rather than the earlier Avicennan species form differentiating between celestial bodies and elemental bodies (discussed at Sharḥ 77–79; the species form is a subdivision of the bodily form).

In the light of what has gone before this is highly ambiguous. The choice of *mādda* for the matter of the elements and *hayūlī* for the common matter, along with *ṣūra* as what is shared, rather than *ṣūra naw‘iyya* suggests that Rāzī is hedging his bets about inter-elemental transmutation, while acknowledging there is enough material to argue for a common underlying matter. Ibrahim is absolutely correct that this is science wrestling with ambiguous phenomena, but it is not science rejecting the notion of natural kinds of bodies.

§8.2.4 Compounds and higher-order structures

Transmutation of elements, and the delicate relation between form and sensible qualities comes up again, when Ibn Sīnā considers the elements as ‘primary pillars’ or ‘principles of generation and corruption’.⁷⁹⁸ According to Rāzī the first phrase refers to the rôle of the elements in structuring the universe by naturally (and uniquely) occupying the four sublunary spheres. The second part (generation and corruption) refers to their role as the ingredients for higher-order complexes. The place of the elements in the universe, he claims, is something that can be demonstrated (*burhānī*), while the claim about the relation to complexes is something arrived at by inductive investigation (*istiqrāṭī*).⁷⁹⁹ This is how Rāzī explains Ibn Sīnā’s point:⁸⁰⁰

What he means is that inductive examination and tracing of the states of complexes in the states of their combination and dissolution indicate that they are compounded of these four. For it has to be the case that one of these four preponderates in it. This is the argument that the doctors present in their books to

⁷⁹⁸ *Sharḥ* (Physics) 180-184.

⁷⁹⁹ *Sharḥ* (Physics) 184. Thus, he explains why Ibn Sīnā calls this section a ‘pointer and a note’: the pointer refers to the demonstrative element, the note to the inductive element.

⁸⁰⁰ *Sharḥ* (Physics), 183. Rāzī does go on to raise questions about how the element ‘fire’ can be generated in bodies with mixtures of the other three elements, anticipating Ibn Sīnā’s concluding discussion on that element. We can note once again that methodologically Rāzī and Ibn Sīnā are not actually that far apart on the status of medical or other inductive proofs about the behaviour of the primary elements.

show that there are four elements, and these are well known, so we do not need to mention them.

Ibn Sīnā sets out the relationship between the elements and higher substances (animal, vegetable mineral). He uses the theological language of creation (*khalq*) alongside his notion of inner-world predisposition, a useful reminder that the gap between Ash‘arī divine agency and Avicennan divine action is not so great after all:⁸⁰¹

From these are created what is created through mixtures that happen to them in different proportions that predispose them for different creations.

This passage reiterates the distinction between the form, that constitutes the element, and its phenomenal qualities (heat, solidity etc). For Ibn Sīnā the form may not change, but the phenomenal qualities (the entailed accidents) can have greater and lesser intensity. Water can be hot instead of cold and solid instead of fluid, but still remain water.

Rāzī now challenges the earlier speculation that all bodies can share the qualities of all the other bodies. This may be true with water, but the analogy does not work for the other elements. Fire that is no longer hot is no longer fire. Similarly in the case of air that is no longer fluid and earth when it is no longer dry. These, then, are not accidental qualities, but actually belong to the *form* of the respective elements. The neat division between form and correlated phenomena that the whole section on the elements began with now looks a mess. Rāzī suggests later that Ibn Sīnā himself is aware of the problem, and that is part of the reason why he talks of fire’s transformation into earth (rather than its losing its heat).⁸⁰²

⁸⁰¹ *Sharḥ* (Physics), 184. For Ibn Sīnā through the intermediation of the ‘giver of forms’.

⁸⁰² *Sharḥ* (Physics), 191.

But the distinction of form and property, and the capacity for elements to share one another's properties is important for Ibn Sīnā's account of higher transformations. The forms (*ṣuwar*) of the elements are preserved while their phenomenal 'qualities' (*kayfiyyāt*) scale down until they find an equilibrium. At this point, the compound is 'readied' to receive the higher form. Rāzī explains the problem this solves. If any of the forms is annihilated in a compound, then they can no longer have any effect on the compound's nature, and if all are annihilated there is no compound at all.⁸⁰³ Therefore, it is not the elemental forms that disappear to produce a single new form, but their differentiated qualities that become homogenised.⁸⁰⁴ He offers a scientific criticism of the proposal. Ibn Sīnā has only considered the case of equilibrium for hot and cold, and has not shown that this works for moist and dry.⁸⁰⁵

At the end of the section Ibn Sīnā waxes unexpectedly lyrical:⁸⁰⁶

Consider the wisdom of the craftsman. In the beginning he created the principles, then from them he created the six mixtures, and prepared each mixture for its species, and he made it so that the further the mixtures are from equilibrium, then the further the species are from perfection, and he made the mixture of the human the closest of them possible to equilibrium, so that it would be made suitable for the rational soul.

This is very similar to the language we see Rāzī himself using in Book I of the *Maṭālib* when extolling the wonderful properties of the elements.⁸⁰⁷ Rāzī's commentary is all the

⁸⁰³ *Sharḥ* (Physics), 187. Cf *Muḥaṣṣal*, 323-324. Ibn Sīnā *Physics*, I, 6, §5 and I, 8, §4.

⁸⁰⁴ A position challenged at *Muḥaṣṣal*, 324.

⁸⁰⁵ Perhaps because in the *Ishārāt* it is clear that the source of the effects is the element, not its phenomenal property. 'He means the elements will be interacting through their forms on these qualities' *Sharḥ* (Physics) 189.

⁸⁰⁶ *Sharḥ* (Physics), 198-199.

⁸⁰⁷ *Maṭālib* I, 215.

more striking for its cold precision. After paraphrasing Ibn Sīnā's words, he criticises him for a rhetorical flight that leads him to blur the precision of his earlier presentation.⁸⁰⁸

Nevertheless, every mixture is readied of itself to receive a form, and what is actual of a thing of itself cannot be 'made so' by something else... even if [the existence of the mixture] were through the agent, nevertheless, its being readied to receive the species form is not through the agent but of itself.

This is a robust defence of the independence of natural processes, once their elements are called into existence.⁸⁰⁹ Once more, he shows himself less worried about the theology and more interested in making sure that the science is as good as possible. This little interchange, with Ibn Sīnā declaiming like a theologian and glossing over the instrumentalist details of his theory of divine action in the physical universe and Rāzī's stern 'scientific' response, may also indicate which way we should resolve some of the ambiguities we have noted in Rāzī's own language in the *Maṭālib*.

§8.3 Conclusion

In this chapter we have revisited the topic of miracles in the *Maṭālib* and the epistemological questions they raise. We have found Rāzī reinforcing the point that whether occasionalism or necessitation gives a truer account of change in the world makes no practical difference to the question of our epistemic certainty about what can and cannot happen. Miracles are equally possible on both accounts. However, to insist on real possibility in the world undermines the justified certainties (*jazm - yaqīniyyāt*). These are

⁸⁰⁸ *Sharḥ* (Physics), 198.

⁸⁰⁹ Rāzī also suggests that the equation of balance and perfection is poetic licence: 'the investigations of medicine establish that the most balanced (homogeneous?) of organs are the fingernails'. These should then be the most appropriate seat for the soul rather than the very unbalanced heart.

both a fact of life and vital to the rational enterprise, which includes proving the existence of a beneficent God.

The *Sharḥ al-Ishārāt* gave us a frame for exploring Rāzī's understanding of elemental and higher order physical changes. We tested Bilal Ibrahim's argument that Rāzī is doing a radically different sort of science from Ibn Sīnā's and rejecting Peripatetic hylomorphism, in favour of a science based on analysis of phenomena as powers and attributes in bodies. In line with the conclusions of Part II, we accept that Rāzī's theory of science is very different from Ibn Sīnā's. It does privilege primary sense data as a source of essential knowledge, and it does claim that universals are to be found in the world. However, once one removes Ibn Sīnā's emanationist Plotinian ontology and the epistemology that goes with it, Rāzī and he seem to have much in common. Both recognise the limitations of practical science about the material world and both note the difficulty of providing more than plausible accounts of why things happen.

Ibrahim seems to be absolutely correct that Rāzī joins the long queue of critics of a Peripatetic system that fails to account for conflicting data from medicine, meteorology and metallurgy. He casts doubts on certainties about whether four-element theory is complete and about the relationship between the forms of the elements and the qualities they manifest. He challenges the doctrine of the intertransmutability of the elements. As with his eventual rejection of bodily-form theory this signals a definitive break with a classical hylomorphic package.

However, in a looser sense it remains hylomorphic, and more like peripatetic hylomorphism with its higher and lower tiers of property-bearing substances than like *kalām* single-tier atomic hylomorphism. At this point the dispute becomes *lafziyya*. Nevertheless, it is useful to recognise that Rāzī accepts a world of complex bodies that are distinct from each other in kind *in re*, that are connected in an ontological hierarchy and

whose stable properties provide an explanation for why things happen within the world. The methodical search for convergent, co-extensive descriptions allows us to make useful and true classifications and form explanatory syllogisms, which provide a plausible account of such a world, worthy of intelligent assent.

Such a modified, cautiously hylomorphic, picture emerges in Book I and Book VI of the *Maṭālib*. It is an important aspect of Rāzī's creative fusion of *kalām* and philosophy alongside his analysis of the atomic substructures of a world. But to complete the picture, and explore Rāzī's alternative approaches to Ibn Sīnā's model of an inner-world necessity we need to consider celestial agents, and turn to cosmology.

Chapter 9 Souls, Spheres and Stars: Cosmic Causality

In the *Mabāḥith* Rāzī resolved two of the major objections to a *falsafa* universe of natural causes and subordinate agents. By overturning the doctrine that ‘the One can only produce one’ and by challenging Avicenna’s psychology of embodied perceptual faculties, he made logical space for a God who can know and act on material particulars. Though argument cannot resolve whether it is Avicenna’s agent intellect or God who assigns substantial forms (and souls) to the predisposed (*musta‘add*) materials of the universe, a more Ash‘arī-friendly reading of science is now possible.

He reframed the problem of God as ‘necessitated necessitator’ with the ideas of the eternal will and necessity of the fact. The eternal will has free choice, but some of its creative action may be dependent on the right conditions in the evolution of the universe. When those conditions are fulfilled the action becomes necessary. This necessity, however, does not imply any constraint on God’s freedom. It is merely a necessity of the fact, a consequence of existing rather than not-existing, and is still ultimately dependent on the free choice of God.

In the *Maṭālib* Rāzī takes the question of the proximate agent of actualisation in a new direction. Here he challenges Ibn Sīnā’s sole ‘giver of forms’ by asking why there should not be *multiple* celestial agents involved in generating human souls, so revealing a distinctive set of theological and spiritual commitments.⁸¹⁰ Rāzī’s interest in Sabian accounts of the influence of celestial agents in the fashioning of individual souls is well-assessed by Noble, who argues for Rāzī’s attraction, both in the *Sirr al-Maktūm* and in the *Maṭālib*, to a spirituality of perfection, based on a relationship with the celestial agent responsible for each individual’s ‘perfect nature’.⁸¹¹ The discussions on cosmology in the

⁸¹⁰ *Maṭālib* VII, 265ff.

⁸¹¹ Noble 2021: 237–249.

Maṭālib, though preserving Rāzī's commitment to scientific method and the demands of rational argument, are inevitably shaped both by this very personal set of interests highlighted by Noble, and a sense of participation in a broad, rational project, common to humanity, to understand the workings of the world.⁸¹²

Rāzī accepts that inanimate natures on their own cannot bring about purposive complexity. That was the basis for his version of the argument from design in Book I. But in Book VII of the *Maṭālib* he argues for multiple animate, non-material agents in the world, capable of choosing and achieving a range of purposes by manipulating matter, analogously to the simple range of effects brought about by the elements. Though his language of agency is often ambiguous, (he will sometimes talk of the sole agency of God, and sometimes of the agency of other actors – humans, stars and planets) he does not believe that having many entities capable of 'freely choosing' and purposive action entails, overall, a conflict of agency and outcomes in the universe.

As Ayman Shihadeh has shown, Rāzī's developed understanding of 'freely-choosing' for inner world entities validates our experience of spontaneous, free and effective choice, but holds that the choices themselves are determined by desires, aversions and habits. These are generated from a wider complex of causes and effects in the universe over which we have no control.⁸¹³ Our free choices are ultimately just as determined by the one will of God as the capacity of fire to heat and water to cool. All created liberty is the liberty of spontaneity: only God has the liberty of indifference.

⁸¹² See *Maṭālib* VIII, 152 (proofs for the reliability of astrology). In this domain, Rāzī's science and philosophy clearly extends beyond the confines of the Hellenic tradition. For the regional importance of astrology and its social and political significance from the early phases of the translation movement, see Gutas 1998: 29–52.

⁸¹³ Shihadeh 2006: 7–44. Cf *Maṭālib* III, 73.

This chapter, then, focuses on the agency of the last of Rāzī's three non-material entities, the soul, and the causality of intelligent, celestial agents. We shall look at the proof for the existence of the human soul, the account of its qualities, its capabilities in relation to the body and the things that affect it. Then we shall move on to celestial bodies and souls, and the basis for the salvation narrative described by Noble.

§9.1 The Existence of Souls

Rāzī sketches a range of accounts of the universe of souls, ranking them from the highest celestial beings to plants. He then turns to arguments about the materiality or non-materiality of the human soul.⁸¹⁴ The majority of the Mutakallimūn deny that there are any possible entities that are neither bodies nor properties inhering in bodies.⁸¹⁵ However, he has already argued for the existence of two of the Sabian candidates for that description, time and the void. Here he completes the set.

The Mutakallimūn argue by analogy that non-localised entities cannot exist. God is non-localised. Therefore, if there were non-localised entities they would be like God. Rāzī presents counter-examples: time, the void and 'the form of human'.⁸¹⁶ The last presents a noteworthy reading of the 'Imām Plato' and reflects Rāzī's epistemological position on the accessibility of universals in the world.⁸¹⁷ The form of human must exist in particulars (otherwise it could not be common to material individuals), but it must also be logically prior to size, shape, location etc. and therefore is non-localised.⁸¹⁸

⁸¹⁴ *Maṭālib* VII, 25-31 (preliminary discussion), 35-56 ('the human' means 'this body'), 57-138 ('the human' means the bodiless self or soul, with response to objections).

⁸¹⁵ The universe comprises only atoms, accidents and God.

⁸¹⁶ For Rāzī's consistent critique of Mutakallim argument by analogy see *Nihaya* I, 131-137; *Sharḥ* (Logic), 275-277.

⁸¹⁷ *Maṭālib* VII, 30-31.

⁸¹⁸ He reprises his long-standing argument that 'natural universals' are objects of direct sense-perception. *Maṭālib* VII, 53.

The question ‘what is the human?’ takes centre stage in the next section, where he assesses the long-standing debate (in both the *kalām* and Hellenic traditions) as to whether ‘the human’ is the human body or not.⁸¹⁹ Rāzī rejects both the identification of the self with the physical body, and materialist accounts of the soul, applying his epistemology of foundational perception and awareness. As in the case of heat and cold, we have an immediate and incontrovertible knowledge of our selves. Our soul is the thing best known to us:⁸²⁰

Whenever I say of something that I know it, then this is a judgment about my self that it has knowledge of that thing, and any positive judgment is preceded by the conceptualisation of the terms; so we conclude that whenever I pass judgment on my self that I know some particular thing, then my own knowledge of myself is prior to my knowledge of that fact.

Alternative accounts of the soul ‘explain’ the best known in terms of the less well-known and that is a familiar mistake.

He admits, however, that knowing *that* the soul exists (the clearest of the clear) and what it is like in detail are not the same. That ‘I’ exist may be self-evident, but that ‘I’ am non-localised is not. Drawing evidence from inner states, he deploys the principle of co-extension to establish that the qualities we attribute to the self are not co-extensive with the body or with parts of the body, and therefore they are not the same. We have inner awareness of the continuity of our self from cradle to grave, yet our body changes continually. One common entity receives data from the five senses and judges what is perceived, but this cannot be identified with any single one of them.

⁸¹⁹ Cf. Sextus, *Outlines of Pyrrhonism*, II, §§22-33, 164-172. Note especially Epicurus’ ‘just this sort of physical structure with vitality’ §25, 166.

⁸²⁰ *Maṭālib* VII, 38-39.

We find a clear statement Rāzī's post-Ash'arī account of agency, critical for understanding how inner-worldly choosing agents can be a part of a determinate system.⁸²¹

The human acts by purpose and choice, and what we mean by a voluntary action is that when someone is convinced about something that is simply beneficial, or compellingly so, the conviction causes (*yūjib*) the occurrence of the desire for that action, and when that desire occurs the one who has the capacity (*qudra*) for the action becomes active. However, when they are convinced that a particular action leads to harm...that conviction causes the occurrence of a dislike of that action, and when that dislike occurs, the one who has the capacity for the action is prevented from doing it.

Capacity for a particular action is a continuous state, analogous to the capacity of fire to heat, rather than an *ad hoc* atomic property governing a particular atomic act. In the right circumstances, when it is combined with motivation (a combination of cognition and desire) the action must follow.⁸²² Since knower, willer and agent must be one, the three cannot be identified either with different parts of the body or with the body as a whole.

His final argument considers the problem of the resurrection body.⁸²³ If 'this human' is identical with 'this body' then when this body ceases to exist 'this human' ceases to exist as well. The atoms of the body may be subsequently reconstituted, but the human that was the combination of those original accidents and these original atoms is gone and cannot be restored.⁸²⁴ If resurrection is not possible, then the creation of humans is pointless, because existence has no benefit for them. Rāzī dwells on the fragility of human

⁸²¹ See Shihadeh 2006: 17-19. *Maṭālib* VII, 115.

⁸²² 'Since God creates power and motivation, the actions are really the acts of the humans and they are really the creations of God'. Shihadeh 2006: 41.

⁸²³ *Maṭālib* VII, 123ff.

⁸²⁴ Some of the oldest discussions derive from the Stoic problem of whether individuals, identifiably the same across different cycles of the universe were numerically the same or merely formally the same. See Long and Sedley, *The Hellenistic Philosophers*, 52 E-G, 308-309.

happiness and the miseries of this world. The sole hope for humans is in the consolations of the world to come. If these are unattainable then existence is futile.⁸²⁵

Finally, he challenges those who have ‘begun to put out the calumny that the doctrine that the soul is not a body is a doctrine contrary to the book and to the tradition.’⁸²⁶ He provides Qur’ānic text and commentary, and refers to practices like visiting and praying for the dead, and incubation at the graves of dead saints. He includes a story of the soul of a dead man hovering over the coffin warning against amassing riches. Here we see a characteristic of his approach in the *Maṭālib*, explicitly highlighting convergence and compatibility between reason and revelation.

§9.1.1 The Power of Souls

There is an important question about how particular souls relate to particular bodies. Rāzī here refers to a ‘connection’ (*‘alāqa*), which hints at Ibn Sīnā’s special connection between a quality of soul and the suitably predisposed body.⁸²⁷ In the *Sharḥ*, however, we find Ibn Sīnā’s scientific account of the mechanisms linking mind to physical action. That which arises conceptually in intellect or imagination is passed from core to extremities by means of the physical ‘spirit’ – an ancient precursor of neural impulses.⁸²⁸ The relationship between soul and body is one of master and servant.

Rāzī’s commentary on this passage divides action-by-choice into four stages. First comes the belief or experience of something agreeable or harmful, from this arises a desire (that attracts to benefit) or anger (that wards off harm). Following on from this there comes about a unanimous consent (*ijmā‘*) and ‘an assured purpose without reluctance or

⁸²⁵ Cf the *Risāla dhamm al-ladhdhāt*, text and analysis in Shihadeh 2006: 155-266.

⁸²⁶ *Maṭālib* VII, 129ff. Presumably including his local Karrāmiyya adversaries.

⁸²⁷ *Maṭālib* VII, 7.

⁸²⁸ *Sharḥ* (Physics) 318ff. Compare Nemesius, *On the Nature of the Human*, (on touch), §§189-195, 63-65.

hesitation' (*'azm muta'akkad*). There then follows on from this a movement by the powers spread through the muscles in these limbs, and by this means the limbs move.

The immediate source of movement (*muḥarrrik*) is the muscles, next to it the agreement and the purpose, next to that the desire (*shahwa*) or anger (*ghaḍab*), and next to that the concept or the image or the imagined belief.

He goes on to point out that there are alternative accounts. Some are purely materialist, some leave out the conceptual aspect, or compress the psychological processes into a single 'motivation' (*dā'ir*) which is the decisive factor (*murajjih*) in moving the agent to act. Rāzī himself will occasionally opt for the compressed formulation, though he also acknowledges the separate cognitive moment in the process.⁸²⁹ However articulated, there is one necessitating process that begins in the immaterial soul and ends with the movement of the material body.

In the *Maṭālib*, Rāzī considers the question why a soul should be restricted to one body and the problems this raises for his account.⁸³⁰ If souls in principle have power over matter, then any soul should have power over any matter. The person I'm looking at could be someone else, because the souls have swapped. If the soul is not localised, then it doesn't move by contact. But if it can move bodies without contact then it can move any body. Since this is not so, it must move by contact and be localised. Rāzī reaffirms that souls move bodies without contact however, he claims, they have a distinctive desire for one particular body:⁸³¹

The soul as it were yearns for this living body (*badan*), it is just that this powerful yearning requires that it be connected rather to this living body and that it should

⁸²⁹ Shihadeh 2006: 15–16, 19. See for instance *Maṭālib* VII, 115. *Maṭālib* VII, 366ff.

⁸³⁰ *Maṭālib* VII, 43ff, particularly 46, 48–49, 54–56.

⁸³¹ *Maṭālib* VII, 55.

preferentially have control over this body.

This principle of a specific relation between a particular soul and a particular body will apply to stars too. However, the wider question remains of interest. Rāzī will explore how celestial souls can have effects on terrestrial bodies, and how terrestrial souls who engage with them can acquire the power to move other bodies.⁸³²

§9.1.2 Celestial Souls and the Transmission of Power

In the early part of Book VII of the *Maṭālib*, Rāzī contrasts the Ash‘arī universe with its single effector (*mu’aththir*), with the near universal belief that there are multiple agents in the world. He emphasises again that philosophical and scriptural arguments converge to support the common position.⁸³³ The ‘angels’ of scripture mirror the ‘souls’ of *falsafa*.⁸³⁴ If immaterial souls exist, then they can mediate between the necessary being and the material world, both undergoing effects and having an effect on other beings. There is a parallel between the hierarchies of angels, down to the angels that govern different regions of the earth, and the philosophical vision of living stars and spheres whose influence filters from the outermost sphere to the sublunary world.⁸³⁵

And since each of these categories [sc. of celestial beings] is something that is reasonably possible (*iḥtimālī*) and there exists no proof to refute it, and men of inspiration and revelation speak of their existence, we must acknowledge them.⁸³⁶

⁸³² A challenger to the authenticity of miracles presents the possibility that special human souls might have power to work miracles. *Maṭālib* VIII, 42. For a description of talismanic connections see *Maṭālib* VIII, 161ff.

⁸³³ *Maṭālib* VII, 13–21.

⁸³⁴ A similar convergence is found in Ghazālī, *Incoherence* 17, §5, 167; *Maqāsid* V, 372; Rāzī’s universe favours intelligent souls over Avicennan intellects.

⁸³⁵ He has a first run at these questions at *Maṭālib* I, 51ff; 193–197.

⁸³⁶ *Maṭālib* VII, 20–21.

A much later section will consider specifically both the Ash‘arī doctrine that the circular celestial motion is due directly to God and naturalist accounts that take both God and animate stars out of the equation. Against both of these he sets demonstrative (*burhānī*) and persuasive (*iqnā‘ī*) ‘but not worthless’ experiential arguments drawn from the Platonic and Peripatetic traditions.⁸³⁷ Typically, he does not disprove the Ash‘arī account, but simply shows that arguments an Ash‘arī might use against the peripatetic claims do not work.

In the early part of his exposition, he also offers a brief account of how effects are transmitted from the higher realm to the lower realm, from the more noble realm of fire to the baser realm of earth and water. The epicycles of the planets have their centre in a middle point of the band-width of their own sphere. At their apogee they are at the outer rim of their spheres and able to make contact with the sphere above and receive an effect from on high. At their perigee they are at the lower rim and able to transmit that effect to the sphere below. Thus, power is transmitted from on high downwards:⁸³⁸

The first of these states is visible with Saturn, when it touches the sphere of the stars at a single point, and the last is where the moon touches the sphere of aether at a single point. So it is established that these seven spheres are like the seven causes (*asbāb*) between the throne and the chair and the world of elements.

The spheres themselves are the bodies and the stars the hearts of the celestial souls that inhabit them.

The detail Rāzī goes into is intense, so we shall have to content ourselves with some of the highlights. We begin with his challenge to the Peripatetic claim that the non-

⁸³⁷ *Maṭālib* VII 336–347.

⁸³⁸ *Maṭālib* VII, 22.

material mortal souls must be produced by an intellect.⁸³⁹ Peripatetics argue that mortal souls must be produced by something non-material. Celestial souls, however, only operate through physical instruments. Therefore, they cannot originate other souls. God cannot be the source because ‘the One can only generate one’. The only other non-material candidates are intellects. Hence the importance of the agent intellect.

Rāzī’s riposte is striking. He refers to earlier demonstrations that the maxim ‘the One can only generate the one’ is ‘feeble rubbish’. But instead of drawing the Ash‘arī-friendly conclusion of the *Mabāḥith*, that there is no need for an agent intellect at all, Rāzī leaps in the opposite direction:⁸⁴⁰

It is clear that it is not impossible for the spirits that govern the celestial bodies and the astral bodies to be the ones that bring about the existence of these rational souls.

This allows him to return to a theme which he introduced in Book I. Human spirits differ, and this is due to their different creator spirits. In Book I, he had elaborated a mining metaphor for the search for the perfect human being.⁸⁴¹ Human souls differ in their *māhiyya* like metals of different value. In that context he is explaining the uneven results from spiritual exercises and the search for perfection. In Book VII, he expands. Souls are a genus, and individual souls members of different species, whose characteristics are determined by the star that brought them into being. The relation between the astral archetype and the souls it engenders is one of parent to child, with all the ties of affection and interest that go with parental concern. Some archetypes produce noble and virtuous

⁸³⁹ *Maṭālib* VII, 263ff.

⁸⁴⁰ *Maṭālib* VII, 266. For the discussion whether human souls are of one or more species, see Abū Barakāt al-Baghdādī, *Mu‘tabar* (Physics), 379-388. Cf Nemesius, *On the Nature of the Human*, §§115-117, 34-35, who refers to the Platonic tradition. Plotinus suggests each soul chooses a guardian spirit before birth, with which it has an affinity through life, *Enneads*, III, 4, 142-161.

⁸⁴¹ *Maṭālib* I, 55-57.

souls, some, vile and base ones. Members of the same species have an affinity for one another.⁸⁴² He quotes a saying of the prophet that humans are minerals like gold and silver, and plants his flag: ‘and this teaching is the one we choose’.

He goes on to name planets and stars. Some souls may be the effects of the sphere of Saturn, some of Jupiter.⁸⁴³ Other groups may be an effect (*athar*) of Sirius or one of the fixed stars. The talismanists speak of the fatherly concern of the different celestial agents for their products, and of being directed by their personal archetype. Rāzī is careful to state that this only demonstrates ‘simply reasonable possibility’ (*mujarrad al-iḥtimāl*) . If scientists come across powerful empirical reasons justifying that possibility, then ‘conviction is strengthened’, but if not, then it remains in the realm of the possibly true.

Later on, Rāzī will indeed suggest that there is reliable evidence for the claims of astrology, and will elaborate on the scientific method for acquiring astrological knowledge.⁸⁴⁴ At this point, however, he limits himself to noting that this argument also shows ‘that the cause of the coming about of knowledge and habits in the substances of mortal souls must be something from the celestial intellects or the celestial souls.’ So now we have in place all the celestial links between those contents of the human self that determine human action and the ultimate source of existence.

§9.1.3 Bad Stars and the Quest for celestial Perfection

There is, however, a dissonance. Rāzī is obviously enthusiastic about this account of human types and astral origins. But it implies that if there are base souls then there have to be base astral archetypes as well. However, Rāzī is also committed to the view that the celestial beings are better, more noble than their earthly counterparts, and seek the higher

⁸⁴² *Maṭālib* VII, 142-143.

⁸⁴³ *Maṭālib* VII, 266-267.

⁸⁴⁴ *Maṭālib* VIII, 153-185.

things. Indeed, he refines Ibn Sīnā's account of what motivates the circular motion of the spheres.⁸⁴⁵ Ibn Sīnā suggests they desire to achieve the bodily perfection of bringing each point on their arc from potential into actuality.⁸⁴⁶ Rāzī judges this a very implausible activity for superior celestial intelligences and proposes three, more intellectually stimulating alternatives.

The motions of the stars may be acts of worship of and obedience to the creator. They may be moving to bring order and benefit to the sublunary realm, using the cosmic waterwheels of the epicycles. Or as Themistius suggests, they may be moving in order to acquire ever higher knowledge and happiness from the intellectual realm beyond the visible.⁸⁴⁷ Rāzī affirms the second as a 'doctrine that a wise man would teach'.⁸⁴⁸ Nevertheless, for the celestial spheres to be working for the benefit of the lower world would demean what is most noble. So he favours the argument that the spheres move in order to imitate the more perfect intellects (or God) from which they originate. The celestial soul is:⁸⁴⁹

Attempting to become like that intellect in mastering true knowledge and holy understanding... [like a student and their master in] a movement of longing and desire to acquire that knowledge that makes them alike.

This does not exclude the wise doctrine. Any movements of the celestial spheres will achieve their growth in knowledge and perfection, but only some will also benefit the lower world. The spheres may thus graciously choose just those motions which will bring benefit without compromising their own higher purpose. Indeed, they may in part fulfil it

⁸⁴⁵ *Maṭālib* VII, 357-376.

⁸⁴⁶ *Maṭālib* VII, 360.

⁸⁴⁷ *Maṭālib* VII, 361-364.

⁸⁴⁸ *Maṭālib* VII, 364.

⁸⁴⁹ *Maṭālib* VII, 368, 375.

as they strive to imitate more closely God, who is a principle of the coming to be of order and goodness and mercy.⁸⁵⁰

This positive, virtuous, picture of a Dante-esque celestial realm lends itself to a narrative of the ascent of the human soul and its purification which Rāzī clearly finds attractive. In Book I of the *Maṭālib*, he describes an ascent through the spheres to higher things as a process of purification from the earthly.⁸⁵¹ This does not easily lend itself to a universe where different stars can be the archetypes for base human souls, and even favour and assist their base behaviour in the way that talismanic practices allow.

A very different aspect of perfection appears when he considers the benefits of prayer in talismanic contexts. Power now jostles with virtue as a sign of spiritual progress:⁸⁵²

Then when the soul begins to purify itself of corporeal connections and throws itself into petition and supplication, these souls are drawn towards these celestial spirits that are their principle and the same metal, and their source, and by means of this attraction and connection, there comes upon the substance of this mortal soul a potential and a capacity and an authority over the matter of the lower world, and then there occur wonderful effects and astounding states.

In Book VIII, he explores the science of talismanic astrology. There he suggests the practitioner needs to be pure and knowledgeable about virtues and does need to refrain from using talismanic power for harm.⁸⁵³ Nevertheless, it is clear that using acquired power over planetary spirits for malevolent ends is an option. Elsewhere he lists the effects of talismans in bringing about enmity and sickness.⁸⁵⁴ Perfection as power also appears in

⁸⁵⁰ *Maṭālib* VII, 373

⁸⁵¹ *Maṭālib* I, 51 – 52.

⁸⁵² *Maṭālib* VII, 272.

⁸⁵³ *Maṭālib* VIII, 161–166. Conditions include not just virtue and humility, but personal hygiene.

⁸⁵⁴ *Maṭālib* VIII, 180–182.

astrological accounts for the movements of stars. Stars co-operate in friendship or conflict out of enmity and their conjunctions and ascendants determine their influence in the world.⁸⁵⁵

Noble has analysed the ascent rituals described in the *Sirr al-Maktūm*, that enable a suitably disposed initiate to establish a ‘noetic’ connection with a sequence of planetary powers, in order to gain powers of their own.⁸⁵⁶ Commenting on Rāzī’s exordium, Noble notes Rāzī’s, ‘explicit and robust’ disavowal of anything that seems contrary to the faith, even as he presents his investigation as a part of the soul-transforming search for wisdom and light.⁸⁵⁷ Both the rituals themselves and what they lead to offer a very different narrative of the ascent of the soul from the Platonic one.⁸⁵⁸ So how do we make sense of Rāzī’s ambiguous presentation in the *Maṭālib*?

Firstly, Rāzī is clearly impressed by the antiquity and universality of astronomy. In a passage justifying its claims, he says:⁸⁵⁹

From the most ancient times humans have clung to knowledge of the stars and been reliant on it. For you note that every science has a beginning and a person who was the first person to delve into it, apart from the science of divinity and the science of the stars.

If Divinity and Astronomy are equally ancient products of human enquiry, then perhaps the substantial convergence of different traditions is more important than the inevitable divergences of detail. He does acknowledge that ‘we have presented [these

⁸⁵⁵ *Maṭālib* VII, 362–363.

⁸⁵⁶ Noble 2021: 39–44.

⁸⁵⁷ Noble 2021: 49–50. Venus and Mars require particularly unorthodox acts of sex and violence.

⁸⁵⁸ For an account of Rāzī’s theory of the perfection of the soul, see Shihadeh 2006: 109–129. Shihadeh argues that though Rāzī’s normative ethics is fundamentally teleological, for the later Rāzī ‘moral and theoretical perfection...become viable human ends’.

⁸⁵⁹ *Maṭālib* VIII, 152.

enquiries] in terms of opinion and assumption, not in terms of assurance and demonstration, and how could this be surprising?⁸⁶⁰ Rational argument is limited in what it can decisively demonstrate, but we need to know the range of possibilities that reason allows.

Secondly in the course of answering question about the value of miracles, he cuts the Gordian knot of the problem of evil:⁸⁶¹

With regard to the third principle: this is that you realise that for the mind to make judgments of goodness or evil is futile and pointless, and to be ignored in the case of the actions of God on high and his judgments.

This principle could equally be applied to the base effects of heavenly intermediaries and the behaviour of medieval warlords. The maxim itself springs from a classical Ash‘arī theological commitment to the idea that we cannot attribute motivation or purpose to God, though the justifications are Rāzī’s own.⁸⁶² It is also of a piece with Rāzī’s bleak views about human character and society that Shihadeh traces in his later writings.

Shihadeh relates an observation of Rāzī’s that he had seen a ruler take genuine delight in acts of violent cruelty.⁸⁶³ He points to Rāzī’s emphasis on the pain present in this world in the late *Risālat Dhamm al-Ladhīdh*. If it were not for the afterlife, non-existence would be preferable.⁸⁶⁴ In a pre-echo of Hobbes (and Sartre), human perfection is once again associated with control, with the consequence that humans are inevitably engaged in a war of all against all. Shihadeh quotes:⁸⁶⁵

⁸⁶⁰ *Maṭālib* VII, 376.

⁸⁶¹ *Maṭālib* VIII, 99.

⁸⁶² See Shihadeh 2006: 96–98 for the impossibility of God’s acting for the sake of human benefit. The principle is shared by Plotinus and Ibn Sīnā.

⁸⁶³ Shihadeh 2006: 57 (quoting *Maṭālib* III, 350 – 351).

⁸⁶⁴ Shihadeh 2006: 158, 167.

⁸⁶⁵ Shihadeh 2006: 170. Rāzī did have to negotiate life in a war zone.

Therefore, the natural disposition (*ṭabʿ*)⁸⁶⁶ of each person drives him to be the ruler over the other and in control over him... Therefore, the seeker of the attainment of rule for a particular man is that particular man alone, whereas all others seek to undermine that rule and to obliterate it.

There is a bleak logic in projecting the same motivational mechanisms back into the celestial realm, given that the events in that realm are being used to explain the events in this terrestrial war-zone. A grim picture of communal life and the manipulation of celestial agents for the sake of earthly power, sits depressingly easily alongside an individualist spirituality of purification and an escape into the realm of light.

But there is also the possibility that Rāzī is doing for Sabian science much the same as he is doing for Peripatetic science, sifting it for convergence towards universal truth in harmony with revelation. Noble observes the analogies between the ideals of purification and graduated ascent of the Sabian rituals and Rāzī's commentary in the *Tafsīr* on his 'mystical hermeneutic' of the Islamic ritual prayer, in which the gnostic (*ʿārif*) re-enacts the prophet's celestial ascent.⁸⁶⁷ Studying the Sabian tradition can enrich the understanding and praxis of this search for mystical purity and perfection:

The Sabian talismanic science discloses the intricate web of congeneric connections that link the corporeal to the spiritual world... it assists the aspirant in constructing the epistemological ladder by which he might traverse the boundary between the corporeal and spiritual worlds. Stripped bare of its astrolatry, Sabianism has now been restored to the purity of its original monotheism...

Rāzī may be rescuing the best both of Ibn Sīnā and of the Sabians.

⁸⁶⁶ *ṭabʿ* is the word used for the disposition of the stars to move voluntarily (in contrast to the involuntary nature *ṭabīʿa* of the elements).

⁸⁶⁷ Noble 2021: 259-260.

§9.2 Determinism, mortal Souls and the Science of Stars.

We now have a picture of the secondary mechanisms through which a universe of natures and intelligent agents can nevertheless execute the will of a freely choosing creator. Animate beings (terrestrial or celestial) with control over the matter of the universe pursue their goals driven by chains of motivation that ultimately go back to God, who has determined how all things will turn out.

In the next two sections we will look more closely at Rāzī's account of the determinate human will, and of how we acquire knowledge of the cosmology that opens a path to salvation.

§9.2.1 Determinism and Human Choice

Rāzī discusses determinism directly in Book VIII of the *Maṭālib* in relation to prophecy and in Book IX in relation to human agency. Some of the arguments reprise the Mu'tazilī-Ash'arī debate around the question of human capacity to act and the nature of such *qudra*. Others relate to divine foreknowledge.

In the course of the first discussion, he once more dismisses the idea that human choice can come about without a weighting factor (*murajjih*). This would imply that things can come about by chance, but such things are every bit as inescapable as things determined by a necessitator.⁸⁶⁸ No version of the universe can include unconstrained human action. Human action springs from a combination of capacity as a continuous state combined with a motivation. When both of these obtain, the action is necessary.⁸⁶⁹

⁸⁶⁸ *Maṭālib* VIII, 12.

⁸⁶⁹ *Maṭālib* VIII, 13ff.

In Book IX, Rāzī reprises an objection on the basis of his own foundational epistemological criterion.⁸⁷⁰ Our inner awareness tells us the difference between movements that are in our control and those that are not. How, then can our actions be constrained? Rāzī's acknowledges the *experience* of doing what we want, but argues that that experience is not itself the product of a want, otherwise there would be a regress:⁸⁷¹

We do find decisively and certainly from within ourselves that a wish to act can occur in our hearts, but not because of any further wish prior to it...

The experience of spontaneous choice according to our wishes is real, but the cause of that experience is not itself a spontaneous choice. Once more, he spells out the causal structure with our 'sure desire' being the determining factor in our action. The result could equally be Avicennan or classical Ash'arī minus the occasionalism:

And if we reflect on these things, we realise that the wish does not occur in us through ourselves, and the occurrence of the wish to act does not make up the action through us, rather these things are constructed one on another, and the principle stems from the creation of God, so everything comes from God... the human is compelled (*muḏṭār*) in the form (*ṣūra*) of choosing.

Another piece of the jigsaw falls in place in the discussion of divine foreknowledge and necessity.⁸⁷² The actions of the servants can only come about by the power of God, 'either immediately or through some medium'.⁸⁷³ The subsequent arguments demonstrate that God (and only God) has power (*qudra*) over a person's actions.⁸⁷⁴ The apparent contradiction is resolved by the earlier 'through some medium' with which the argument

⁸⁷⁰ *Maṭālib* IX, 23ff.

⁸⁷¹ *Maṭālib* IX, 25.

⁸⁷² *Maṭālib* IX, 63ff.

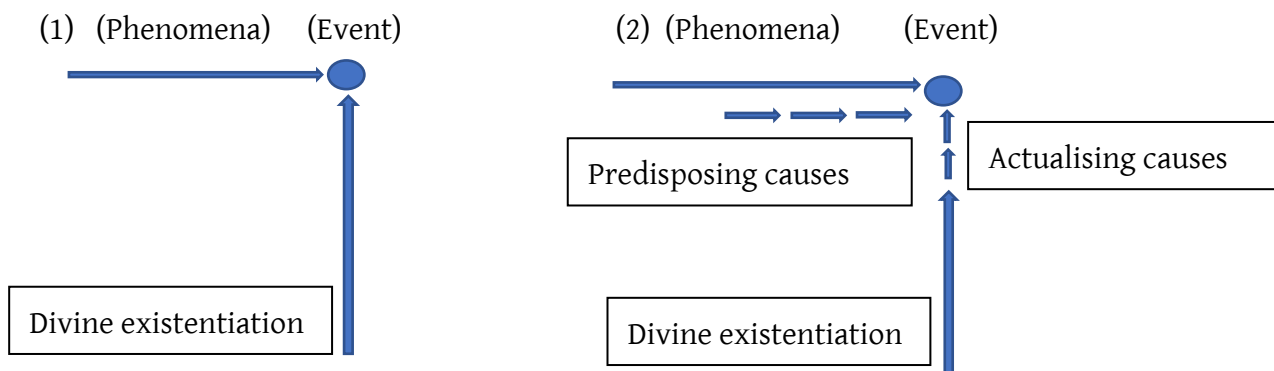
⁸⁷³ *Maṭālib* IX, 64.

⁸⁷⁴ *Maṭālib*, IX, 75-99.

sequence is prefaced. The physical capacity of humans to bring about actions in particular circumstances derives from a set of circumstances ultimately controlled by God. A real capacity possessed by the one true agent in the universe, sits alongside a derivative, God-given instrumental capacity actualised in a human choice, itself predetermined.

One point in particular has a familiar ring. For God to empower the servant to perform an action, God must have power over that action.⁸⁷⁵ This leads us back to the parallel accounts of the same event of al-Ash‘arī and ʿIṣrāq highlighted in chapter two. The act of creation for God is an act of acquisition for the human.

The point, we can recall, is that anyone who believes in some form of continuous creation in the present moment holds two parallel sets of propositions to be true of the same event. One set of propositions concerns humanly observable phenomena (the fire is burning, the water is becoming hot, the human’s finger moves, the arrow fires). The other concerns the existentiating action of God. Viewed from a distance any event in the world matches the first diagram below, a picture that is equally compatible with the worlds of al-Ash‘arī, Ibn Sīnā, Rāzī, Augustine, Malebranche or Aquinas:



The difference, of course, only becomes visible in the close up (2), at which point non-occasionalists insert subordinate causal arrows and add a third set of parallel propositions to the first two in their account of the universe. For Aquinas, and to a lesser extent

⁸⁷⁵ *Maṭālib*, IX, 80.

Augustine, who assert human freedom and an all-powerful divine will there arises the anomaly of an all-powerful God who existentiates causes (human and angelic wills) that can independently thwart God's purposes. For Rāzī, however, as for Ibn Sīnā, this problem does not arise. All things are necessitated by God, whether immediately or through an instrument.

This suggests a way of formalising the congruence between the Ash'arī and the scientific world. For Ash'arīs there are only two significant sets of predicates in the universe. G-predicates enable us to account for events of the universe entirely in terms of the *qudra* of God. P predicates describe the regular patterns of phenomena in the world and include the acceptable way of talking about the phenomena of our actions as 'acquired'. The two discourses can run in parallel without interfering with each other.⁸⁷⁶ We will sometimes choose G talk and sometimes P talk and both will be correct. Only G-talk however explains why things happen.

In an Avicennan universe of mediated existentiatio, however, we add a layer of world predicates W, which include the subordinate agency of the intellects, the cycles of material change and the chemical constituents of humans as an extra layer of explanation for P predicates. 'The human's hand waves' (P) refers to the same event as 'the complex psychophysical causal nexus N necessitates this wave of the hand' (W). So too does 'God existentiates N' (G). Both (W) and (G) descriptions are needed to give a full account of (P).

Though he may sometimes allow space for the compressed Ash'arī account, Rāzī himself presents (W) type accounts unproblematically, whether arguing generally for a deterministic account of human behaviour or more specifically for the ultimately divine

⁸⁷⁶ This is by very crude analogy with P.F Strawsons division of 1st person and 3rd person predicates into 'M' predicates and 'P' predicates, in Strawson 1964: 104.

origin of all our beliefs.⁸⁷⁷ He offers a comprehensive catalogue of the factors determining spontaneous human action:⁸⁷⁸ different species of soul, with different inborn characteristics; different moods, attitudes and beliefs; different states of the humours and the shape of the cranium; doctrines implanted from youth by trusted teachers; beliefs that enable individuals to be successful; reasoning and inference (with all the traps open to the unwary reasoner). Add the primary animal motivation of the pursuit of pleasure and the avoidance of pain, and sound limbs, and you have the conditions for voluntary action: capacity and motivation.⁸⁷⁹ He offers an example (which feels quite personal) listing eight such factors that would determine an uneasy ruler to an act of violence.

What applies to action, applies equally to theoretical reasoning.⁸⁸⁰ We cannot acquire concepts or validate judgments beyond what is entailed by our self-evident cognitions. Those self-evident cognitions themselves are ineluctable (*ḍarūrī*) and are therefore nothing to do with our choice or capacity. When such cognitions are combined in a chain of reflective reasoning and the reasoning is valid, the conclusion is necessary – the reasoner has no choice – and where the reasoning is invalid the reasoner has no power to acquire knowledge. In the end, whether our beliefs turn out to be knowledge or misunderstanding, ‘everything is from God on high.’

§9.2.2 Empirical Reasoning and the Science of Stars

What remains is to consider how Rāzī presents, and argues for, the astral intermediaries in the *Maṭālib* who complete the animate interactions in the universe under the overall direction of the creator. He gave a general account of the transmission of power from above to below at the beginning of Book VII and presented the notion of a

⁸⁷⁷ *Maṭālib*, IX, 33–46, 101–110.

⁸⁷⁸ *Maṭālib*, IX, 36.

⁸⁷⁹ *Maṭālib*, IX, 37–40.

⁸⁸⁰ *Maṭālib* IX, 101–110.

special relationship between soul-type and star. He discusses the mechanisms of astrological magic in Book VIII in the context of prophecy.⁸⁸¹ He begins with a peripatetic proof that the stars have causal power in the world. The states of the world (the seasons) are bound up with the states of the sun and its position in the sky at different times of the year. This is a 'strong inductive proof' that the states of this world depend on the movement of the stars.

Philosophers, however, contest some astrological principles. They do not accept, for instance, that there are significant differences between the stars. They argue accordingly that these cannot be capable of the different effects the astrologers attribute to them. There are problems with astronomical measurement. Ibn al-Haytham lists thirty things that can go wrong, taking into account not only the distances and velocities of the remote objects being studied, but the many stars that are either hidden by distance or are indistinguishable from the stars that surround them. Perhaps fixed stars are stronger than planets, but:⁸⁸²

The astrologers are agreed that they do not know more than a little about their natures, and since this is how things are, the pressure and the difficulty in this science because of our ignorance is clear.

There are, nevertheless, cautious grounds for optimism:⁸⁸³

The intelligent (*ʿuqalāʿu*) are agreed that what is not entirely perceived is not entirely to be abandoned, for even though achieving this knowledge is difficult for these reasons, nevertheless, careful investigation leads to acquiring great benefit from it. And since this is so, we must spend time acquiring it, and concerning ourselves with its essence, for even a little of it is a lot in respect of the beneficial

⁸⁸¹ *Maṭālib* VIII, 149-196.

⁸⁸² *Maṭālib* VIII, 157.

⁸⁸³ *Maṭālib* VIII, 158.

states for mortals, and God makes known.

He names three routes to such knowledge, analogy, empirical reasoning, and inspiration. Rāzī is again consistent in his disparagement of analogy. To assume that Mars is hot and dry because it has the colour of fire is ‘very feeble and cannot be relied on’.⁸⁸⁴ However empirical reasoning (*tajriba*) can support that claim (and similar ones) and put astrology on a scientific basis:⁸⁸⁵

When one of the different sorts of event takes place in the world, then if the empirical reasoner knows how the celestial positions were and his knowledge is of a precisely detailed and perfect kind, then when something similar to that event takes place a second time and a third time, and a fourth time and a fifth time, and he realises that each one of the celestial states is like the original state, then in that case there comes into his heart a strong belief that that particular celestial alignment necessitates a particular kind of event to take place in the world.

Now ‘empirical reasoning’ in the *Sharḥ* meant induction taken with an *a priori* principle, for instance, that things that always follow the same sequence are not happening by chance. Here empirical reasoning yields a ‘strong belief’. This again is consistent with the *Sharḥ*, which only ascribes certainty to *restricted* universals. Still, this strong belief is about explanatory, causal correlations. We make an inference from a certain kind of event in the world to a knowledge of the ‘nature’ of the celestial alignments. This in turn allows us to make reverse inferences from celestial alignments to terrestrial events. An explanatory ‘that’ syllogism becomes a predictive ‘why’ syllogism, in which cause *in re* and conclusion are aligned.

⁸⁸⁴ Again, *Nihāya* I, 133-136.

⁸⁸⁵ *Maṭālib* VIII, 159-160.

Rāzī describes the third category briefly. Tenkelusha the Babylonian recounts how one who perfected the purification of his soul and the discipline of his mind had revealed to him ‘celestial forms that cannot be described’. Rāzī incidentally notes the importance of tradition in all religions and belief-systems. The implication is that the doctrines of the Indic, Persian and Mesopotamian astrological traditions are worth taking seriously alongside those of the Hellenic tradition.

With that he introduces the discipline that reverses the causal process and gives power to the practitioner to influence the stars.⁸⁸⁶ Candidates must be fitted for this science by nature. They must be in an advanced state of perfection, with a complete commitment, undeterred by reverses, with a readiness to work under cover of darkness and in secrecy.⁸⁸⁷ The powers granted should only be deployed for some good end. They must be a master of divinity, understanding of the structure of the universe and ethics. Their soul must be alive (which seems to mean an especial affinity for the spirits of the dead), they must be capable of solitude and their ‘body must be far from smelling of dung’.

Connections are established by ‘empirical reasoning’ between the different agents in the celestial realm and the earthly elements, plants and animals to which they have affinities. Rāzī records how he experimentally tested standard claims about a particular group of stars, though ‘I did not find that they had any effect except when they were in the degree of the ascendant and in the middle of the sky.’⁸⁸⁸ He refers to the ancient narratives of Ṭumṭum the Indian, who calls on the lord of each degree by a separate name, with a different incense, and asks for a different power.⁸⁸⁹ He mentions Babylonian narratives too,

⁸⁸⁶ *Maṭālib* VIII, 161-166.

⁸⁸⁷ We may recognise Chaucer’s alchemist.

⁸⁸⁸ *Maṭālib* VIII, 173.

⁸⁸⁹ Noble discusses Ṭumṭum’s more extended appearance in the *Sirr* (Noble 2021: 35). Yogic meditative practice, combining asceticism and devotion with an intense focus on the desired goal shares the ambivalence of pursuing perfection as ‘power’ found in Rāzī. Compare Biruni’s Arabic translation of Patañjali: the point of

all the while insisting on the importance of empirical reasoning for distinguishing true accounts from false.⁸⁹⁰

He explores various rituals of sympathetic magic, linking the active powers of the stars with the passive powers of the elements. These include making dolls of your enemy or throwing iron with a curse on it into the fire. As he explains the power of spells, he affirms the cosmos of the astrologers, with its mutual interaction between humans and cosmic agents over the more impersonal cosmos of the *falāsifa*:⁸⁹¹

The truth as I see it is that the closer a person gets to attaining the attributes of a particular star, and the more completely they know its specific actions, then their power to enumerate those qualities is more complete and perfect and their soul's capacity to recall these properties is more perfect, and the more perfect this receptivity is, the more perfect is the attraction of their soul to that starry spirit, so their power to bring about that effect is stronger.

Once again, we can ask how all this is supposed to align with scriptural ideals of perfection and obedience. A clue may lie in the context, the discussion of prophecy and prophetic signs. Rāzī is everywhere looking for convergences between scriptural and more universal, philosophical accounts of the world. The question arises, as Noble suggests, which group of wisdom traditions provides the best fit for the special status of scriptural prophets, and for the unique status of Mohammed?⁸⁹² Avicennan souls are fundamentally all the same, so theoretically any one would be suitable for a prophet. Sabian souls however, are different in kind, and only some few will have the special nature to acquire the knowledge and the power to work miracles that go with prophecy. Thus, it is a Sabian

yogic practices is to achieve freedom from the things of the world and a sort of gnostic theosis. Birūnī, *The Yoga Sūtras of Patañjali*: 13-23.

⁸⁹⁰ *Maṭālib* VIII, 176, 179.

⁸⁹¹ *Maṭālib* VIII, 183.

⁸⁹² Noble 2021: 260-262.

universe and its associated science, refined with the tools of *falsafa*, that provides the best fit.

§9.3 Conclusion

In the course of the *Maṭālib* Rāzī has presented two parallel accounts of the universe. One is a deterministic universe with just one true agent, who acts out of a mysterious liberty of indifference and causes all things either directly or by some instrumental means. This is the ‘G-narrative’ and clearly fulfils the prime Ash‘arī commitment of affirming free, divine control over all that comes to be. However, this is completely compatible with the second ‘W-narrative’, whose rich subplot of celestial and terrestrial action and interaction, causes and effects, natures and souls, seems at first glance to run counter to the first. This too is a narrative of a universe fully determined by a freely choosing God, even as its participants enjoy a liberty of spontaneity to do what they (and God) happen to want. Indeed, that W-narrative provides the prime evidence, reflected in the Qur’an for the daily ‘miracles’ that are signs that God is wise and freely-choosing.⁸⁹³

Alongside the account of the mechanics of this universe, we have also noted the importance of an emerging ‘universal’ salvation narrative, drawing on more ancient spiritual and astrological traditions and practices, Indic, Persian and Mesopotamian. For all the moral ambiguities about power and control, the claims of astrology and magic fall within the scope of Rāzī’s empirical science. The narrative of a soul’s origin from and return to its celestial archetype seem to offer an enriched understanding of prophecy and the Islamic account of human salvation. We shall return to this last point in the course of the final chapter.

⁸⁹³ *Maṭālib*, I, 233-236; IV, 329-360.

Chapter 10 Conclusion: Secondary Causes and Rāzī's Apologetic

The models of the universe in the *Maṭālib* that have emerged through Chapters 7-9 differ considerably from the universe of the *Mabāḥith*. As we saw in Chapter 3, Rāzī here tweaks a universe with Peripatetic substructures to accommodate the four Ash'arī concerns of God's necessitation, God's knowledge and action on particulars, the origination of the universe and the resurrection of the body. The later work, however, contains a much richer mixture of convergent ideas from different strands of *kalām*, Hellenic philosophy, alchemy, astrology, Indic, Persian and Babylonian traditions. The argument is much more closely integrated with supporting Quranic exegesis (an occasionally explicit reflection of the co-evolution of the *Maṭālib* with the *Tafsīr*). It also acknowledges more clearly the limitations of argument and investigation, though consistently with the epistemology and logic that we explored in Chapters 4-6 in line with our second point of focus.

The answer then, to the main question with which we began seems to be that the mature Rāzī is sympathetic and respectful towards occasionalist Ash'arī positions and often gives them logical space. Nevertheless, he consistently highlights compelling reasons for preferring a with universe with secondary causes that is also completely deterministic. The substructures and cosmology of that universe are very different from that of the Peripatetics, but it is still best analysed in a philosophical language drawn from the late Hellenic tradition.

A number of factors seem to make that move less controversial than the rhetoric of the Ghazālī era would demand. One is the non-accidental congruences between elements of the wider Hellenic and the *kalām* traditions that Rāzī often seems consciously to exploit. We highlighted some of these in Chapters 1 and 2 and have noted them throughout *en passant*. These include crucially the more explicitly phenomenological approach to enquiry common to ancient Epicureans, Sceptics and the medical tradition, which influences Ibn

Sīnā, and is deployed by Rāzī (part of our second focus). They also include the tradition of critical commentary, as a non-dogmatic alternative to scepticism. This creates rational space for the critical appropriation of a body of ideas, rather than their outright rejection. We have seen both Mutakallimūn (like Mas'ūdī) and Peripatetics (including Ibn Sīnā himself) writing in this tradition. Indeed, there is an argument for thinking that a key stage in the process of integrating *kalām* and *falsafa*, is the *Shifā'* itself, whose ever-present existentiating One maps onto al-Ash'arī's momentarily existentiating God, and whose crowning arguments in the *Ilahiyyāt* can be read as a self-conscious (and largely successful) attempt to improve on the rational theology of the *kalām* schools.

The main stumbling blocks for an Ash'arī, then, as Rāzī himself indicates, are those four hard questions: necessitation, knowledge, origination and resurrection (our fourth focus). The argument of the *Mabāḥith* provided a resolution that allowed the critical appropriation of a broadly Avicennan universe. Nevertheless, that resolution clearly did not satisfy everybody, in spite of Rāzī's protestations. The universes of the *Maṭālib*, however, offer a shift of emphasis in the argument for the existence of God and a new range of solutions to the hard questions. The result is that both a self-aware Ash'arī and a self-critical Peripatetic can look into that universe and see themselves reflected.

So, in this concluding chapter, I'll begin with a summary account of Rāzī's model universes in the *Maṭālib*, the understanding of first and second causality they imply (our first and second focuses) and the way they support the apologetic goals of proving the existence of a wise creator God (our third focus). Then we will explore his mature response to the four hard questions (our fourth focus). We will finish with our fifth point of focus, reflecting on the motivations behind Rāzī's rational theology-science and re-evaluating the different proposals of Griffel, Shihadeh, Noble and Ibrahim.

§10.1 Rāzī's Possible Worlds

The physical universe visible to us is an empty, three-dimensional space completely occupied by bodies composed of infinitesimal point atoms. That space may or may not be infinite. There may or may not be a void beyond the visible world and there may or may not be other worlds occupying regions of that void inaccessible to us. Although, as we saw, Rāzī suggests that his atoms will be Democritean (indivisible in fact, but divisible notionally) what he ends up describing is closer both to ancient *kalām* traditions and the Pythagorean/Euclidean option that he also presents.⁸⁹⁴ Infinitesimal atoms occupy infinitesimal points of atomic space.

His choice for atomism is driven by the arguments for the reality of time not as an accident, as in Ibn Sīnā and Aristotle, but as one of the eternal substances, alongside space. 'Everyone is agreed that motion and time and distance are three correlated (*mutaṭābiqa*) things, so if we prove that one of these is composed of atomic parts, the same applies to all of them.'⁸⁹⁵ He progresses from his hybrid Avicennan position in the *Mabāḥith*. Defining time, not in terms of extension, but in terms of the 'now' of perception and action, he identifies a continuous time with minimal parts, along with space and soul as one of three substances that are non-material and exist alongside God. Atomic space and matter are a corollary. His final ontological choices reveal a clear debt to Muḥammad ibn Zakariyya al-Rāzī and the Sabians, identifying two of their five eternal substances (the others being soul, matter and God). He is constructively ambiguous about the eternity (or not) of the atoms.

His theory of matter and extended body allows him to accept with the Peripatetics that all bodies are equivalent in their receptivity to higher properties. As for Ibn Sīnā and as in the *Mabāḥith*, the fact that physical bodies can exist and not exist with their various

⁸⁹⁴ *Maṭālib*, I, 196; IV, 22 (Democritus), IV, 26 (Pythagorean + primary elemental solid structures), IV, 20 and VI, 26; V, 166 (Democritus); VI, 146; VI, 21–22 (the variant *kalām* positions).

⁸⁹⁵ *Maṭālib*, VI, 45 – 46.

properties gives a reason to suppose that there is something that necessitates their existence in this form.

He presents this argument in language that is compatible with both an occasionalist and a non-occasionalist reading, but he makes it clear that the arguments for the existence of a freely-choosing, wise God stand or fall with the reality of a world of stable physical properties and intelligent and animate agents within an absolutely determined nexus of causes and effects. We can question our perception of necessitation, but if we do this, we undermine the foundations of human knowledge and thus the proof of the necessary being. Similarly, we can question the reality or the goodness of the causal processes at work in the world, but if we do, we undermine the proof that that being is wise.

So Rāzī broadly accepts the world as late Hellenic science finds it, even though new ideas and discoveries in astronomy, alchemy and optics are overturning the old certainties of the five-element theory, and exposing its incoherences.

Rāzī's rational souls are fully separable from bodies. They are Platonic souls, rather than Peripatetic ones (restricted by embodied powers). Whether celestial or terrestrial, they act directly on the material world. A physical spirit flowing through the human body translates mental choices into physical movement. The choices themselves are the product of a causal nexus that includes the elemental balance in the bodily humours, alongside knowledge, social context and rational choice.

Whether the elements really transmute into one another, or can just share their properties and whether they are only four is not something that can be established. There is space for physical accounts of the world that include astrology, alchemy and magic. The Plotinian intellects fade from the scene, but the immediate universe still looks Ptolemaic. The Peripatetic language of form and matter, natures and powers, essences and accidents,

genera, differentia and species sits comfortably alongside the single-tier *kalām* language of substrate and inherent or attribute.

There may be an agent intellect in charge of the sublunary world and its transformations (Peripatetic). God may perform those transformations directly (Ash‘arī). Or it may be that multiple cosmic agents create different sorts of soul, each one bound to one of a range of bodily kinds in the lower world wider than the four elements (Sabian). The astral magic of Sabian and other traditions that accompanies this alternative universe is a serious candidate for scientific inquiry, and subject to the same rules of empirical reasoning as any other set of claims about the workings of the world.

However, there are two versions of this modified cosmos. In one, closer in spirit to Ibn Sīnā, all the cosmic agents are noble and their actions are directed to becoming more like the source of their being by acquiring wisdom. In another, they are capable of plotting and conflict, like the moody celestial agents of Babylonian myth. Rāzī is ambiguous in his presentation of these two versions of the celestial character, just as he is ambivalent in his account of the benefits and goodness of the world, wavering between the somewhat Panglossian approach of Ibn Sīnā and a darker awareness of the horrors and misery of life in a war zone.

Humans are less passive in their relation to the stars than in the Avicennan universe. This too has its ambiguities. Every human soul is created by their own star and can learn to build a relationship with their ‘perfect nature’. In a world of virtuous stars, this offers a spirituality of ascent for all humans towards goodness, wisdom and virtue and beneficent miracles. Where stars are ethically complex, it offers a route to power and control for the ruthless and degraded.

In all worlds secondary causality and subordinate agency is pivotal. Rāzī takes pains to show that reason and scripture converge on this point. In Book IV, he draws on his

parallel work on the *Tafsīr*.⁸⁹⁶ A cryptic exchange between Ibrahim and a sceptic shows that the agency of God is compatible with the instrumental agency of the sun.

Ibrahim declares that God is the one who gives life and death. The sceptic replies that *he* can deal life and death as well. Ibrahim replies that God makes the sun come from the east and invites the sceptic to make it come from the west. Rāzī explains this as a claim that it is God who makes the world go round, and who therefore is ultimately responsible for everything that happens in the world. He concludes that bestowing life and death is qualitatively different in the case of God from our case. We can use natural objects to bring life and death into the world, but it is God alone who is actually turning the world and making all these things happen.

This version of the primary-secondary relationship, with its clear echoes of *Metaphysics* Λ and *Physics* Θ points to the sort of triple-layered parallel accounts of secondary causality proposed in the last chapter. The truth of ‘the human wields the knife and the ox dies’ (P) is explained by ‘a set of mechanisms of the world leave the ox dead’ (W) and ‘God kills the ox’ (G) together. This works because Rāzī, as we have seen, preserves two important principles from Ibn Sīnā’s account. Firstly, a cause must be simultaneous with its effect. Secondly, existence must be sustained and is not the enduring after-effect of a punctual ‘coming to be’.

When we factor in Rāzī’s atomistic account of time, space, and change, the universe evolves in a succession of punctual predication events that *looks* surprisingly like that of al-Ash‘arī. The difference is that Rāzī, with Ḍirār, would sanction the description ‘the human performed the act in reality’ (W) alongside ‘God is the agent of her action in reality’ (G), while al-Ash‘arī outlaws the first.⁸⁹⁷

⁸⁹⁶ *Maṭālib* IV, 357-358. The Quranic passage is 2:257.

⁸⁹⁷ See Al-Ash‘arī, *Maqālāt* I, 339.

If it was Ibn Sīnā who first spotted this potential convergence and shifted the Peripatetic narrative towards a more Ash‘arī-friendly sense of the immediacy of divine existentiatio in the world, it is Rāzī who has completed the circle, and in the process shown that you can have God creating everything from moment to moment, without having to abandon the benefits of a reliable, scientific account of the world.

We can now return to our earlier classification frame and compare the Ash‘arī, Avicennan and Rāzian universes more analytically:

God (Origin)	God (Interactive)	Subdeities Celestial Agents	Universe Free/Determined	Universe Causal Arrays
A1	B1	C1	D1	E1
Craftsman shaping pre-existing matter	No direct action on particular entities in time	No direct action on particular entities in time	Materially Deterministic no purpose	Temporal Causal Sequences only (Dominoes)
A 2	B2	C2	D2	E2
Source of being as actualisation	Occasional direct action on particular entities in time	Occasional direct action on particular entities in time	Purposive and Deterministic	Simultaneous, (ontological) causal sequences only (Cogs)
A3	B3	C3	D3	E3
Initial Existentiatio (Origination, Generation)	Continuous direct action on particular entities in time	Continuous direct action on particular entities in time	Materially deterministic with agent freedom	Simultaneous and Temporal causal sequences
A4	B4	C4	D4	E4
Continuous Existentiatio (sustaining)	Timeless interaction with the universe	Timeless interaction with the universe	Purposive Nature with agent freedom	No non-formal causal sequences

Al-Ash‘arī’s universe, we can recall, is A4, B3, D2, E4, though A4 and B3 are numerically identical. Ibn Sīnā’s is A4, B4, C3, D2, E3, setting an ontological boundary between God’s existentionation and the action taking place within the universe. In the *Mabāḥith* Rāzī breaks down that boundary, but though he expresses a theological preference for B3 over B4 (or B3) + C3 – the direct action of God in the evolution of the universe – philosophically he remains neutral. In the *Maṭālib*, however, there is a greater emphasis on the freedom of the chooser to do different things (as we shall discuss below) with a fundamentally mechanical universe. He is also clearer that events that fall under Ibn Sīnā’s C3, D2 E3 are numerically identical with events that fall under A4 and B3. The Ash‘arī disjunction *either B3 or {C3, D2, E3}* is mistaken.

The *Maṭālib* gives more rhetorical weight than the *Mabāḥith* to the evidence for God as ‘free chooser’ from the complex of cosmic characters involved in sublunary events. This makes the universe much less like a piece of clockwork driven by a divine spring, and much more malleable to a divine will which can play *ad hoc* (B2) with the wills and beliefs of the souls that make the material bodies move. As a result, many of the regularities of the universe now look less like dogmatic peripatetic laws and more like Ash‘arī ‘*ādāt*, but without diminishing the reality and necessity of secondary causes.

§10.2 The Hard Questions, Apologetics and Uncertainty.

I suggested earlier that the very structure of the *Mabāḥith* gave its scientific philosophy a theological *telos*. In the *Maṭālib*, where the theological *telos* takes centre stage, it becomes even clearer that doing science and philosophy well matters to Rāzī because bad philosophy-science undermines theology. The extended discussion of time, space and body in Books V and VI flow from the question of the origination of the world in Book IV. That in turn follows on from the discussion of God’s distinctiveness as a substance from all other things in Book II, and the account of God’s positive properties in Book III.

The demonstration that atomic bodies are qualitatively neutral, which emerges in Book IV, is vital both for the classical *kalām* arguments for the existence of God based on *ḥudūth* and *qidam* and for Avicennan arguments based on *mumkin* and *wujūb* presented in Book I. The stability and order of the universe is dependent on natural subordinate agents with stable properties and agents possessed of wills with stable properties. That order is vital to the design argument demonstrating that the necessary being is also one who freely chooses.⁸⁹⁸ The argument presumes both that God existentiates those active properties in the qualitatively neutral bodies or the souls that move them, and that their activity is real.

§10.2.1 The Necessary Necessitator and Action in Particulars

The need for a decisive factor (*murajjih*) to tip possibles into existence is, as in the *Mabāḥith*, foundational to the chain of necessity that leads to the ‘necessarily existent of itself’. Rāzī excludes any notion of probability or random indifference in world events.⁸⁹⁹ He reprises the arguments against Ibn Sīnā’s emanation theory and rejects the Peripatetic principle on which it is based, that the One can only generate one.⁹⁰⁰ He revisits and expands on arguments that God can have knowledge of and act on particulars.⁹⁰¹ The freely choosing agent has room for action.

In Book IX Rāzī contrasts human wills with God’s eternal will. That eternal will makes God the only being in the universe with a genuine liberty of indifference. It is not determined, as human wills are, by motivations, because it has no need of determination:⁹⁰²

⁸⁹⁸ ‘And realise that by this demonstration that we have presented, it is clear that the arrangement of the higher and lower world leads us to the existence of God who has power over that arrangement’, *Maṭālib* I, 186, 233-236, the Quran ‘is filled with examples of this kind of demonstration’.

⁸⁹⁹ *Maṭālib* III, 78 (Ibn Sīnā’s account of complete causes), IX, 27-34 (human freedom)

⁹⁰⁰ *Maṭālib*, IV, 391-397 (the One can only generate one).

⁹⁰¹ *Maṭālib*, III, 151-164 (knowledge of particulars).

⁹⁰² *Maṭālib* IX, 26-27.

In the case of the will of God on high, this is pre-eternal and everlasting, so of course it has no need of a further will, so the difference [with the case of the human will] is clear.

But this section also highlights that the language of causative necessitation in the case of God is still problematic due to the loaded phrase *mūjib bi-dhātihi*, ‘necessitating of himself’ used by the Peripatetics.

Rāzī made clear in the *Mabāḥith*, that once you have removed the barrier to God’s direct action on particulars, the fact that God’s free eternal will, which arises out of God’s *dhāt*, necessitates the objects of God’s will, does not mean that God does not choose freely. In the *Maṭālib*, however, we find him using *mūjib bi-dhātihi* to distinguish inflexible natures in the world from choosers. The natural agent fire necessitates heating ‘of itself’ and this is different from a voluntary agent who moves either because of some desire, or because of the awareness of some benefit.

The abiding sensitivity of the phrase may explain why, in spite of the rigorous insistence on necessitation throughout the created order, Rāzī takes pains to emphasise God as ‘chooser’ throughout, and why the argument from design and the associated emphasis on sound attention to the intentionality behind the order of the cosmos seems to have a much greater significance than in the earlier work.⁹⁰³

§10.2.2 The Origination of the World, the Eternity of the Universe and the Resurrection of the Dead.

The *Mabāḥith* seemed broadly to accept the Avicennan argument, based on the eternity of time and its dependency on motion and matter, that the material universe was eternal in its current form. Rāzī’s account of time in the *Maṭālib* is now radically different

⁹⁰³ Though it may also reflect the symbiotic relationship with his parallel work on the Qur’ān, in which the signs of creation are a *leitmotiv*, as he frequently mentions.

from Ibn Sīnā's. As an independent substance, the metalogical connection with matter no longer applies. Matter does not need to be eternal. Yet Rāzī is fascinated by the Sabian theory of the five eternal substances, promoted by Muḥammad ibn Zakariyya al-Rāzī. He points out that the Mutakallimūn have no argument to prove that there are no independent non-material entities other than God, and goes on unambiguously to argue for the existence of three of them (time, space and soul) all of which are on the Sabian list, (though he only seems to speak definitively about the eternity of time).

Nevertheless, he explores a range of *kalām* arguments for the origination of the world that rely on time having a beginning, arrayed against parallel peripatetic arguments of the Peripatetics for the eternity of the world. The conclusion to this 'prodigious problem' (*hādhihi al-mas'ālati l-hā'ilati*) is left unresolved.⁹⁰⁴ He does slightly favour the Peripatetic position that he had affirmed in the *Mabāḥith*, on the grounds that the Peripatetics argue on the basis of the explanatory cause (what must be the case given the divine effector) – a 'why' syllogism – whereas the Mutakallimūn argue on the basis of the effect (the changeable nature of bodies) – a weaker 'that' syllogism. The implication is that this cannot be definitively resolved, but that the Peripatetics are on stronger metalogical ground.

However, in the early part of Book IV there are plenty of clues about the resolution that he might favour.⁹⁰⁵ Most Jews, Christians and Muslims believe that the world was originated both in its form and in its matter while the Peripatetics believe that it is eternal in its form and its matter. A third option is that its formal properties are originated, but its matter is eternal. He enumerates theories of basic matter found in the Presocratics and

⁹⁰⁴ *Maṭālib*, IV, 322.

⁹⁰⁵ *Maṭālib*, IV, 19-33.

Plato and pointedly includes in this category Democritus and Pythagoras whose theories will find echoes in the atoms of Book VI.

He also explores a significant convergence between scripture and reason. The Qur'ān and the Torah (the opening of Genesis 1) yield no scriptural evidence for the origination of the world.⁹⁰⁶ Though he concludes that this means that the issue is so incredibly difficult to resolve, that even the great prophets would not touch it, in the process he sows some important seeds in the reader's mind.

Consider his exegesis of the phrase 'All praise to God, Lord of the worlds'. 'Lord of the worlds' does not necessarily imply creation out of nothing, it could imply providential care (*ināya*). So:

Anyone who says, 'the Most High is the one who brought this world into being from these particles and arranged them in the best manner and in the most pleasing form' has acknowledged that the Most-High is the all-powerful Lord of the worlds.⁹⁰⁷

A similar exegesis of the word *khalaqa* (create) as equivalent to *qaddara* (predestine) again allows the possibility of God creating the world by arranging eternally existing particles in the best possible order. There is scriptural space for yet another of the five Sabian eternals, from which this world comes into being. Indeed, he will return to a scriptural argument for pre-existing atoms in Book VI, claiming Quranic support for a version in which the atoms all start bundled together and the Torah's support for one in which they all start off scattered.⁹⁰⁸

This would neatly resolve some, if not all the issues around the 'prodigious problem'. He has shown himself open to a Democritean or Epicurean universe of infinite

⁹⁰⁶ *Maṭālib*, IV, 29-34; VI, 199.

⁹⁰⁷ *Maṭālib*, IV, 29.

⁹⁰⁸ *Maṭālib*, VI, 199-200.

worlds and rejected the notion that the celestial spheres are of some special, infrangible substance. Atomic theory allows an eternal universe with internal flexibility. Worlds may come and go, but while they last, they can still run according to stable laws. The heavens can move and the sun can turn back either when God decides to change the properties hitherto assigned to the atoms or because the more fundamental laws that God has placed in the wider universe cause this to be so.⁹⁰⁹

This should also give options for resolving the problem of the resurrection body unavailable on the Peripatetic model of the *Mabāḥith*. A time-limited world only has a finite number of souls, so the problem of finding resurrection bodies for infinite souls disappears. An eternal world in an infinite universe would equally solve the problem. However, several of the sets of arguments he presents for the discussion of the self in Book VII actually pull in a different direction.

He clearly rejected the classical *kalām* definition of the human as a specific body with specific inherent properties of life, awareness etc. It is the soul, one of the three non-material substances other than God, that constitutes the identity of the individual human.⁹¹⁰ Among the array of arguments to support this theory of human identity, he uses the doctrine of the resurrection.⁹¹¹ But he thereby throws up a paradox for conceptualising bliss in the re-embodied afterlife.

The argument runs so. Our identity as individuals must be carried by our souls because the body perishes with its properties and *that* individual cannot be restored.⁹¹² Without souls, then, there could be no resurrection and without resurrection human life

⁹⁰⁹ *Maṭālib*, I, 186, Note the link between the principle of equivalence of bodies and the doctrinal positions on the free choice of God, the signs of the end times and the resurrection.

⁹¹⁰ *Maṭālib*, VII, 29-31.

⁹¹¹ *Maṭālib*, VII, 123-128.

⁹¹² At *Maṭālib*, VII, 103 ff, he rejects a modified Epicurean account of the soul, where the soul is a different sort of material from the body, such that God preserves it after death for reward and punishment.

would be pointlessly miserable. Since creation is not pointless and human life must be created for some good, there must be a resurrection, so there must be souls independent of mortal bodies.

The argument relies on showing that embodied life itself is inescapably miserable, that bodily pleasures and the higher pleasures of the soul are in conflict and that the house of this world is a realm of ‘testing, toil and evils’.⁹¹³ It raises the question, why one would want to be re-embodied at all. The argument suggests that Rāzī himself favours a version of Ibn Sīnā’s salvation narrative of an escape from the body to a higher realm, a view hard to reconcile with classical accounts of the resurrection life, but easier to reconcile with the notion of a soul’s ‘return’ to the embodied celestial archetype that made it.⁹¹⁴

He reprises this line of argument in two later sections of demonstrative proofs and inductive, credible (*iqnāʿī*) proofs specifically for the immortality of the soul.⁹¹⁵ There too, he shows little interest in what kind of body a soul might end up in, and a great deal of interest in the notion that separation from the body enables a soul to draw closer to the glorious, revelatory light of the knowledge of God. Thereby, he invokes not just saints and prophets, but philosophers and sages, including Socrates, Plato and Aristotle, as examples of those who seek and gain access to higher knowledge by abandoning the world of matter.

Rāzī’s discussion seems incomplete here. We might expect a full discussion of reward and punishment in the afterlife, following on from the general discussion of human action and duty in Book IX.⁹¹⁶ However, we might plug the gap with a passage from his

⁹¹³ *Maṭālib*, VII, 128. It is important to observe Rāzī’s apologetic reasons for attacking worldly pleasures alongside any personal ones. Adamson has traced the *topos* back to Plato via Muḥammad ibn Zakariyya al-Rāzī, with an Epicurean offshoot. Adamson “Platonic Pleasures in Epicurus and al-Rāzī”, 71-94.

⁹¹⁴ *Maṭālib* VI, 189 (the reformation of celestial and earthly bodies); VII, 123 ff (the incoherence of materialist accounts of the resurrection). The theory of different soul-species, each one with its own astral patron, ‘is the [teaching] we choose.’ *Maṭālib*, VII, 143.

⁹¹⁵ *Maṭālib*, VII, 211-234. Following on from arguing against the transmigration of souls.

⁹¹⁶ His list of the topics of theology at *Maṭālib* I, 63 implies a dedicated section on the afterlife.

Kitāb al-arbaʿīn, written ten years earlier. There he offers a summary discussion congruent with much of the material and the approach of the *Maṭālib*.⁹¹⁷

The *Arbaʿīn* makes clear that belief in bodily resurrection is a non-negotiable in the Qurʾān. It also makes clear that although Mutakallimūn insist on a traditional materialist account of the resurrection, the more precise thinkers (*muḥaqqiqūn*) accept a bodily and spiritual resurrection.⁹¹⁸ He allows that both interpretations of the traditional point of view are possible, scripturally and philosophically.⁹¹⁹ The philosophical objections to restoring annihilated physical individuals and the paradoxes of gathering scattered particles, familiar from the *Mabāḥith*, are dismissed. He makes the point that ‘bodily resurrection’ does not exclude the possibility of a (material) spiritual body or a non-material soul, that is initially separated and then reunited with its body.⁹²⁰

Some form of resurrection body is non-negotiable, but that is compatible both with an extreme materialist position and with a re-embodied soul. He acknowledges the paradox that the prime argument for resurrection, based on the pointlessness of the pleasures of the body in this world, also challenges any straightforward understanding of bodily resurrection.⁹²¹ The quest for spiritual happiness pulls in the opposite direction to the pleasures of the senses. He considers various forms of disembodied salvation concluding with a picture of souls migrating into ‘a connection with the world of the spheres’ where they enjoy the uttermost bliss and refreshment.⁹²²

This image is consistent with the notion of a ‘special relationship’ with one’s archetype, to which one returns. It also carries through into his resolution of the paradox.

⁹¹⁷ *Al-arbaʿīn* (II), 53-74.

⁹¹⁸ *Al-arbaʿīn* (II), 55.

⁹¹⁹ *Al-arbaʿīn* (II), 55-64.

⁹²⁰ *Al-arbaʿīn* (II), 59-61.

⁹²¹ *Al-arbaʿīn* (II), 71.

⁹²² *Al-arbaʿīn* (II), 70-72.

On death, souls, released from bodies, participate in the world of the holy and the pure. This participation gives them new strength to resist the disruptive effects of physical desires and needs. Through this new strength, they are able to return to bodies and enjoy *both* spiritual and physical happiness in a new-formed world. We can note the felicitous union of perfection as power and perfection as virtue.

This not only offers a resolution that harmonises elements from different traditions, but it also reveals a method that is completely consistent with the approach of the *Maṭālib*. First there is no rational argument against it, secondly, it is a combination of ‘prophetic wisdom (*ḥikma*) and *falsafa* criteria (*qawānīn*) that necessitates its acceptance (*muṣīr ilayhi*)’ even though the detail is beyond our grasp.⁹²³ He allows classical Ash‘arīs to carry on believing what they believe, and demonstrates his own preference for a fusion of ideas that integrates Sabian and Hellenic cosmologies with Qur’anic commitments in a more universal soteriology.

§10.2.3 The Hard Questions in a new Context

The *Maṭālib* offers a vastly greater array of parallel material and parallel arguments than the *Mabāḥith*, and sets the four problems in the context of a global intellectual endeavour. Peripatetics and Mutakallimūn contribute substantially, but they are not the only voices, and though their arguments are a useful witness when they agree, their partisan disputes take second place to the search for the best answer that is consistent with scripture.

The question of God as choosing agent ceases to focus on the problem of necessity and miracles, but is set in the larger context of God’s (already miraculous) beneficent action and theodicy. The problem of particulars and universals is no longer just about God’s

⁹²³ *Al-arba‘īn* (II), 72.

knowledge and action in the world. It reframes the relation of rational souls to the world and to God, to salvation through knowledge and understanding. The resolution of the problem of the origination of the world takes Rāzī beyond *falsafa* and *kalām*. The problem of the resurrection body is absorbed into a narrative of a spiritual journey of escape from this mortal body which entails a sometimes Platonic (or Yogic), sometimes astrological return to the stars.

§10.3 Rāzī's Progress

Whether Rāzī is writing in *kalām* mode or *falsafa* mode, his way of proceeding, as Shihadeh's argument indicates, is different from Ghazālī's. Ghazālī expresses both positive and negative views about *falsafa* as we have seen, and effectively admits that the positions and arguments he presents in all his writings will depend on his audience. He writes with the tone of a secret admirer, obliged by circumstances to go on the attack.

Rāzī seems to recognise that the lines between *falsafa* and *kalām* are already significantly blurred. In his early *kalām* work, the *Nihāya*, he asserts the importance of rational argument for faith and he boasts of the thoroughness and quality of his own arguments.⁹²⁴ He makes similar claims in the *Mabāḥith*. He describes how he will present detail from a range of earlier thinkers, along with the problems their doctrines raise and possible solutions to those problems.⁹²⁵ But he also makes clear that at times he will depart from well-known doctrines and that this is entirely justifiable.⁹²⁶

He seems remarkably consistent in his search for conclusions rooted not in slavish faithfulness to a tradition, but in sound argument. This does not mean that he will necessarily say the same thing in every work but it does suggest that what we read on the

⁹²⁴ *Nihāya*, (preface) 99.

⁹²⁵ *Mabāḥith* I, (preface) 3ff.

⁹²⁶ *Mabāḥith* I, (preface) 4-5.

page is the current conclusion of a person committed to thorough, rational enquiry. Whatever variants there may be between one work and another, he does not appear to disown his earlier work, apparently viewing it as part of an evolving project, to provide a robust, rational justification for Sunnī Islam.

§10.3.1 Double Truth?

Nevertheless, Griffel has suggested that he operates a theory of double truth, in which the higher status truths of philosophy sit alongside the (occasionally divergent) truths of revelation good enough for ordinary believers. The basic insight seems correct. In the *Maṭālib* he recognises that ordinary folk don't join the dots in the debate about the resurrection. He clearly makes as much logical space as possible for the less rigorous to keep their beliefs intact. He expatiates on the power and beauty of the Qur'an, above all, because it presents the argument from design rhetorically and inductively in a way that gladdens the heart of all, as opposed to gritty, mind-bending philosophical arguments – even though these are precisely the sort of arguments he will spend most of the book wading through.

Here he seems to have more in common with Philo and Clement, who systematically relate philosophical truths to sacred text and familiar doctrine than with Ghazālī, who does so occasionally, but writes differently about those truths for different audiences. Everyone can read Rāzī's texts, and those who have the capacity to understand will do so.⁹²⁷ Though this open pursuit of intellectually credible belief clearly gets him into trouble he does not disown the project. When he has to justify his engagement with *falsafa* against the hostile and envious, who are accusing him of departing from Sunnī orthodoxy, he is happy to praise Ibn Sīnā as the greatest exponent of the peripatetic tradition.⁹²⁸ The writings of the

⁹²⁷ Gutas suggests Ibn Sīnā intends such an approach in the *Ishārāt*. Gutas 1988: 157.

⁹²⁸ *I'tiqādāt*, 91 – 92. See Hutchings 1971: 58.

philosophers contain some powerful ideas (*i'tiqādāt 'azīma*). He himself has engaged with *falsafa* writings from the very beginning of his career in *kalām*, 'in order to respond to them'. The books he wrote to achieve this, are widely acknowledged by the discerning to be the best of their kind.⁹²⁹

There is no notion here that any of the conclusions of these books may be inappropriate for believers simply because three of them might be considered as works of *falsafa*. Indeed, taken as a whole, they 'elucidate the foundations of religion' and are from the outset an integral part of his pursuit of *kalām*. As Shihadeh's narrative of Rāzī's development implies, they are an abiding part of a process of weaving the best of the philosophical tradition into the overarching project of creating a philosophically respectable *kalām*.

The argument arrays of the *Muḥaṣṣal* and *Maṭālib* do occasionally seem to lead to an inconclusiveness reminiscent of Sextus. This seems to be one of the ways he avoids pushing his readers too hard, particularly in the more allusive *Muḥaṣṣal*. But in the later work, though he is scrupulously polite towards classical Ash'arī positions, he has no compunction about pointing out their philosophical flaws. Sometimes, as in the case of the argument about the origination of the world, or the choice between a Peripatetic universe of agent intellects, a universe of noble celestial souls, or the talismanic universe of celestial souls involved in a cosmic power struggle, the arguments *cannot* be conclusive, though some may be more credible than others. This is not double truth, though, but intellectual honesty.

⁹²⁹ Including the *Mabāḥith*, the *Mulakhkhaṣ* and the *Sharḥ*.

§10.3.2 Scepticism?

Shihadeh suggests that Rāzī becomes more sceptical in his later works, and we have highlighted some recognisable, ancient sceptical argument arrays throughout. Griffel suggests that Rāzī is working within a culture tolerant of ambiguity, in which the parallel intellectual traditions of *ḥikma* and *kalām*, which yield different conclusions, can sit side by side. He suggests that that ambiguity is reflected to the end in Rāzī's response to the four critical questions and his readiness to suspend judgment, where none can definitively be made.

There are certainly examples where he suspends final judgment in the *Maṭālib*. In the case of time and matter, however, we find him more hesitant in the *Mulakhkhaṣ* than in the earlier *Mabāḥith*, yet in the *Maṭālib* he clearly believes he has a decisive argument for their status as atomic substances.

He also seems consistent in his application of the epistemological principles he forges in the *Nihāya*, the *Mulakhkhaṣ* and the *Sharḥ*. Though the ontological and psychological narrative that underpins them is different from that of Ibn Sīnā and though it prioritises sensible and interior phenomena over the intelligible, it still relies on self-evident certainties, and processes of entailment that lead to new, substantive certainties, many of which overlap with Peripatetic conclusions. He deploys the process of empirical reasoning freely and optimistically to the data of astrological and magic traditions, as well as to medicine and earth sciences. There are things beyond our cognitive grasp, because of their sublimity or their minuteness, but there are many things within it.⁹³⁰

Though many of the arguments he incidentally records have a recognisable trace in the sceptical tradition, he roundly rejects the overtly sceptical tactics deployed by Ghazālī

⁹³⁰ See *Maṭālib* I, 46-48, between the brilliance of the sun and the motes in the air, there are things we can see.

and (before him) al-Ash‘arī as detrimental to the project of rational theology. His later scepticism might therefore be better labelled a mature, critical recognition of the limitation of arguments – something philosophers tend to get better at as they get older. That is compatible with belief commitments to the wide range of accounts which he endeavours to show are credible, even if not decisively provable.

§10.3.3 A new Scientific Paradigm?

Ibrahim suggests that Rāzī is developing an alternative scientific method and an alternative ontology to that of the Peripatetics. The essential insight seems sound. His theory of knowledge and perception has its roots in the more phenomenal, Epicurean-influenced medical tradition. However, there is less of a gap with Ibn Sīnā’s practical, experimental science than this might suggest. Nor does an epistemology rooted in phenomena deter him from the search for metaphysical demonstrations about body, time, space and theology throughout his career. Indeed, in the *Maṭālib* the phenomena of immediate awareness are central to his argument in these areas.

He reflects on inspirational knowledge in the *Maṭālib*, but makes clear that inspiration, which provides data for reflection needs to be moderated by reason.⁹³¹ Seers of overwhelming visions may stop short of their goal, unless they can evaluate by reflection and derivation what they have found.⁹³² Such visionary states cannot be explained or attained by argument or understood by those not privy to them, but it is the person who is perfect in asceticism *and* in reasoning who will achieve them. The *Maṭālib* itself is a book of arguments, reprising and developing material and topics found in the earlier works, underpinned by the same epistemology and logic, with the same commitment to honesty

⁹³¹ E.g. *Maṭālib* I, 54-59.

⁹³² *Maṭālib* I, 58.

about the epistemic status of conclusions and making significant use of data from the different fields of scientific study.⁹³³

When Rāzī challenges Ibn Sīnā's account of how we acquire knowledge of universals and his bodily-form theory, this has a theological as well as philosophical purpose. It removes the barrier trapping God in an intelligible realm and allows direct action of a variety of non-material intelligences on the independent reality of the visible world. The metaphysics of matter in the *Maṭālib* reveals the ultimate purpose of the questions raised in the *Mabāḥith* and *Mulakhkhaṣ*: the proof of the necessary being who is also wise and free.

§10.3.4 Seeking Salvation?

Noble's discussion of the *Sirr* and the *Maṭālib* highlights a set of theological salvation narratives to which Rāzī is attracted. He notes that Rāzī is aware of the incompatibility between the actions of the astral rituals and obedience to the Qur'anic laws. He draws on Shihadeh's insight that Rāzī's ethic in the end focuses on the perfection of the soul to suggest that the vision of a soul engaging with its celestial maker in order to draw closer to its 'perfect nature' suggests a practical spiritual pathway to perfection that Rāzī finds compelling.

Rāzī is ambiguous about the nature of that perfection, hovering between perfection as power and perfection as virtue. Perhaps that tension is best understood in the context of theodicy, and in particular the pessimistic, Hobbesian account of human nature noted by Shihadeh. In the *Maṭālib*, the rhetoric of the misery of human life and the futility of its pleasures falls within a genre and serves an apologetic purpose (proving the need for the

⁹³³ Lagarde, commenting on the *Tafsīr*, notes that for Rāzī, though most secrets require divine illumination, there are some, pertaining to the external world, that can be appropriately attained by scientific methods. Lagarde 2008: 36.

resurrection), nevertheless, the pessimism sits oddly alongside bright assertions of the wonders of the world and its wise creator.

Perhaps there is something personal, here. A world governed by not-always-benign celestial agents provides a better account of why life turns out the way it does, than Ibn Sīnā's sunnier universe. The premiss that many celestial agents and their human creations are engaged in a struggle for power over one another is still compatible with the premiss that some celestial agents are indeed noble and call their children to nobility and freedom in a life beyond the lower world. The narrative of cosmic ethical complexity and the associated unsavoury routes to power and control can sit alongside narratives of individual salvation, rescue from the world and the acquisition of beneficent power for those who are the golden and silver souls of *Maṭālib* I.

§10.3.5 The Quest for universal Truth?

For Griffel, the key to understanding the relationship between *kalām* and *ḥikma* is that each has its separate methodology and accordingly its separate doctrinal conclusions, which co-exist in a creative and (intellectually) irresolvable tension. The reading of this study recognises that Rāzī writes differently in each mode but offers a slightly different way of looking at the relationship. *Kalām* is the inherited system, with its local intellectual framework, that yields the religious conclusions an Ash'arī 'we' can all agree on. *Hikma* is the more universal intellectual framework that can interrogate both *kalām* arguments and their *falsafa* challengers, and offer a more universal justification (or interpretation) of inherited religious conclusions. The relationship would be something like the relationship in Roman Catholic Theology between Denzinger, Augustine and Aquinas (Catholic *kalām*) and the approaches of (e.g.) Tyrrell, Lagrange, Rahner, de Lubac, de Chardin (Catholic *ḥikma*). Griffel's hypothesised *madrassa* curriculum, with *kalām* in the morning and *ḥikma* in the afternoon, makes more sense if one thinks of the former as akin to historical, dogmatic

theology (a starting point) and the latter to current, systematic theology, which, though more edgy and inconclusive, is more intellectually robust, and thus (potentially) has greater apologetic force.

If this reading is correct then Rāzī's *ḥikma* writings do reveal what he considers the most intellectually sustainable interpretation of classical dogmatic positions at any one time, and *a fortiori* on the topic of secondary causality. And we can note that a final element in Rāzī's progress from the *Nihāya* and *Mabāḥith* to the *Maṭālib* has emerged. In the earlier works the dominant issue was the defence of orthodox positions against competitors, making use of the tools of syllogistic reasoning. The primary focus of engagement was with the Peripatetics and with reconciling their powerful science with key theological commitments. The *Sharḥ* showed enormous respect for Ibn Sīnā, hinting that the more Rāzī engaged with him, the more impressed he was with the quality and complexity of his work. Alongside criticism, we find creative, reconciling interpretation.

But what is striking in the *Muḥaṣṣal* and the *Maṭālib* is how the *falsafa* – *kalām* debate and the figure of Ibn Sīnā fade among the arrays of parallel arguments, for and against. These increasingly draw in material from the wider Hellenic tradition as well as from the Indic, Persian and Mesopotamian heritage. Some arguments point in similar directions towards firm conclusions, some are mutually contradictory but can be resolved or discarded, and some must be left unresolved. In the *Maṭālib* in particular, we see a search for reconciliation and commonalities across the traditions, space for reasonable disagreement, often explicitly harmonised with scriptural text.

Rāzī's eclectic approach and commitment to universal reason has something of Philo and Clement of Alexandria.⁹³⁴ He takes all traditions seriously, particularly in the

⁹³⁴ Interestingly, according to Griffel, the C13 Christian writer Barhebraeus compares him to Origen. Griffel 2021: 300.

spheres of astronomy and theology, which are so ancient that they have no first founder. In spite of the many contradictions, he weaves together convergences, aligning them with the language of scripture. The result is a sense that the whole of humanity contributes insights into their place in the universe under a wise creator God. As for Philo and his Judaism, for Clement and his Christianity, so too for Rāzī and his Islam.

The richness and the jeopardy of this procedure, both evident in the reception of Rāzī, lie in the fact that while exogenous insights may offer a more universal confirmation of the scriptural heritage, they also prompt new pathways for its interpretation. For some, that is a threat, for others it is an intellectual liberation.

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