HA-SHAMAYIM M'SAP'RIM K'VOD EIL:
THE HEAVENS DECLARE THE GLORY OF GOD!
AN EXPLORATION OF THE GREEK PHILOSOPHY OF THE MUSIC OF THE SPHERES IN PREMODERN JEWISH TEXTS

by Sarah Grabiner

SUMMARY

Goal: To present Jewish texts which originate from the Hebrew Bible through to the mid-sixteenth century, which engage with the classical Greek philosophy of the music of the heavenly spheres as it appears in the thought Pythagoras and Plato, and their disciples.

Chapters:

- Introduction- Opening up discussion of the topic and its previous scholarly treatment, and an explanation of the scope of materials to be explored throughout the thesis.
- Chapter One- A survey of the Greek philosophical material, its possible ancient Near Eastern origins, and a discussion of Philo Judaeus of Alexandria.
- Chapter Two- The conflict between Pythagoras and Yuval for the discovery of music.
- Chapter Three- A comparison between Plato's Sirens and the Jewish idea of angelic song.
- Chapter Four- How the music of the spheres enters and impacts the human soul.
- Chapter Five- The interaction between the music of the spheres in Jewish texts and God.
- Chapter Six- The majority of this thesis focuses on the ways in which premodern, rationalist Jewish texts engage with the idea that the heavens produce music or sound. I address Psalm 19, BT Yoma 20b, and various rabbinic midrashim, before discussing the positions of five medieval exegetes (Rashi, Moses Ibn Ezra, Abraham Ibn Ezra, Maimonides, Radak). A particular theme that arises from this discussion is the tension between metaphorical and literalist positions. Finally, I present briefly the work of two Early Modern Jewish writers on this topic, Isaac ben Haim ben Abraham Cohen and Judah Moscato.
- Conclusion to the thesis

Materials used: Much of this thesis consists of primary source analysis, using biblical, rabbinic, medieval, and Early Modern Jewish texts. The secondary literature on these sources and their authors is also presented where pertinent.

Contribution: This thesis presents an organising structure for considering the engagement of Jewish thought and text with the Greek philosophy of the music of the spheres, which is a new set of categories through which to understand this material. Chapter Six specifically consists of original research: the collection, curation, analysis, and comparison of biblical, rabbinic, and medieval texts concerning the music of the spheres, to show that this doctrine was regularly considered and often accepted by Jewish philosophers, exegetes, and commentators.

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Contents

Introduction

> "Suddenly I understood why the pagans had worshiped [the sun] as a god. I had a desire to kneel and bow down myself. Well, and could one be certain that it lacked consciousness? 'The Guide to the Perplexed' said that the heavenly bodies possess souls, and were driven in their orbits by Ideas emitting a divine music as they circled. The music of the spheres now seemed to mingle with the twittering of the birds, the sound of the coursing river, and the murmur of the praying multitude. Then a greenish blue shimmer appeared on the horizon, the first star, a brilliant miniature sun. I knew that it had taken years for the rays from this fixed star to reach my eyes. But what were rays? I was seized by a sort of cosmic yearning.'"[1]

Isaac Bashevis Singer writes in his short story, *Tashlich,* of the music of the spheres. Captivated by the sun's beauty, his protagonist muses about ancient Greek worship and thought, Maimonides' *Guide to the Perplexed,* and the music of the heavens and earth, resounding all around him. How did a twentieth-century Nobel-laureate Yiddish author come to reference a classical Greek philosophical concept, as transmitted via a twelfth-century Jewish-Spanish-Egyptian sage?

Music is well established as an important element of Jewish prayer and cultural life, but there is substantially less written specifically about the cosmological, philosophical, and theological import of music in Judaism. This thesis will explore Jewish texts that discuss a particular kind of music: the heavenly music of the spheres resonating throughout the universe, as described by ancient Greek philosophers, such as Pythagoras and Plato.

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[1] (ed.) Rubin, 136f

The concept of the music of the spheres appears in Pythagorean and Platonic texts and traditions, and those of their intellectual successors. I will begin with this background of ancient Greek philosophy, and continue to explore the way in which it is inherited, translated, and interpolated into Jewish thought. How do Jewish philosophers and commentators absorb or reject their Hellenistic predecessors' and contemporaries' cosmology in their thinking? Are there commonalities between these texts, as a result of their originating with ancient Near Eastern forebears? In this thesis, I will address these questions, and more: Is there a Jewish notion of the music of the spheres? How and where does this doctrine appear in Jewish text? What is the impact of this heavenly harmony on earth? What is the relationship between descriptions of harmony in the heavenly realm, and our musical or spiritual practises and preferences on earth?

The issue of whether the music of the spheres concerns audible, sonorous music, or constitutes a metaphorical use of the language of music to point to inaudible, heavenly phenomena is crucial. This question forms the subject of significant debate in both the Greek and Jewish sources I will present. Aristotle's soundless universe represents the primary ancient counter-argument to the whole notion of the music of the spheres. I will address the specific question of whether Maimonides adopts the Aristotelian or Pythagorean-Platonic approach in this instance.

Anecdotally, I have found many praying Jewish individuals (lay, professional, clergy) who share my lived experience of the meaning that being surrounded by harmonious

music brings to their spiritual life. As such, I aim to explore how this experience, of being surrounded by harmony, is not just earthly, but rather is also true on a cosmic scale. As Amnon Shiloah writes, concerning certain excerpts of the Zohar, "Not only the angels sing: the stars, the spheres and the *merkavah,* the trees in the Garden of Eden and their perfumes, indeed the whole universe sings before God. The great power of this song, and the fact that the people of Israel sing below in parallel with the Divine music, makes the Jews' singing exercise an influence both on the supernal song and on the Divine world itself."[2]

Literature Review

The juxtaposition between hellenistic and hebraic cultures dates back to the biblical text, as Zechariah 9.13 states, "וְעוֹרַרְתִּי בָנַיִךְ צִיּוֹן עַל־בָּנַיִךְ יָוָן", "I will arouse your sons, O Zion, / Against your sons, O Javan"[3]. In extra-biblical literature, the transformative interaction between Jewish practise and thought, and ancient Greece began in the fourth century BCE. As the conquests of Alexander the Great reached the Levant, the hellenising process came to Jewish communities across the ancient Near East. The oppositional conflict set up by the Zechariah's charge continues through the Maccabean revolt and the Hasmonean dynasty of the second century BCE. Scholars have debated and elaborated on the extent to which the Jews of these centuries appreciated their hellenising influencers,

[2] Shiloah (2009), 135
[3] 1985/1999 JPS translation

or not.[4] However, by the second century of the common era, at the same time as the establishment of classical rabbinic hegemony in Jewish life, a certain appreciation for Greek culture and thought emerged. For example, in Mishnah Megillah 1.8, holy books are permitted to be written in Greek by some rabbinic authorities. There is abounding scholarship concerning the relationship between Jewish and Greek cultural, philosophical, and religious life, and so I will not repeat that well-researched topic at length.[5] By the tenth century, we find that Jewish philosophers and commentators are imbued with Platonic and Aristotelian influences. This is especially true of those living in Arab lands, in which the Greek philosophical tradition was readily translated and adopted.

Specifically concerning previous scholarship on the relationship between Jewish and Greek musical thought, most material begins with the ancient musical instruments utilised in both traditions. This is the focus of Abraham Idelsohn's discussion of the music of antiquity; Greek, Assyrian, Babylonian, Phoenician, and Israelite.[6] The great founder of Jewish ethnomusicology does at one point compare the use of the *halil* (pipe)

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[4] For example, many cite how BT Chagigah 15b tells of Elishah ben Abuyah, the excommunicated sage called "*Acher"* (the Other), who never stopped singing Greek tunes. This is stated derisively, as one of his failings. This is in contrast to the text from Mishnah Megillah 1.8, below.

[5] See Feldman, L. H. *Studies in Hellenistic Judaism* (Brill, 1996), Levine, L. I. *Judaism and Hellenism in Antiquity* (University of Washington Press, 2012), Hengel, M. *Judaism and Hellenism: Studies in their Encounter in Palestine during the Early Hellenistic* Period (Wipf and Stock Publishers, 2003)

[6] Idelsohn, 5. A similar approach appears in Engel, C. *The Music of the Most Ancient Nations - Particularly of the Assyrians, Egyptians and Hebrews; With Special Reference to Recent Discoveries in Western Asia and in Egypt* (London: John Murray, 1864), which predates Idelsohn's publication by fifty years.

in the Jerusalem Temple with the *aulos* (a similar wind instrument) in Greek music, describing how "the Greek philosophers opposed it because of its exciting sound and because it was tuned according to… a tetrachord unfamiliar in Greece."[7] This indicates something of a deeper analysis than comparing material objects, that there was a different philosophical approach to music in the two cultures, but Idelsohn does not elaborate here.

Discussing the interaction between Greek and Jewish music in hellenistic Palestine at the turn of the millennium, Idelsohn notes how, "We learn that toward the beginning of the Common Era Greek song penetrated into Palestine, and that people of education cultivated a great liking for it, a fact which aroused the dismay of the pious spiritual leaders."[8] He indicates various rabbinic texts, such as BT Chagigah 15b about Elishah ben Abuyah's predilection for Greek tunes (see footnote 4, above), as well as Josephus' reporting of how Herod introduced Greek musicians into Jerusalem (citing *Ant. Jud.* XV, 8, 1). Similarly, in a chapter titled, "The Attitude of Rabbinical Authorities to Alien Melodies,"[9] Amnon Shiloah refers to similar passages and themes.

Idelsohn's intellectual disciple, Eric Werner, was a leading figure of Jewish musicology in the twentieth century, founding the Hebrew Union College School of Sacred Music in 1948, and the musicology department of the Tel Aviv University in 1966. In his work, he continues Idelsohn's artefact-based approach. However, he does introduce a more

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[7] Idelsohn, 13
[8] Idelsohn, 22
[9] Shiloah (1995), 72

theoretical aspect as he discusses the importance of the symbolism of numbers as they relate to musical instruments. Werner notes the antiquity of the Jewish connection between number and tone, and likewise between earthly and heavenly matters, specifically as having possibly been "imported by disciples of the Pythagorean or of the Neo-Platonic philosophy."[10] Here we see hints of various themes that will form an important part of the discussions in this thesis: the relationship between the earthly and the heavenly, and the central tenet of this thesis that is the connection between Pythagorean and Platonic thought, and Jewish text.

An even more pertinent philosophical comparison comes in Werner's scholarship on the relationship between medieval Jewish and Arabic musical thought. There, he discusses how Jewish philosophers were impacted by their contemporaneous Arabic counterparts, and how the Jewish texts are thus imbued with Greek thought via Arabic translations.[11] He was an important musicologist, but not a scholar of Hebrew text, and, as I demonstrate below, some of his conclusions concerning the medieval Jewish exegetes' positions on the music of the spheres need to be revised. Nonetheless, the concept that Werner propounded, of the relationship between Jewish and Arabic medieval texts concerning music, will reappear throughout this thesis, concerning the writings of Jewish sages like Sa'adia Ga'on, Abraham and Moses Ibn Ezra, and Maimonides.

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[10] Werner (1985), 8

[11] See Werner, E.: 'The Philosophy and Theory of Music in Judeo-Arabic Literature' in *Hebrew Union College Annual* 16 (1941): 251-319. 'The Oldest Source of Octave and Octechoes' in *Acta Musicologica* 20 (1948): 1-9. 'Greek Ideas on music in Judeo-Arabic literature' in *The Commonwealth of Music - In Honor of Curt Sachs* (eds.) Reese, G., Brandel, R. (New York, 1965), 71-96.

Amnon Shiloah is a crucial scholar in this field. A professor at the Hebrew University of Jerusalem from the 1960s until his death in 2014, Shiloah held many senior positions throughout the Jewish musicology world. He was a prolific scholar of Jewish and Arabic music. Like Werner, it is through this lens, of the relationship between Jewish and Arabic music and writings on music, that Shiloah touches on the topic of the music of the spheres. He writes of how Jewish sages learnt of the Greek material primarily through their interaction with Arabic writings on the subject and translations of key primary sources. His chapter, 'Theory of Heavenly Harmony and Angelic Song in Jewish and Islamic Sources,' was published in (eds.) J. Prins, M. Vanhaelen *Sing Aloud Harmonious Spheres: Renaissance Conceptions of Cosmic Harmony* in 2018, four years after his death. The notion of heavenly angelic song, specifically in the context of the music of the spheres, was clearly a current research topic that Shiloah was just beginning in his final years of work, and that he considered it an open field for study. While it is difficult to make such assumptions, I imagine that he would have pursued this rich and diverse topic had he had the ability. It is in light of the beginnings of this work that he completed that I conceived of and write this thesis.

Except the brief aforementioned article by Shiloah, published posthumously, none of these scholars include a substantial study of the specific topic in question here, the music of the heavenly spheres, via the methodology of text analysis. In this thesis, I hope to show that the doctrine of the music of the spheres represents an area in which Jewish

texts show integration and acceptance of some of the most striking, moving, and exciting facets of Greek philosophy.

The Scope of the Jewish Texts to be Explored

In this thesis, I will collect, curate, and analyse Jewish texts which address the Pythagorean and Platonic ideas of the harmony of the heavenly spheres. Much of this project will focus on close reading, critical analysis, and categorisation of these texts into five main areas: the origins of music, angels singing in the heavens, the impact of the music of the spheres on the human soul, the relationship between God and the music of the spheres, and the resounding of the heavens. The anthology will include biblical, rabbinic, medieval, and early modern material. With this set of sources, I will address the the questions of how Jewish texts approach the topic, and whether there exists a Jewish belief in the sonorous, audible heavenly spheres.

Between the time of the second-century CE Alexandrian philosopher Claudius Ptolemy, and the Scientific Revolution of the sixteenth century, the commonly held belief about the shape and structure of the universe was relatively stable. In the ubiquitous Ptolemaic model, the earth was spherical, with a number of planets, suns, and stars, arranged into concentric spheres rotating around it. This geocentric conception of the cosmos then gave way to Copernicus' theory of the heliocentric structure of the Solar System, which gained

near universal acceptance. The publication of Copernicus' model in his book *De revolutionibus orbium coelestium* (*On the Revolutions of the Celestial Spheres*), just before his death in 1543 is often cited as the beginning of the Scientific Revolution. Since so much of the material treated in this thesis rests on the geocentric conception of the cosmos, I have chosen to limit the scope of material to before this world-changing revolutionary moment in the sixteenth century.

There is one exception to this rule that I will present: Judah Moscato's *Higayon B'chinor*, published in a collected set of sermons (*N'futsot Y'hudah*) in 1588. I have included this Italian rabbi's homily because of its particular relevance to the material being discussed, but also because Moscato clearly either does not know of, or had not adopted, the Copernican model. He writes of the Pythagorean structure of the universe as unquestionable fact, and, as such, presents many interesting and important ideas for this thesis, through a distinctly, particularly Jewish lens.

The sources that I will include come from diverse genres: textual commentary, philosophy, poetry, and rhetoric. However, as will become apparent, the authors are all engaging in the same questions and the same material. As such, I have not limited my investigation by genre or style of text. The one field with which I have chosen not to engage in detail is Jewish mysticism. While this area of study is of great significance, and has plenty to say about the music of the spheres, it is deserving of its own separate inquiry. Shiloah began this work, in a broader sense, with his index, "– נושאי מוסיקה בזהר

טקסטים ומפתחות", (Jerusalem: Yuval Monograph Series, 1977).[12] Aspects of mystical speculation, or reference to mystical works will necessarily arise throughout my discussion. However, the focus of this thesis will be the various rationalist approaches, from the literalist to the figurative and metaphorical in Jewish thought, as these sources pertain to the Greek doctrine of the music of the spheres.

Chapter Outline

In Chapter One, I will begin with a survey the basic features of the classical Greek philosophy of the music of the spheres, in both Pythagorean and Platonic thought. I will present the two locations in Plato's writings in which the topic is primarily found, and the content of these passages. Finally I will briefly explore the work of Philo, as an early example of Jewish engagement with the music of the spheres.

This thesis will then present the diverse ideas concerning the music of the spheres in Jewish texts from biblical verses to the Early Modern era. I have established five categories by which to organize and understand Jewish references to or syntheses of the music of heaven. Each of these five categories will constitute a subsequent chapter of this thesis.

[12] This monograph is summarised in an article in English: Shiloah, A. 'Music Subjects in the Zohar' in *Journal of Synagogue Music* 34 (2009), 132-6.

In Chapter Two, I will explore the comparison and competition between Pythagoras and the biblical Yuval for the position of "inventor" or "discoverer" of music and harmony. The myth of Pythagoras stumbling across a blacksmith's workshop is set in contrast with the figure of Yuval as the father of all musicians in Genesis 4.21.

In Chapter Three, I will address the heavenly angelic beings singing on high, in Jewish texts referred to as *mal'achim, hayot ha-kodesh,* or *tz'va marom.* I will present this angelic song in parallel with the Platonic Sirens hymning on the rotating spheres of heaven. The notion of angels singing praises is well attested and has been written about extensively, so my inclusion of this topic here is particularly to show how this idea relates to the broader topic of the music of the spheres.

Next, in Chapter Four, this thesis will explore the simultaneous resonance of the human soul with this heavenly harmony, leading to the ways in which the music of the cosmos can impact the human spirit and ethics. I will focus on this human experience of heavenly music in Jewish texts, primarily influenced by Arabic writing on the topic.

In Chapter Five, I will address the question of whether and how Jewish texts took the ideas of the music of the spheres and imbued them with theological significance and resonance. The central text that constitutes this examination is Psalm 29, and the ways in which the voice of God, or God's self, are included or implicated in the music of the spheres.

Much has been written in the scholarly corpus concerning the first three of these categories. As such, I will briefly survey the extant research on Yuval and Pythagoras, angelic song, and the music of the soul in Chapters Two, Three, and Four. The notion of God and the music of the spheres appears to be less well explored. I will briefly introduce some key texts and questions in Chapter Five, but there remains more work to be done on this subject. This thesis will then go on to focus on and deal in depth with the music of the heavenly spheres themselves in Jewish text.

Chapter Six forms the majority of this thesis. I will investigate the question of whether there is a Jewish concept of music emanating from the heavens. I will focus on Psalm 19 as the biblical jumping-off point for the possibility of heavenly music, presenting the biblical verses and then the rabbinic and medieval reception of this text. Throughout these sources, the central consideration is whether to understand Psalm 19.2-5 as metaphor, or as a literal reference to sound coming from the heavens. This question appears in rabbinic midrashim, as well as throughout the comments of the five medieval sages whose work I will analyse. Rashi, Moses Ibn Ezra, Abraham Ibn Ezra, Maimonides, and Radak each approach the music of the spheres through their interpretation of Psalm 19, as well as elsewhere in their literary corpuses. I will present the common and divergent threads that flow through this textual tradition. Finally, I will mention two Early Modern Jewish writers, Isaac ben Haim ben Abraham Cohen and

Judah Moscato, who also engage with the doctrine of the music of the spheres in their work.

Chapter One: The Greek Philosophy of the Music of the Spheres

In the Beginning: Pythagoras

To the best of our knowledge, formal music theory begins with Pythagoras, in the second half of the sixth century BCE. In his entry on the polymath in *The New Grove Dictionary of Music and Musicians*, Barbera describes how,

> "Pythagoras's importance for music lies in his purported establishment of the numerical basis of acoustics. On passing a blacksmith's shop, he is said to have heard hammers of different weights striking consonant and dissonant intervals (Nicomachus, *Manual of Harmonics,* vi). He discovered that musical consonances were represented by the ratios that could be obtained from the musical tetractys."[13]

This story, originally appearing in Nicomachus' first-century CE writing is told again, virtually identically, by Iamblichus in the third century CE. The proportional relationships that create acoustical consonance are the basis upon which much of music and harmony theories have been built.

The mathematics were not only an earthly theory for Pythagoras. The entire universe was based on these same harmonic proportions, and resounded with heavenly music. Hippolytus of Rome wrote a summary of Pythagoras' philosophy, and stated that, "he was the first to put down the movement of the seven stars to rhythm and melody."[14] In

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[13] Barbera, 642
[14] Riedweg, 29, citing Hippol. Ref. 1, 2, 2

fact, Pythagoras was said to be the only mortal ever to be able to hear this music of the spheres: “He himself used to listen to the harmonious music of the universe, since he perceived the overall harmony of the spheres and of the stars that move within them, which we do not hear because our nature is limited.”[15] This is the origin of the extensive philosophy and cosmology of the music of the spheres, which will form the core subject of this thesis’ investigation.

There are no extant writings from the man himself, but Pythagoras’ work was greatly publicised in subsequent centuries by the likes of Nicomachus and Hippolytus, quoted above. Modern scholarship emphasises this notion of his posthumous popularity. Haar quotes various third-century CE thinkers who espoused Pythagorean theories, to demonstrate how our knowledge of his thought is derived from his disciples. For example, Aristides Quintilianus stated that Pythagoras’ dying instruction was, “work the monochord,”[16] referring to the sound created by stretched strings of proportionate lengths and the importance of these ratios in all things. It is clear that our understanding of Pythagoras is entirely mediated through other voices, some up to nine centuries after he lived. However, the kernel of his theory of the numerical basis for consonant harmony and the music of the spheres can be traced to ancient sources with proximity to the man himself.

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[15] Riedweg, 29, citing Porph. VPyth. 30 = Nicom. FgrHist 1063 F 1
[16] Haar (1973-4), 39

From Pythagoras to Plato: *Timaeus*

Half a century after Pythagoras' death, Plato was born. Writing mainly in the fourth century BCE, Plato knew and used Pythagoras' work in relation to music, particularly in his *Timaeus*. In this dialogue, which contains a crucial elucidation of his musical thought, Plato explains how the World-Soul, a philosophical model for the physical universe, is created by means of Pythagoras' perfect proportions of musical harmony.[17] This long and complex dialogue contains extensive mathematical calculations to explain how the universe is entirely founded upon harmonic ratios.

Plato's development of Pythagoras' doctrine also constituted the introduction of an ethical aspect. Mathiesen writes of the main innovation of the *Timaeus* as the "investing [of the mathematics] with metaphysical and ethical meaning."[18] This can be seen in the text itself, as Plato implores the reader:

> "by learning to know the harmonies and revolutions of the world, he should bring the intelligent part, according to its pristine nature, into the likeness of that which intelligence discerns, and thereby win the fulfilment of the best life."[19]

Similarly,

> "harmony, whose motions are akin to the revolutions of the soul within us, has been given by the Muses to him whose commerce with them is guided by intelligence, not for the sake of irrational pleasure… but as an ally against the

[17] See Haar (2001), 487. Leask writes, "The 'World-Soul' is essentially musical; it is characterised, Plato insists, by harmony (harmonia) as much as it is by reasoning (36e–37a)." (Leask, 18) Likewise, *The Stanford Encyclopedia of Philosophy* describes the creation of the spherical universe in the *Timaeus* as "the composition of the world's soul out of a harmonically proportionate series".
[18] Mathiesen, 851
[19] Macdonald Cornford, 354, from *Timaeus* 90d

> inward discord that has come into the revolution of the soul, to bring it into order and consonance with itself."[20]

These quotations from the *Timaeus* come after the aforementioned mathematical explanation of the creation of the World-Soul. They show how Plato both wholly accepted and employed Pythagorean harmony of ratios and proportions, but also added to the theory with an ethical approach.

The *Timaeus* had a great influence on subsequent philosophical works. Leask writes of how those writing in light of Plato's work embraced both the theoretical mathematics of the *Timaeus,* and its ethical and behavioural imperatives:

> "the Harmonics [by Ptolemy], built on a treatment of scales and intervals to produce a wide-ranging, Pythagorean, meditation on the cosmic dimensions of music… Aristeides, Calcidius, Macrobius, Proclus and Boethius would all produce musicological investigations that followed fundamentally similar principles (often drawn from direct commentary on the *Timaeus* itself): the cosmos demonstrated a mathematical 'tuning'; and the point of human existence was to become consonant with this musical order."[21]

The Myth of Er

In book X, of Plato's *Republic,* we read the myth of Er. Along with the *Timaeus,* this is a key passage for Plato's theory of cosmic harmony. In this narrative, the hero Er journeys to the afterlife. There follows a description of the universe, with eight concentric whorls,

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[20] Macdonald Cornford, 158, from *Timaeus* 47d
[21] Leask, 23

sets of rotating spheres nested one inside another, representing the orbits of the heavenly bodies. The text itself states: "On the upper surface of each circle is a siren, who goes round with them, hymning a single tone or note. The eight together form one harmony."[22] These sirens then inspire even more music, as "the Fates sit around and 'sing to the Sirens' harmony'."[23] Here, we learn of this second prong of Plato's musical theory of the universe; the idea that there are Sirens and Fates singing or in some way making sound that is consonant, pleasant, or in harmony with one another, as they rotate around concentric spheres.

Synthesis: *Timaeus* and Er, Numerical and Ethical

Many scholars have questioned whether or not these two musical strands of Plato's work, the harmonic ratios of *Timaeus,* and the singing Sirens of the myth of Er, should be read as part of a single doctrine, or not.[24] The *Timaeus* is highly theoretical and likely does not describe earthly sonorous music as we know it, whereas the myth of Er's narrative is more tangible and its music potentially audible. Nevertheless, almost all subsequent platonists read them as two parts of a single musical philosophical worldview.

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[22] *Republic* X. 617, transl. Jowett
[23] Pelosi, 16
[24] For example, see Haar (1973-4), 39

With the question of whether to read Plato's corpus holistically or atomistically, the reader is left with queries such as: Are these treatises referring to audible music, or mathematical suppositions? Andersen and Mathiesen write of Plato's concern with balancing both the theoretical and practical, noting his comment about how "discordant elements [were] made 'commensurable and harmonious by introducing the principle of number.'"[25] In other instances, however, he clearly presented a critique of the Pythagorean school "for their exclusive interest in the numerical properties of musical consonances."[26] Plato treads the middle path, synthesising of numerical and ethical ideas in his writings on music and harmony, as the reader must too.

This is precisely the type of exploration with which I will continue. When Jews encountered Plato's musical philosophy and incorporated it into Jewish tradition, they asked many of the same questions. Should references to the "heavens declaring," as in Psalm 19, be understood as producing audible music, or as a Jewish version of the theoretical harmonics of Pythagoras, and of Plato's *Timaeus*?

Possible Ancient Near Eastern Origins

Before considering the Jewish engagement with these Greek ideas, we must first take into account the very likely possibility that both Greek thought and the biblical tradition

[25] Anderson and Mathieson, 899, citing *Philebus* (25d11-e2)
[26] Anderson and Mathieson, 899

derived from a common source, given their ancient Near Eastern context. While the music of the spheres is generally considered to originate with Pythagoras and Greek music theory, twentieth-century scholars began to establish the idea that "sounding spheres originated much earlier, in Egyptian, perhaps also in Babylonian culture."[27] This helps to explain why we see elements of these ideas in biblical texts, including those that likely pre-date Plato and Pythagoras, such as Isaiah 6 and Psalm 19, which I discuss in Chapters Two and Six respectively.

In some instances, the Greek tradition is willing to grant this ancient Near Eastern context of the ideas. Haar notes the way in which ambiguous near-eastern cosmologies are, from time to time, credited as the origin of the idea of music-producing heavens. He writes of how,

> "The Greeks attributed ideas about a harmonious universe to the 'Chaldeans' or Babylonians, from whom Jewish beliefs about an orderly cosmos hymning the praises of its Creator (expressed in the *Psalms,* the visions of Isaiah and Ezekiel, and the Talmudic treatise *Yoma*) may also have been derived."[28]

Elsewhere Haar specifies where Plutarch refers to the "Chaldeans."[29]

However, despite the fact that both Greek and Jewish ancient sages inherited a common ancient Near Eastern tradition of heavenly harmony, both also show ubiquitous attempts to claim that this thought is inherent in their tradition. Perhaps Pythagoras' disciples attributed these ideas to their heroic, mythic forebear in order to give the theory

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[27] Werner (1941), 288
[28] Haar (2001), 487
[29] Haar (1973-4), 38, referencing *De animae procreatione in timaeo,* section 1028

authenticity and precedence in the Greek tradition. Rabbinic and medieval figures cite biblical verses, such as Psalm 19, in order to "prove" the inherent, organic nature of the music of the spheres in Jewish tradition.

I have surveyed the basic topography of Pythagoras' and Plato's statements on the music of the spheres, and some primary issues pertaining to their content and origins in the literature. Although the Hebrew and Greek texts may have a common urtext, and thus share ideas in common, Philo Judaeus of Alexandria is the first Jewish thinker who clearly and explicitly adopts and accepts this doctrine and seeks to integrate it into Judaism. I turn now to his thought.

Philo: The Jewish Musical Platonist

Mention must be made of Philo, the first-century BCE to first-century CE Jewish Platonist from Alexandria. Anderson and Mathieson state clearly how "Philo conceptualized Jewish religious traditions in terms of Platonic philosophy, especially in his account of the formation of the world."[30] Philo is said to have credited the Chaldeans with discovering cosmic harmony[31] and, in different places throughout his vast corpus of

[30] Anderson and Mathiesen, 901
[31] Haar (1973-4), 38

writing, to have attributed the invention of music to Yuval.[32] Both of these topics - the comparison between Pythagoras and Yuval, and the ancient Near Eastern origins of the music of the spheres - are addressed in this thesis. Haar notes how Philo's *De opificio mundi,* a long treatise on the six days of creation, is filled "with constant allusions to Pythagorean theories, thus stressing what was for him the common parentage of Greek and Jewish cosmology."[33]

In his article, 'Philo's Views on Music,' Louis H. Feldman lays out the many instances in which Philo uses musical imagery. This, to Feldman, is a sign of the extent to which Philo was steeped in Platonic music and philosophy despite, or perhaps in addition to, being a Jewish writer: "The pre-eminence, as we shall see, of musical imagery in Philo may well be due to the similar prominence given by Plato to such imagery."[34] The article continues on as an index of these musical examples from throughout Philo's extensive works; from the existence of music at the time of creation,[35] to the soul as singing hymns

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[32] *De Posteritate Caini* 32.111: "Very beautifully, therefore, is he who inclunes voices, namely Jubal, called 'the father of the psaltery and of the harp,' from a portion of the whole science of music, as has been shown already." (Yonge, 143)
[33] Haar (1973-4), 38
[34] Feldman (2005), 73
[35] *De Plantatione* 30.127-9: "'When' say they, 'the Creator had finished the whole world, he asked of one of his ministers, whether he felt that any thing that was wanting which had not been created… he relied, that every thing ever where was perfect and complete; but that he wished for one thing only, namely for reason, which should be able duly to praise it all… And when the Father had heard what he said he praised it all, and at no distant time produced a race, which should be capable of receiving all learning, and of composing hymns of praise." (Yonge, 201f)

to God;[36] and from a variety of examples demonstrating the value of balance as shown in the harmony between high notes and low notes, to the collective voices of the Israelites at Sinai as a "symphony of voices… [which] exceeded every harmony… [compared with those who do not know Torah as]… a dead and voiceless choir."[37]

Feldman's attempt to prove the centrality of music in Philo's thought, via his use of Greek music theory and Platonic ideas of harmony, makes a persuasive case. Feldman concludes that Philo was somewhat more Greek than Jewish. This is exemplified by the dubious fact that he listened to women's voices (the chorus of the Therapeutae, an Essene-like desert people) despite the rabbinic expression "presumably reflecting an ancient tradition…that a woman's voice is provocative."[38] With the exception of this conservative and anachronistic assessment of the first-century Jewish philosopher, Feldman's article is quite valuable. He provides a wealth of references for how, already in antiquity, Jewish and Greek ideas concerning harmony, God, and the universe, were synthesised.

This sentiment is confirmed by Werner, who writes that, "Philo is the most vigorous advocate of the Pythagorean idea among the earlier Jewish philosophers. To him, the

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[36] *De Somniis* 1.43.256: "Moreover you will engrave hymns suited to your sacred subject upon pillars, that you may not only speak fluently, but may also sing musically the virtues of the living God." (Yonge, 387)
[37] Feldman (2005), 79, referring to *De Confisione Linguarum* 13. 58: "and most admirable of all is that common one which exceeds all the harmonies of the others, according to which the whole people is represented as saying with one accord, 'All the things which God has spoken, we will obey and do.'" (Yonge, 239)
[38] Feldman (2005), 88

heavens are the archetype for all musical instruments. The purpose of the musical structure of the cosmos is to provide the accompaniment for hymns of praise. The seven planets are compared to the seven strings of the lyre."[39] It is clear that Philo was a keen advocate of the music of the spheres, in keeping with his general adherence to Platonic principles.

Philo had little impact on the subsequent development of Jewish thought, having been preserved mainly in the literature of the Church Fathers. He was not well received by contemporary proto-Jewish groups, "'The sophists of literalness,' as he calls them ('De Somniis,' i. 16-17), 'opened their eyes superciliously' when he explained to them the marvels of his exegesis."[40] As such, the rabbinic tradition did not preserve Philo's writings and he was not known in the Jewish intellectual world until the sixteenth century when he was rediscovered by Jewish Italian Renaissance thinkers, such as Azariah dei Rossi in his *Me'or Einayim*.[41] Nonetheless, in a discussion of the impact of Platonic ideas on Jewish philosophy, Philo deserves this brief mention for his role in synthesising hellenistic and hebraic thought specifically concerning the music of the spheres, despite its lack of impact on the subsequent centuries of Jewish writing. Nevertheless, Greek ideas about music continue to reverberate throughout the rabbinic and medieval Jewish textual tradition.

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[39] Werner (1941), 290
[40] Toy, Siegfried, and Lauterbach, 'Philo Judaeus' in *Jewish Encyclopaedia* (1906)
[41] N. G. Cohen, 34

Chapter Two: Who Discovered Music? Yuval vs. Pythagoras

The first category that I have identified with regard to Jewish text's engagement with Greek musical thought, concerns the very origins of music. As I set out above, Pythagoras is broadly considered the inventor of music theory, with the myth of his discovery of the proportions that define consonance through hearing the sounds of various sized anvils being struck. However, this story of Pythagoras walking past a blacksmith and discerning how harmony works has raised the suspicions of some as to whether the Greek figure should be uniquely credited with the discovery. Both Christian and Jewish sources set Pythagoras in comparison with Yuval (alternate transliterated spelling- "Jubal"), one of the sons of Lamech and Adah, about whom we read in Genesis 4.19-22:

> וַיִּקַּח־לוֹ לֶמֶךְ שְׁתֵּי נָשִׁים שֵׁם הָאַחַת עָדָה וְשֵׁם הַשֵּׁנִית צִלָּה: וַתֵּלֶד עָדָה אֶת־יָבָל הוּא הָיָה אֲבִי יֹשֵׁב אֹהֶל וּמִקְנֶה: וְשֵׁם אָחִיו יוּבָל הוּא הָיָה אֲבִי כָּל־תֹּפֵשׂ כִּנּוֹר וְעוּגָב: וְצִלָּה גַם־הִוא יָלְדָה אֶת־תּוּבַל קַיִן לֹטֵשׁ כָּל־חֹרֵשׁ נְחֹשֶׁת וּבַרְזֶל וַאֲחוֹת תּוּבַל־קַיִן נַעֲמָה׃
>
> "Lamech took himself two wives: the name of one was Adah, and the name of the other was Zillah. Adah bore Jabal; he was the ancestor of those who dwell in tents and amidst herds. And the name of his brother was Jubal; he was the ancestor of all who play the lyre and the pope. As for Zillah, she bore Tubal-cain, who forged all implements of copper and iron. And the sister of Tubal-cain was Naamah."[42]

This prediluvian biblical figure, the father of all musicians, with a metalsmith for a half-brother unsurprisingly invites comparisons with the Greek myth. For example,

[42] 1985/1999 JPS translation

Christian parallels of this topic are described by McKinnon[43] who discusses the attribution of the discovery to the two ancient figures from early Church Fathers through to the Enlightenment. Cohen[44] summarises two ways in which Medieval Christian writers incorporated the biblical and Greek characters. Some attempted to show how they were the same person (either Pythagoras and Yuval; or Pythagoras, Yuval, and Tuval-Cain), literally synthesising the stories. Second, a number of thinkers proposed the idea a two-stage discovery of music. Yuval, in the early eras of creation,[45] pre-flood, uncovered the rudiments of music, and then Pythagoras refined the harmonic system with his complex mathematics of ratios.

As for Jewish writing on this matter, one important source comes from the eleventh-century Granadan poet and philosopher, Moses Ibn Ezra. Shiloah describes how

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[43] McKinnon, J. W. 'Jubal vel Pythagoras, quis sit inventor musicae?' in *MQ* 64 (1978), 1-28

[44] Cohen, J. 'Jubal in the Middle Ages' in *Yuval Studies of the Jewish Music Research Centre* 3 (Jerusalem: the Magnes Press, Hebrew University, 1974): 83-99

[45] There is an interesting variant to this in the Jewish mystical tradition. In his 2009 precis article 'Music Subjects in the Zohar,' Shiloah includes a passage (number 193 on page 136 of "נושאי מוסיקה בזהר" (Jerusalem: Yuval Monograph Series, 1977)) about Yuval. He comments on the piece: "The text makes the important distinction between vulgar worldly music and music for divine worship. It is possible that the origin of the distinction can be found in the idea that everything which existed potentially before the creation of man became actual with his creation, including songs and praises (passage no. 22)... Music created contemporaneously with the world, which is for divine worship, is distinguished from music created by man (since Jubal), which is associated with worldly vanities." (Shiloah (2009), 133) Here, Yuval is not the original inventor of music, to be followed later by a Pythagorean revision and refinement. Rather, Yuval represents the later, human development which came after the divinely sanctioned music of creation.

"The Bible as the original source of the science of music also found expression in the *Book of the Garden.*"[46] Part of the fourth passage of this poetic-philosophic treatise reads:

> "How marvellous is it that this science came into being with the beginning of creation, in the first centuries when human life was long and people invented these sciences of noble purpose, as it is said about its inventor Yuval: 'He was the father of all such as handle *k̲innôr* [lyre?] and *'ûgav* [pipe?]' [Gen. 4, 21]."[47]

While Moses Ibn Ezra does not explicitly mention Pythagoras, the intent of his writing is clearly to assert that the science of music has its origins in biblical tradition and not in any other ancient community or myth. Shiloah writes of how this particular section of the treatise "is preceded and followed by biblical references whose aim is obviously to emphasize the importance of the Bible as a major source for all practical and theoretical achievements. So, he first mentions Yuval 'the initiator of this noble art' [see Gen. 4, 21]."[48] Moses Ibn Ezra's sentiment is better understood when one considers the Arabic context in which he wrote. He knew of writings such as *The Epistle of the Brothers,* which states that it was "the philosophers" (i.e. Greeks) who invented the science of

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[46] Shiloah (1995), 59. Moses Ibn Ezra's work was originally written in Arabic under the title *"Maqālat al-ḥadīqah",* and was translated into Hebrew by Judah al-Harizi in the late twelfth to early thirteenth century. There is one extant manuscript of "*Arugat habosem"* (the Hebrew title literally translates as "a bed of spices").

[47] Adler, 161

[48] Shiloah (1982), 217

music.[49] As such, it is not an unfounded assumption to see this text concerning Yuval as the inventor of music as a direct opposition to the Pythagorean theory.[50]

The most explicit reference to this struggle between Pythagoras and Yuval from a Jewish thinker appears in the sermon of Judah Moscato, *Higayon B'chinor* (translated by Miletto and Veltri as "Sounds for Contemplation on a Lyre"). Moscato lived and wrote in sixteenth century Italy, publishing many lengthy sermons, including *Higayon B'chinor* in a collection called "*N'futsot Y'hudah*" (Venice: Giovanni di Gara, 1589). After Moscato begins the previous sentence, "The first famed authorities in the science of music," i.e. the Greeks, the pertinent excerpt states:

> "They attributed the beginnings of the way of knowing it [consonance] to one of their early scholars, Pythagoras by name. They said of him that when he heard the sound of hammers banging on an anvil release a pitch from out an iron potter's shop, he wished to ascertain by experimentation the principle behind that production of pitches… Yet those who attribute this invention to him have spread a lie, for, by the Lord's firm testimony, Jubal was the father of all those handling a 'kinnor' and an 'ugav.' But perhaps the invention of the science was in the way reported about Tubal-cain, his [half]-brother, an instructor of all metalworkers in brass and iron."[51]

Moscato states unequivocally that those who believe the legend about Pythagoras "have spread a lie," since the divinely-sanctioned Scripture clearly names Yuval as the source

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[49] Simon, 272. Footnote 80 discusses Pythagoras as the father of music: "There were various opinions among the Arabs on this subject. The Faithful Brothers - whose approach to the subject was not at all chauvinistic and whose *Epistle on Music* was known, as has been said, to Moses Ibn Ezra - attribute the invention of musical instruments and the development of musical theory to 'philosophers' (see *Epistle,* pp. 15, 32-33, 40)."

[50] "In '*Arugat ha-Bośem* he [M Ibn Ezra] endeavors to prove that it was not Pythagoras who was the father of music, as the Greeks believed, but rather Jubal." (Simon, 174)

[51] Miletto and Veltri (2011), 65f

of musical contemplations and activities. However, he also identifies the similarity between Yuval's half-brother and the Pythagorean myth, as Shiloah points out:

> "He acknowledges that the initial discovery may have been as described in the story of the hammer and anvil, but maintains that the reference is to Jubal, whose brother Tubal-cain was a smith, rather than to Pythagoras. Thus Moscato creates a harmonious combination of two traditions - one from the pagan world and the other from the world of monotheism."[52]

In this way, Moscato employs the same methodology as the medieval Christian writers who fall into Cohen's first category, the synthesisers of the two characters' mythologies into one ancient persona. Shiloah describes Moscato's statement as "an apologetic reading of the tradition,"[53] in that he uses biblical material to prove the superiority of the Jewish narrative over the Greek. I certainly appreciate this assessment of his writing, especially given Moscato's Christian European surroundings in which it was common to bring biblical defenses to authenticate Jewish positions regarding all manner of topics.

While only a limited number of Jewish sources mention Pythagoras explicitly, Yuval appears as the inventor or originator of music with substantially more frequency. There is a clear desire to use Hebrew Bible verses as support for the Jewish, Israelite, or biblical claim to have discovered music and harmony, both from early Church Fathers and Christian medieval literature, and among some Jewish sages from similar centuries. Both Moses Ibn Ezra and Moscato present examples of thinkers who expounded on this question of the origins of music, from the Jewish medieval and Early Modern textual traditions.

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[52] Shiloah (1995), 61
[53] Shiloah (2017), 54

Chapter Three: Sirens and Angels Hymning on High

My second category concerns the music produced by heavenly beings. In Plato's myth of Er, we find the image of the singing Sirens, rotating on concentric heavenly spheres. Plato's hymning supernatural beings are paralleled in Jewish thought by way of *mal'achim* or *hayot ha-kodesh* (angels or celestial beings), which sing praises to God on high. Jewish angelology is a well-researched scholarly area of study. I will present just a small number of examples, most relevant to this thesis.

The biblical visions of Ezekiel and Isaiah constitute the main scriptural sources for this topic. These texts exemplify how the song of heavenly beings on high was present in Jewish thought of antiquity, just as the myth of Er does the same for Greek thought. Plato lived in the fourth century BCE, while this section of Isaiah may have its origins in the eighth century BCE, and Ezekiel lived in the sixth century BCE. This facet of the music of the heavens was clearly of interest to both ancient textual traditions, and throughout the ancient Near East.

Ezekiel 1.24-25, describes the sound that accompanies the the prophet's angelic vision:

> וָאֶשְׁמַע אֶת־קוֹל כַּנְפֵיהֶם כְּקוֹל מַיִם רַבִּים כְּקוֹל־שַׁדַּי בְּלֶכְתָּם קוֹל הֲמֻלָּה כְּקוֹל מַחֲנֶה בְּעָמְדָם תִּרַפֶּינָה כַנְפֵיהֶן: וַיְהִי־קוֹל מֵעַל לָרָקִיעַ אֲשֶׁר עַל־רֹאשָׁם
>
> "When they moved, I could hear the sound of their wings like the sound of mighty waters, like the sound of Shaddai, a tumult like the din of an army. When they

> stood still, they would let their wings droop. From above the expanse over their heads came a sound."[54]

The book of Isaiah describes another angelic vision, also including a sonorous element, in 6.2-3:

> שְׂרָפִים עֹמְדִים מִמַּעַל לוֹ... וְקָרָא זֶה אֶל־זֶה וְאָמַר קָדוֹשׁ קָדוֹשׁ קָדוֹשׁ יְהוָה צְבָאוֹת מְלֹא כָל־הָאָרֶץ כְּבוֹדוֹ׃

> "Seraphs stood in attendance of Him… And one would call to the other, 'Holy, holy, holy! The Lord of Hosts! His presence fills all the earth!'"[55]

Liturgically, Isaiah 6.3 becomes famously recited as part of the *K'dushah,* appearing in Jewish prayer services at least once daily (more on Shabbat and festivals). The angel's triplicate call of, "holy" (קדוש) is used with various liturgical framings and responses. These phrases used to introduce the biblical quotation convey the sense that the congregation is invited to sing and praise, just as the angels do in the heavens. The way in which the heavenly harmony is believed to be an example for music on earth is reflected in other aspects of the music of the spheres (see Chapter Four). The weekday morning service reads, "נְקַדֵּשׁ אֶת שִׁמְךָ בָּעוֹלָם. כְּשֵׁם שֶׁמַּקְדִּישִׁים אותו בִּשְׁמֵי מָרוֹם" ("Let us sanctify your name on earth as it is sanctified in the heavens on high."[56]) The *K'dushah D'yotseir*, in the early sections of the Shabbat service, contains an elaborate introduction to the angelic call, emphasising their singing:

> וְכֻלָּם פּוֹתְחִים אֶת פִּיהֶם בִּקְדֻשָּׁה וּבְטָהֳרָה. בְּשִׁירָה וּבְזִמְרָה. וּמְבָרְכִים וּמְשַׁבְּחִים וּמְפָאֲרִים וּמַעֲרִיצִים וּמַקְדִּישִׁים וּמַמְלִיכִים: אֶת שֵׁם הָאֵל.... וְנוֹתְנִים רְשׁוּת זֶה לָזֶה

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[54] 1985/1999 JPS translation. This verse (Ezekiel 1.24) will appear below in A Ibn Ezra's commentary on Psalm 93.4 (see pages 93-95).
[55] 1985/1999 JPS translation
[56] Hoffman (2007), 93

לְהַקְדִּישׁ לְיוֹצְרָם בְּנַחַת רוּחַ. בִּשְׂפָה בְרוּרָה וּבִנְעִימָה. קְדֻשָּׁה כֻּלָּם כְּאֶחָד. עונים וְאוֹמְרִים בְּיִרְאָה

"All open their mouths in holiness and purity, / with song and psalm, / and bless, praise, glorify, / revere, sanctify and declare the sovereignty of- / The name of [God]... / granting permission to one another / to sanctify the One who formed them, in serene spirit, / pure speech and sweet melody. / All, as one, proclaim His holiness, / saying in awe:"[57]

The liturgy of the *K'dushah* has elicited extensive poetic compositions throughout the ages. The *piyyut* for the *K'dushah D'yotseir, Eil Adon*, originated between the third and eighth centuries CE amongst mystics of the *Yordei Merkavah* school.[58] It describes the angels' singing:

שֶׁבַח נותְנִים לו כָּל צְבָא מָרום. תִּפְאֶרֶת וּגְדֻלָּה שרָפִים וְאופַנִּים וְחַיות הַקדֶשׁ:

"All hosts on high sing praise to God. Worlds unseen give God glory and greatness."[59]

Werner cites a *piyyut* written by Moses Ibn Ezra for the *K'dushah* of the *shaharit* service, which similarly describes the angels singing. The brief line uses two phrases to describe the angels: מלאכת צבא ("angelic host") and שוכני שמים ("those who dwell in the heavens"), and Moses Ibn Ezra makes their sonorous activity clear, with three words, one after the next: בזמר ("in song"), יענו ("they answer"), and בקול ("with voice", "with sound", or "aloud"):

קדושה לר׳ ה׳ מלאכת צבא שוכני שמים בזמר יענו בקול.[60]

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[57] Sacks, 464
[58] According to David Ellenson in Hoffman (2007), 83
[59] Magonet, 208
[60] Werner (1941), 290 in footnote 132

Apart from these prophetic visions and the liturgy that they inspired, there are a number of examples in the Psalter, in which the heavenly host expresses praise. The verbs used to describe the sound produced vary, for example הלל in Psalm 148.2 and ברך in Psalm 103.20. Despite this range of vocabulary, the psalms clearly discuss angelic song in each instance. The whole notion of heavenly beings singing on high is well-documented in Scripture and liturgy.

In the Talmud, there is a lengthy discussion of the angels singing praises to God, in comparison with people's recitation of the *K'dushah,* in BT Chullin 91b-92a:

> מסייע ליה לרב חננאל אמר רב דאמר רב חננאל אמר רב שלש כתות של מלאכי השרת אומרות שירה בכל יום אחת אומרת קדוש ואחת אומרת קדוש ואחת אומרת קדוש ה' צבאות...
> ואין מה"ש אומרים שירה למעלה עד שיאמרו ישראל למטה שנאמר (איוב לח, ז) ברן יחד כוכבי בקר והדר ויריעו כל בני אלהים

> "The Gemara comments: This **supports** the opinion **of Rav Ḥananel** when he related what **Rav said. As Rav Ḥananel said** that **Rav said: Three groups of ministering angels recite a song every day** from the verse "Holy, holy, holy is the Lord"; **one says: "Holy," and** another **one says: "Holy," and** another **one says: "Holy is the Lord of hosts;** the whole earth is full of His glory" (Isaiah 6:3)…
> **And the ministering angels do not recite** their **song above until the Jewish people recite** their song **below,** on earth, **as it is stated: "When the morning stars sang together"** (Job 38:7), referring to the Jewish people, who are compared to stars; **and** only **then** does the verse state: **"And all the sons of God shouted for joy,"** which is a reference to the angels."[61]

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[61] Translation from The William Davidson digital edition of the Koren Noé Talmud (https://www.sefaria.org/Chullin.91b?lang=bi). Another Talmudic example of angelic song can be found in BT Megillah 10b. There too, the topic of discussion is not whether or not the angels produce such harmonious sounds. The angels' singing, a fact to the rabbis, appears as an object of divine argument. After the death of the Egyptian army in the wake of the Israelites' Exodus, the angels want to sing, but are castigated by God for

This excerpt shows how the rabbis of the Talmud did not question the fact that the angels sing. It is a commonly held assumption. Rather, they argue at length about the relationship between the timing and form of the angels' singing as compared to that of people. Here we see a number of themes that are central to the music of the spheres: the importance of heavenly music, here in the form of angelic song, as it relates to music on earth, and the coherence between the terrestrial and the celestial. The reference to Job 38.7 here is not surprising, given the ubiquity of this verse in texts referring to the music of the spheres. See, for example, page 96 for Abraham Ibn Ezra's surprising comment on the phrase בני אלהים.

In his chapter, 'Theory of Heavenly Harmony and Angelic Song in Jewish and Islamic Sources,' published posthumously, Shiloah specifically traces this stream of ancient Greek thought from texts of antiquity, through the medieval and premodern periods. He highlights the connection between angelic song and the theory of the music of the spheres.[62] I will give two examples from Shiloah's chapter which concern this present discussion, of angelic song and heavenly harmony in Jewish texts.

The Dead Sea Scrolls of Qumran, discovered in a cave in 1946-7, include texts of many genres and topics. Amongst them, Shiloah discusses one particular tractate concerning

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celebrating the drowning of humans. There was no doubt in the minds of the rabbinic sages of the Talmud that in general it was the way of the the angels to sing praise to God in the heavens.

[62] Pelosi (2018), xi

songs for the Sabbath service: "The collection of hymns entitled Angelic songs, which is included in the *Serekh shirot 'olat ha-shabbat*, describes the angels singing before the throne of the Lord. As in some ancient Greek sources, we encounter here a fusion of angelic song and the music of the celestial spheres."[63] Shiloah points out the connection between the specific image of the angels singing, and the way in which this fits into the broader topic of the music of the spheres.

Abraham Ibn Ezra demonstrates his support of the idea of angelic song in his commentary to the psalms. Shiloah writes here of a different genre of A. Ibn Ezra's work, a philosophical cosmological exploration through the lens of an epistle, *Hayy ben Mekitz*:

> "This work tells the story of Hayy ben Mekitz's journey from the first sublunary world via the second 'middle' world of the cosmic spheres up to the third… Following ancient Greek sources, Ibn Ezrā's harmonious world consists of nine concentric heavenly spheres: seven planetary spheres, followed by the eighth sphere of the fixed stars, and the ninth or outer sphere of the zodiac. The spheres are set in motion by angels who sing continuously about the Glory of the Creator. However, Ibn Ezrā adds that their singing cannot be heard by the human ear, thus recalling the ancient debate about the audibility of the music of the spheres."[64]

The debate which Shiloah references will appear throughout the sources in this thesis, with the core question as to whether the music of the spheres is or ever has been audible. However, despite this important question, Abraham Ibn Ezra clearly refers to angelic song and its relationship to the harmonious spheres of heaven. He particularly connects this with "the Glory of the Creator", which is a ubiquitous theme throughout the *K'dushah* liturgy, as a result of the reference to כבודו in Isaiah 6.3.

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[63] Shiloah (2018), 46
[64] Shiloah (2018), 51f

There is a great deal more that one could say about the image of angels singing in Jewish literature. However, since many others have written at length on this topic, I will not address it further here. Suffice to say that there is clearly a connection between Plato's harmonious Sirens sitting on the spheres of heaven in the myth of Er, and the trope throughout biblical sources and their exegesis of similar angelic song. Jewish angelology, and its musical facets, is intrinsically linked to the music of the spheres.

Chapter Four: The Ethical and Spiritual Implications-

Music's Impact on the Soul

Already in Pythagoras' and Plato's writing, there are frequent mentions of the human experience of heavenly harmony. In subsequent generations, their disciples expanded the application of the music of the spheres to earthly phenomena such as the four elements, plants and trees, and the human soul.[65] For example, Aristides Quintilianus described the way in which "man, the microcosm, shares in this harmony"[66] and Proclus, a fifth-century CE neo-Platonist spoke of "the doctrine of the vehicle of the soul,"[67] using the soul and its primordial relationship to the celestial bodies as the conduit for the heavenly music.

This basic concept that heavenly harmony is paralleled on earth, and within each person, was transformed, through Ptolemy's *Harmonics* in Greek into Boethius' *De musica* in Latin. It became the central tenet of this sixth-century CE Roman senator's work, giving rise to the categories of *musica mundana* (the music created by the motion of the heavenly spheres), *musica humana* (the harmony with with the disparate parts of the soul and body are joined together in consonance, under the influence of *musica mundana*), and *musica instrumentalis* (the music of earthly human-made instruments).[68] These ideas

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[65] "The idea of a similarity between the heavenly music and the harmony of the human soul is highly influential in Pythagorean and Platonic theories." (Pelosi, 19)
[66] Haar (1973-4), 40
[67] Pelosi, 24
[68] "Principio igitur de musica disserenti, illud interim dicendum videtur, quot musicae genera ab ejus studiosis comprehensa esse noverimus. Sunt autem tria. Et prima quidem mundana est; secunda vero humana; tertia quae in quibusdam constituta est instrumentis,

continue through to the Renaissance. The connection between the soul and heavenly music, *musica humana,* is so prolific that it can be found in works of many genres. Shakespeare's Lorenzo invokes three of the categories of this thesis - the music of the heavens, angelic song, and the soul's internalising of this harmony - along with the debate surrounding the audibility of the music, as he declares :

"How sweet the moonlight sleeps upon this bank!
Here will we sit and let the sounds of music
Creep in our ears: soft stillness and the night
Become the touches of sweet harmony,
Sit, Jessica: look how the floor of heaven
Is thick inlaid with patines of bright gold:
There's not the smallest orb which thou behold'st
But in his motion like an angel sings,
Still quiring to the young-eyed cherubins;
Such harmony is in immortal souls;
But whilst this muddy vesture of decay
Doth grossly close it in, we cannot hear it."
(*The Merchant of Venice* V.i.54-65)

The notion of music affecting the soul, emotions, and behaviour of human beings appears in rabbinic literature, for example in a story about the biblical King David in BT B'rachot 3b:

דוד סימנא הוה ליה דאמר רב אחא בר ביזנא אמר רבי שמעון חסידא כנור היה תלוי למעלה ממטתו של דוד וכיון שהגיע חצות לילה בא רוח צפונית ונושבת בו ומנגן מאליו מיד היה עומד ועוסק בתורה עד שעלה עמוד השחר

"David had a sign indicating when **it was midnight.** As **Rav Aḥa bar Bizna said** that **Rabbi Shimon Ḥasida said: A lyre hung over David's bed, and once midnight arrived, the northern** midnight **wind would come and** cause **the lyre**

ut in cithara vel in tibiis, caeterisque quae cantilenae famulantur." Full original Latin text available in (ed.) Migne, J. P. *Patrologia cursus completus, series latina* (Paris: Garnier, 1844-1904)

> **to play on its own.** David **would immediately rise** from his bed **and study Torah until the first rays of dawn.**"[69]

This excerpt, while not mentioning the music of the spheres itself, is frequently cited by Jewish scholars of subsequent centuries in relation to this topic, for example Isaac Arama in *Niggun Olam,* and Judah Moscato in *Higayon B'chinor*. The talmudic text comes after a discussion of David's trouble sleeping, and his restlessness at night. The magical lyre, playing of its own accord with the help of the midnight wind, impacts David's sleep, mood, and actions.

A number of medieval Jewish texts describe how specifically the music of the spheres enters the human soul, and drives human feeling and behaviour. The first, and most significant of these, which I will discuss, is Sa'adia Ga'on. I will then offer a small number of similar examples, before highlighting Isaac Arama's *Niggun Olam*.

In treatise 10, chapter 18 of Sa'adia Ga'on's "Book of Beliefs and Opinions" (written in Arabic as *Kitāb al-Amānāt wa l-Iʿtiqādāt,* translated by Ibn Tibbon as *Seifer Emunot V'de'ot*), the tenth-century philosopher includes a passage about music.[70] The main point

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[69] Steinsaltz (2012), 17

[70] Farmer writes at length about this text, comparing various translations, and elucidating the extensive challenges in attempting to decipher its meaning. There is debate surrounding the Arabic musical terminology Sa'adia uses and its subsequent translation. Farmer is insistent that Sa'adia's scheme applies only to rhythmic modes, and not to melody. He discusses the "conflicting nomenclature of Sa'adyah which not only misled Ibn Tibbon, his best known translator into Hebrew, but contributed to the misconception of the passage by both Orientalists and musicographers down to the present time." (Farmer, 27, citing Malter, 369). The problematic words include *tanhīm,* meaning "mode" or "tone", and *nahgamāt* (notes) as compared with *naqarāt* (beats). The term *laḥn* is used by contemporaneous Arabic writers to apply to both rhythm and melody,

that Sa'adia presents is as follows: a single sound, beat, rhythm, or tone leads to a kind of monotony which is "injurious to the soul"[71] whereas combinations of variously pitched sounds or different beats create the opposite effect. He describes eight different modes (it is unclear if these are rhythmic or melodic) which were commonly used, each with a different ethos. "Ethos" is used here in the Greek philosophical sense of the word, that is, the power that music has to influence the hearers' behaviours and emotions. Farmer notes how Sa'adia was clearly influenced by the Arabic philosopher Al-Kindi, who was well-read in Platonic and neo-Platonic thought.

In subsequent generations, we see similar statements from Jewish philosophers influenced by Arabic writings. For example, Shem-Tov ben Yosef ibn Falaqera in thirteenth-century Spain wrote *Seifer Hamevakesh,* which exhibits close parallels with the tenth century "Epistle of Music" from the Brotherhood of Purity (*Ikhan al-Safa*):

> The Seeker asks "And why have they said that one needs four strings, each thicker than the other, so that there will be a noble proportion between them?" He is answered, "they have done thus so that the sound of each one will be stronger than the humors (mood) of the other four."[72]

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according to Simon (49, footnote 44). Farmer does give Ibn Tibbon some credit as he writes that "there were and are reasonable grounds for the assumption" (Farmer, 33) that Sa'adia wrote about melody. Shiloah similarly states the issues, as he writes, "Thus three innocuous terms manage to create great confusion; even after their meaning has presumably been deciphered, it is not at all certain that the idea of the sentence as a whole has become comprehensible." (Shiloah (1995), 54)

[71] Farmer, 14

[72] Shiloah (1995), 57

The theme of strings of different thicknesses relating to different moods or parts of the body is reminiscent of Pythagoras' proportionate strings, as the basis for the whole doctrine of the music of the spheres.

The eleventh- to twelfth- century Spanish poet and philosopher Judah Halevy also spoke to the Pythagorean concept: "Music was then (in David's time) a perfect art. It wielded that influence upon the soul which we attribute to it, namely that of moving the soul from one mood to another."[73] This mention of David refers to BT B'rachot 3b-4a, as discussed above.

Maimonides, writing from his medical knowledge, recommends how music can be used for therapeutic means. Farmer refers to how, in chapter five of the *Sh'monah P'rakim,* "he approves the 'happy medium' of Platonic teaching in the judicious gratification of the senses, and recommends 'listening to stringed and wind instrumental music' for the purpose of 'quickening the soul'."[74] This statement is both of medical and philosophical import. Maimonides' prohibitions and allowances concerning certain types of music have been studied in depth,[75] and further repetition here is not necessary.

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[73] Werner (1941), 265, citing Yehuda Halevy, *Cusari,* (ed.) Cassel, II ¶ 65 and IV ¶ 25
[74] Farmer, 14
[75] For example, see Kraemer, J. L. *Maimonides: The Life and World of One of Civilization's Greatest Minds* (Doubleday, 2008) 305-306. Farmer, H. G. 'Maimonides on Listening to Music. *The Journal of the Royal Asiatic Society of Great Britain and Ireland* No. 4 (Oct., 1933) 867-884. Cohen, B. 'The Responsum of Maimonides Concerning Music' *Jewish Music Journal* Vol. 2, issue 2 (1935) 3-8.

Moses Ibn Ezra's musical passage in "*Arugat Habosem*", also explores music's impact on people. As Shiloah writes, "Since the main purpose of music is to exert a moralising effect on the soul, Ibn Ezra here reports a sequence of nine sayings by philosophers, upholding the ethical power of music."[76] One of those sayings comes from Plato:

> "If the rational soul denudes itself from corporal pleasure, rejects the natural delights, removing itself from the material rust, it becomes enthusiastic each time it hears solemn and serious melodies, remembering its spiritual world, which is sublime and most dignified, and yearning to reach it."[77]

After the list of nine sayings, Moses Ibn Ezra concludes the passage with the following statement: "How wonderful are these geometrical tools which help in tempering the manner of the soul, and the understanding of those remote meanings made possible thanks to this medicine of the soul."[78] Clearly his interest in music, and its nature as a "geometrical tool" (reminiscent to me of Pythagoras' mathematics) is focused on the way in which different kinds of melodies and harmonies can affect the individual's emotional world.

Finally, the fifteenth-century Isaac Arama expounded on the notion of the harmony of the human being ("the microcosm") in relation to the harmony of the universe ("the macrocosm"). He discusses this idea under the heading *Niggun Olam* ("Melody of the Universe"), within his philosophical homily on the weekly lection of Noah, which appears in his collection *Akeidat Yitzhak*:

> "If one conceives of man as a microcosm and of nature as the macrocosm, the former exercises profound influence on the workings of the latter. Perversion in

[76] Shiloah (1982), 216
[77] Adler, 162.
[78] Adler, 163.

> man, ultimately results in major malfunctions in the cosmic forces controlling the universe.
>
> One can conceive of the universe as an orchestra in which each instrument plays its assigned part. Should an instrument fail consistently, the disharmony created will disable the entire orchestra. Perhaps the comment by our sages about David's harp starting to play all by itself, (Berachot 3) may be understood simply. When man does his share, the entire orchestra comes alive and worships its Maker…
>
> The very name of the musical instrument known as *aley assor,* the ten stringed one, may hint at the ten spheres of creation, which when working together in harmony, represent the universe in its most perfect condition."[79]

Isaac Arama refers to the passage from BT B'rachot 3b-4a, as an example of how music can impact upon the soul and therefore a person's behaviour. The particular behaviour in which Arama is interested is adherence to the divinely instructed commandments, which is what leads him to include this passage in his discussion of the flood. Shiloah articulates Arama's position, writing,

> "The perfection of the world results from the tuning of the different strings of the minor instrument (nature on earth) in perfect consonance with the strings of the macrocosm, which is described as a large instrument that is tuned according to the musical laws of a higher metaphysical realm. According to him, the harmonic proportion between both instruments can be achieved through observance of the laws of the Torah."[80]

The diluvian disaster occured, in his view, as a result of disharmonious, sinful behaviour. Being more in tune with the macrocosmic consonance of the heavens will therefore lead to a more stable and sin-free world.

These texts represent just some of the sources that deal with the idea that the music of the spheres can enter an individual's body, soul, and emotional-spiritual realm. Jewish

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[79] Munk, 67f
[80] Shiloah (2018), 52

thinkers who contemplated the Greek doctrine believed that this music had a profound impact on humans. From Sa'adia's adoption of the surrounding Arabic thought, to Moses Ibn Ezra's direct quotations from Plato, and Arama's metaphorical, somewhat esoteric exegesis on the weekly lection; the music of the spheres exists in Jewish textual tradition not only in the heavens, but in the individual as well.

Chapter Five: *Kol Adonai*- The Music of the Spheres and God

The questions of how God and Jewish theological concerns intersect with the music of the spheres, and how Jewish thinkers include their particular theological suppositions with regard to heavenly harmony, arise throughout this thesis. For example, in Chapter Six both Psalm 93.4 and Ezekiel 1.24 include the idea of sound related to God. The angels frequently appear to be praising God, and, in midrashim that quote Psalm 19, God commands the heavens to speak, sing, and praise God's glory and creation. Concerning the ethical implications of the music of the spheres in Chapter Four, Isaac Arama claims that adhering to world harmony is in accordance with divine will. However, there is a great deal more to explore in this area. What might be the Jewish theological take on the music of the spheres?

The phrase קול יהוה, the voice or sound of God, presents an obvious place to begin an exploration of this topic. A number of interpretive texts focus on Psalm 29 with its many repetitions of the phrase as a possible mediation on the idea of God's voice as an element of the music of the spheres.

Classical rabbinic midrashim connect Psalm 29 to the lacuna in the biblical text in Exodus surrounding the nature of God's voice during revelation at Sinai. For example, Mekhilta d'Rabbi Ishmael 20.15 connects verses four and seven of the psalm to God's diverse and manifold voice during revelation at Sinai (Exodus 20.15). Also, Sifrei

D'varim 343.7 uses verses three and eleven of the same psalm with reference to the giving of Torah (allegorically understood to be symbolised by the word *oz*) and God's voice.

Yet more midrashim discuss how God communicated the revelation at Sinai (Exodus 19.16), describing the way in which God's words were heard in seventy languages, or voices, simultaneously. This idea is conveyed in BT Sotah 32a, BT Shabbat 88b, and Exodus Rabbah 5.9. Exodus Rabbah 28.4 continues this sentiment, in expounding on the Ten Commandments and specifically Exodus 20.1. This midrash uses the phrase, "הוא עושה הכל בבת אחד" "He (God) does everything at once", describing how various divine actions and speech occurs in a single instance. The Sinaitic revelation is one example of this multivocal, harmonious divine utterance.

The thirteenth-century Spanish neo-Platonist-mystic Ibn Latif connects Psalm 29's seven mentions of קול יהוה and a version of the theory of the music of the spheres:

> "The science of music envisages eight melodic modes which differ from each other because of their expansion and contraction… The eighth mode functions as a genus which comprehends the other seven modes… The Psalmist has cryptically alluded to this by means of the number seven in the repetition of the term 'God's Voice'… while the phrase 'All say Glory' (Ps. 29.9) refers to the eighth mode which comprises all the others."[81]

Ibn Latif identifies the seven repetitions of the key phrase as representing the seven modes, concluded by a hint towards the eighth musical mode with the phrase כולו אומר כבוד in the psalm. Ibn Latif does not elaborate on this theory, claiming that it is a mystical

[81] Werner (1948), 5. Ellipses appear in Werner's quoting of the source.

concept that cannot be spoken of at length. However, it can be deduced that he attempted to incorporate an aspect of the music of the spheres into a theological model, albeit esoterically.

Finally, Judah Moscato, in *Higayon B'chinor,* explains in great detail how every interval of consonance is contained within God's name itself; the Tetragrammaton. As a result of the mathematical ratios implied by the letters of God's name, therefore, he concludes, perfect harmony and unity are inherent in God's presence. God as the source or centre of cosmic harmony is not inherent in Greek thought. However, we might hear the echoes of Platonic and Pythagorean ideals in the theological musings of this premodern Italian rabbi. The key passage from the sermon reads:

> "We have reason to believe the existence of the pitches of music in Him, may He be blessed, in perfect unity, for all forms will be united in Him because of His being the Law for all beings among creatures above and below. Let the special name of His essence [YHWH] come and declare His righteousness—in its letters are suggested all the intervals of music."[82]

Moscato continues to explain how the *yud* (י) represents the octave, because its significance in gematria is ten which supposedly comprises all numbers and harmonic ratios, referring to a book called *Decalogo* by a Rabbi Yedidiah. The *heh* (ה) of God's name indicates the fifth of the chord, per its place in the Hebrew alphabet and therefore its general numerical connotation, and likewise *vav* (ו) and the sixth. The four letters, with the *heh* appearing twice, represents the interval of a fourth, according to Moscato.

[82] Miletto and Veltri (2011), 75ff

He goes on to explain even more numerical symbols that are derived when the letters are combined in various ways to create elevenths and fifteenths.

This idea of God's presence as "perfect melody" is clearly articulated later in this same sermon. Moscato discusses the sympathetic resonances by which the sound made by one string can be transferred or induced in a second instrument, referring to Arama's *Niggun Olam*. Moscato then extends Arama's discussion as follows:

> "Indeed, he [the author of the Aqedah] was right in describing him [man] as a microcosm: he will awaken the superior, celestial, angelic, and divine music, and *the Lord's voice in power, / the Lord's voice in glory* will answer the heavens and they will answer the earth, and the whole house will be filled with light and happiness in a perfect melody."[83]

With the reference to Psalm 29 in italics above (as per the Miletto and Veltri critical edition of Moscato's sermons), Moscato draws Arama's theory of the macrocosm and microcosm together with the specific focus of this category; God's voice, *kol Adonai.*

The scope of this thesis does not allow for a more in-depth treatment of this category, of the theological potential of the music of the spheres. I have introduced the key works to be considered in this area, which require further examination. There is certainly much more to explore about the way in which the Greek philosophy of the music of the spheres and Jewish theological discourse intersect and interact.

[83] Miletto and Veltri (2011) 88f

Chapter Six: The Heavens Resounding with Sound or Music

Introduction

Whether as sonorous music, metaphorical poetry, or esoteric philosophical musings, there are a number of ways in which Jewish writers consider the music of the heavenly spheres. I will begin with Psalm 19, which, as part of the biblical canon, represents the oldest iteration of Jewish text concerning the music of the spheres. In the reception of this psalm throughout rabbinic and medieval tradition, as in other relevant sources that I will include in this discussion, many questions and interpretations arise. Do the heavens literally speak or sing praises? Can this sound be heard? Is the term "music of the spheres" a metaphor? Could it be applied to other natural phenomena? If the heavens themselves are not able to make noise, then how might we understand the use of these ideas in both Greek and Jewish sources?

As I will discuss, the question of metaphor and literalism in rabbinic text is not easily answered given the worldview of the classical rabbis, in which there was less of a strict definition between these realms. I will continue to address this dichotomy in light of medieval Jewish exegetes and philosophers, who live in a world that has been overturned by the new and burgeoning trends of rationalism and literalism. For the likes of Rashi, Moses and Abraham Ibn Ezra, Maimonides, and David Kimchi, the question of whether

to understand scripture literally or as metaphor is the crux of many discussions, including the music of the spheres.

These questions - the sonority and audibility of heavens, and whether or not the concept should be taken literally or understood as metaphor - form the central discussions of both the Greek and Jewish material. It is this history of interpretation and textual reception that I will present.

Psalm 19: The Jewish Textual Focus of the Music of the Spheres

Psalm 19, verses 2-5a read:

הַשָּׁמַיִם מְסַפְּרִים כְּבוֹד־אֵל וּמַעֲשֵׂה יָדָיו מַגִּיד הָרָקִיעַ׃

יוֹם לְיוֹם יַבִּיעַ אֹמֶר וְלַיְלָה לְלַיְלָה יְחַוֶּה־דָּעַת׃

אֵין־אֹמֶר וְאֵין דְּבָרִים בְּלִי נִשְׁמָע קוֹלָם׃

בְּכָל־הָאָרֶץ יָצָא קַוָּם וּבִקְצֵה תֵבֵל מִלֵּיהֶם

(2) The heavens declare the glory of God,

the sky proclaims His handiwork.

(3) Day to day makes utterance,

night to night speaks out.

(4) There is no utterance,

there are no words,

whose sound goes underhead.[84]

(5) Their voice carries throughout the earth,

their words to the end of the world.[85]

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[84] A footnote to the translation indicates that this phrase (verse 4c) is rendered, "with Septuagint, Symmachus, and Vulgate; or 'their sound is not heard.'" These three words, בלי נשמע קולם, are crucial in trying to make sense of the intention of the verse.

[85] 1985/1999 JPS translation

At first reading, this psalm has a clear potential connection to the Greek philosophy of the music of the heavenly spheres. We read of the heavens declaring and the sky proclaiming, along with the day and night speaking to one another. Therefore, it will not be a surprise that commentators throughout the centuries and genres, from scriptural exegesis, to philosophy, to modern biblical scholarship, have engaged with Psalm 19 in connection to the music of the spheres. These verses, the oldest clear Jewish reference to the doctrine, form the nexus of rabbinic and medieval commentary concerning whether or not the heavens produce music or sound.

The first part of this psalm (verses 2-7) constitutes a hymn praising God for the wonders of creation, specifically mentioning the sun in the final verses of this unit. This is often referred to as "Psalm 19A." The second part of the psalm discusses Torah and learning, with the tone of the sort of wisdom literature found elsewhere in the biblical canon, for example in Proverbs. All modern scholars note the patent difference between verses 2-7 and verses 8-15. How far back in its composition the psalm was intended as a single unit is unclear. Most biblical criticism treats it as two separate psalms, or fragments of two psalms combined.[86] Some acknowledge the differentiation between the sections, yet maintain that the intention and message of the psalm is most clearly conveyed when the psalm is believed to be a single work.[87] Nonetheless, since I will be dealing exclusively with verses from the first section or fragment, these concerns are not relevant.

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[86] As per Buttenweiser (171), Morgenstern (507)
[87] Segal, presenting Fishbane's theory from *Text and Texture: Close Readings of Selected Biblical Texts* (New York: Schocken, 1979)

It is worth considering theories concerning the age of the psalm, since this leads to one of the most basic connections between the Jewish and Greek ideas under discussion; similar origins. The majority of twentieth-century biblical scholarship concluded that Psalm 19A originated in the pre-Exilic period. Along with Gunkel, Kittel, Anderson, and Barnes, Kraus notes that the first part of the psalm "exhibits all the signs of great age."[88] Alongside the idea of an early dating of these verses, many scholars indicate non-Israelite elements in the psalm, because of the ubiquity sun-worship hymns in Babylonia, or various Ugaritic literary parallels.[89]

The frequency with which scholars note the ancient Near Eastern context of this psalm is of interest for the current discussion concerning the music of the spheres, since the very same claim, that the the music of the spheres originates in an ancient Near Eastern mileu, appears extensively in scholarly literature, see pages 21-22. It is clear that the identification of both the music of the spheres and Psalm 19.2-7 with an ancient Near Eastern context does not prove that there are references to this theory in Psalm 19. However, it is still noteworthy given the many scholars and commentators who do see the

[88] Kraus, 269. While this is the predominant view, it is worth noting those who oppose an early dating of the text. Morgenstern, following Briggs and Bertholet, conclude that Psalm 19A was composed in the post-Exilic period. Morgenstern is forthright in his rejection of the earlier dating, stating, "There is absolutely nothing in Ps. 19A to indicate pre-exilic composition. Rather the specific mention of 'El as the creator-god and the various other mythological elements suggest composition in the early post-exilic period, in the period, 516-485 B.C." (Morgenstern, 516) Sarna suggests a wider range, of some time following the Josianic reforms of 622/1 B.C.E (Sarna, 74).

[89] Sarna, 79

harmony of the spheres as being at least hinted towards, if not fully present, in this text. The concept of the music of the spheres was prolific in the ancient Near East, and made its way into Greek literature and its subsequent exegetical traditions. The opening verses of Psalm 19 represent the way in which the doctrine is also reflected in the Hebrew Bible and its respective exegetical literature.

As with all scripture, many queries arise in the reception of Psalm 19. Is the language surrounding the sonorous heavens intended as a metaphor, or to be taken literally? Is the music of the spheres audible? These are the ideas that I will address below, in rabbinic and medieval Jewish sources, as well as by continuing to reference the modern biblical scholarship on the text. I will mainly consider texts that refer to Psalm 19, but other texts with clear thematic and linguistic connections will also inform this exploration.

The Music of the Spheres in Classical Rabbinic Literature

BT Yoma 20b

The rabbis of the Talmud present broad acceptance of the idea of the sound of the heavenly spheres, in BT Yoma 20b. This passage does not specifically reference the biblical verses upon which I will focus most of this discussion (Psalm 19.2-5), yet it is noteworthy nonetheless. The particular issue being discussed is "the sound of the sphere of the sun" (גלגל חמה), which moves through the "firmament" (רקיע). The sun and the firmament are crucial in Psalm 19, and so this passage of Yoma certainly sits within the sphere of reference of the present topic.

The pertinent exert reads:

> דא"ר לוי מפני מה אין קולו של אדם נשמע ביום כדרך שנשמע בלילה מפני גלגל חמה שמנסר ברקיע כחרש המנסר בארזים והאי חירגא דיומא לא שמיה והיינו דקאמר נבוכדנצר (דניאל ד, לב) וכל דיירי ארעא (כלא) חשיבין
>
> ת"ר אלמלא גלגל חמה נשמע קול המונה של רומי ואלמלא קול המונה של רומי נשמע קול גלגל חמה ת"ר שלש קולות הולכין מסוף העולם ועד סופו ואלו הן קול גלגל חמה וקול המונה של רומי וקול נשמה בשעה שיוצאה מן הגוף וי"א אף לידה
>
> "**As Rabbi Levi said: Why is a person's voice not heard during the day in the manner that it is during the night?** It is **due to** the fact that the sound of the **sphere of the sun traversing the sky** generates noise like the noise generated by **a carpenter sawing cedars**, and that noise drowns out other sounds. **And that sawdust** that is visible during **the day** in the rays of the sun, ***la* is its name**. **This**

> **is** what **Nebuchadnezzar said: "And all the inhabitants of the world are considered like *la*"** (Daniel 4:32), i.e., all inhabitants of the earth are equivalent to specks of dust.
>
> Apropos sounds, the Gemara cites that **the Sages taught: Were it not** for the sound of the **sphere of the sun**, the **sound of** the bustle of **the crowds of Rome** would be **heard** throughout the world; **and were it not for the sound of** the bustle of **the crowds of Rome, the sound of the sun's sphere** would be **heard** throughout the world. And **the Sages taught: Three sounds travel from the end of the world to its** other **end**, and these are: **The sound of the sphere of the sun, and** the **sound of** the bustle of **the crowds of Rome, and the sound of the soul at the moment that it leaves the body,** which should be audible throughout the world. **And some say: Even** the sound of a woman giving **birth.**"[90]

This excerpt comes within a Talmudic discussion in BT Yoma 20b about *k'riyat ha-gever.* The Noé Edition includes a gloss on this term, explaining that, "the term *keriat hagever*, translated above as the call of the rooster, is mentioned in the mishna as an indication of a certain time."[91] The texts present various opinions, from the idea that it is the call of a person to the suggestion that the phrase refers to the proclamation made when it was time for the priests to report for their duties. The plainest meaning is also established, that the term refers to the rooster's morning call. It is in this context that the Talmudic discourse reaches the idea of the various sounds that emanate throughout the world, including the sound of the sphere of the sun. A plain reading of the passage implies that the rabbis accepted the doctrine of the music of the heavenly spheres, specifically here with regard to the sound of the sphere of the sun.

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[90] Steinsaltz (2013), 87
[91] Steinsaltz (2013), 86

In the Talmudic text, while there are words used to make it clear that sound is a key part of the discussion (נשמע, קול), it also seems that the aural phenomenon produces visual effects. The way in which the sawdust is seen in the sun's rays, and named (with reference to Daniel 4) is somewhat confusing. Is this the sawdust from the metaphorical sawing of wood, to which the sound of the sun is compared? Or is this somehow a visible, material dust that results from the sound of the sun moving through the sky? Could the whole notion of the "sound" produced be a metaphor for the sun's visible effects on earth?

The rabbis compare the sound of the sphere of the sun to very real, earthly noises, like the sound of sawing wood, the sound of the crowds of the city of Rome, and a woman in childbirth. This begs the question: could they actually hear this sound? Did they identify some sound they heard (related to weather, an animal, or any other naturally occurring noise) as the sound of the sphere of the sun? What led them to this aural analogy? Were the rabbis exceptional people who could mythically hear the music of the spheres, like Pythagoras? These questions sound somewhat outrageous, and are practically unanswerable. However, a plain reading of the text leads me to wonder about these very details.

This question, of the sonority and audibility of the music of the spheres, has been much discussed in the scholarly literature concerning the ancient Greek texts on the matter. There are those who discuss the music of Plato's *Timaeus* as purely theoretical, and not to

be understood as sonorous at all.[92] At the other end of the spectrum are scholars who go to great lengths to try to decipher reproducible musical scales from the *Timaeus,* with little to no success, given the complex and vague nature of the Platonic descriptions, clearly not intended to be taken as an instruction manual.[93] Others adopt a nuanced, middle position.[94]

It is possible to hold that the heavenly harmony exists but is inaudible to humans. The Pythagorean school maintained that since the cosmic harmony was constant, it formed continuous background noise. Aristotle notes their view and how they compared this to the blacksmith who is so accustomed to the immense noise of their workshop that they no longer hear it.[95] There are clearly problems with this metaphor. While a blacksmith can leave his workshop, a human can never leave the universe. Thus the music of the spheres is never interrupted by silence, which would make it able to be heard. Nonetheless, whether one appreciates the metaphor or not, the idea that the harmony of the universe is so ubiquitous and constant that a human being could never receive a reprieve in order to discern its presence is certainly compelling.

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[92] "As described in the *Timaeus* the cosmic scale is not actual music but the foundation for the Greek science of harmonics." Haar, (2001), 487
Similarly: "The myth of Er is so elusive that it escapes a strictly musical reading." Pelosi, 16

[93] see Handschin, J. 'The Timaeus Scale' in *Musica Disciplina* 4 (1950), pp. 3-42

[94] For example, Pelosi writes: "The movements of the heavenly bodies are meant to produce *audible* effects, and this *sonorous* music is conceived of as pleasant…The idea that heavenly harmony is *sonorous* and *pleasant* music of the spheres characterizes most ancient speculations on the doctrine." (Pelosi, 17)

[95] Pelosi, 21, citing Aristotle's *On The Heavens* (290b24–9)

Yoma is using the same idea in reverse. It is not the sound of the sphere of the sun that is inaudible because of its existence as constant background noise, but rather that the very sonority of the sun masks other sounds (human voices) from being heard by people at night. In the second section, the apparent audibility of the sphere of the sun is made even clearer. The "sound of the bustle of the crowds of Rome" seems to be the plainest example possible of a real, perceived, audible (and very loud) sound that could have existed in the rabbis' world. The sound of the sun is described as being so loud that it prevents even the sound of the biggest city the rabbis can imagine from being heard.

There are those[96] who read the Talmudic text with the same skepticism about its sonorous sphere as we have seen applied to the Greek material. The most obvious metaphor that the Talmudic author could be employing concerns the audible sound of the sphere of the sun as an allusion to the sun's light that is visible from earth. Alternatively, the sound of the sun could be understood as representing the mighty power of Rome. I will explore more below how the trope of metaphor surrounding language pertaining to the music of the spheres is used. However, in this instance, I am unsure of how this specific metaphorical position might be defended. The mention of the sound of the sphere of the sun appears in the context of a discussion of different sounds, which are all clearly

[96] For example, as in the commentary provided in The Noé Edition of the Koren Bavli Talmud: "Most commentaries explain that the reference is not literally to the sound; rather, it is meant in a spiritual sense. Some explain that the Gemara is likening the sound of Rome, i.e., the authority of its rule that encompasses the entire world and creates the impression that it is eternal, to the fleeting power of the sun. Just as the sun, despite its power, disappears at night, Rome will also ultimately disappear (Maharsha)." (Steinsaltz (2013), 87)

audible earthly noises (a rooster, people, a city). This is not a passage that is obviously intended as metaphor.

Psalm 19 in Classical Rabbinic Literature

Above, I dealt with the passage in BT Yoma 20b that refers to the sound of the movement of the sphere of the sun. While not mentioning Psalm 19, the idea of audible heavenly bodies is clearly addressed. I now turn to specific rabbinic treatments of Psalm 19.2-5a to continue to explore how rabbinic literature engages with the idea that the heavenly spheres or bodies produce sound. Classical rabbinic texts address the opening verses of Psalm 19 in two main ways, forming two positions regarding the music of the spheres: the metaphorical and the literal.

The Music of the Spheres as Metaphor in Rabbinic Literature

First, we find a metaphorical understanding towards the end of BT Ketubot 5a. This excerpt comes in a discussion about the works of righteous people on earth, and a comparison between the creation of heaven and earth, and the acts of the righteous. A particular point hinges on the word ידיו, and this is the connection to Psalm 19.2:

מיתיבי (תהלים יט, ב) השמים מספרים כבוד אל ומעשה ידיו מגיד הרקיע הכי קאמר מעשה ידיהם של צדיקים מי מגיד הרקיע ומאי ניהו מטר

"**The Gemara raises an objection: "The heavens declare the glory of God, and the firmament proclaims the work of His hands"** (**Psalms 19:2**). The heavens were created by His hands. The Gemara answers that **this** is what the verse **is saying: Who attests to the handiwork of the righteous,** that they are performing the will of God? It is **the heavens. And what is** the avenue through which the heavens do so? It is by means of **rain** that falls due to the prayers of the righteous."[97]

The text plays with the phrase מעשה ידיו for the purpose of its discussion, wondering how the heavens could be understood to be attesting to the work of the righteous, ,מעשה ידיהם as opposed to the words of God. The Talmudic author offers a midrashic, metaphorical treatment of Psalm 19, in which rain is understood to be the way in which the heavens offer their praise. For the means of the argument, the text is trying to present, the "works" are clearly intended to be those of the righteous, and not of God. However, for the purpose of this thesis, that is of little importance. The interest here concerns how the firmament offers their praise, whoever they happen to be lauding. The text is clear in the final three words of the excerpt that the verbs מספרים and מגיד from the original verse from Psalms should be understood as analogies for the rain. In his commentary on this Talmudic phrase, Rashi expands this terse statement, explaining how the heavens testify to the righteousness of certain people by producing rain when they pray for it:

מעשה הצדיקים מגיד הרקיע שהרקיע מעיד עליהם לבריות שהם צדיקים שמתפללין על הגשמים ומטר יורד

[97] Steinsaltz (2015), 25

> "The firmament declares the works of the righteous, in that the firmament testifies on their behalf, that they are righteous since when they pray for the early rains, they fall."[98]

Literal Understandings of the Music of the Spheres in Rabbinic Literature

The more frequently attested way in which Psalm 19.2-5 appears in rabbinic literature is as an instrument of God's power. God is seen as commanding the heavens to offer praise back to the Divine. This construct brings the whole notion of divine command and authority into the consideration of heavenly music. However, it nonetheless seems to support the idea that the heavens were believed to be capable of literally offering sonorous praise and hymn.

Midrash Tehillim on Psalm 19.2 opens with this claim, using Proverbs 16.4 as a proof-text, that each of God's creations exists for God's sake. What does this mean, according to the midrashist? That everything is created לקילוסו, to praise God (literally "to praise him"):

> השמים מספרים. זה שאמר הכתוב (משלי טז ד) כל פעל ה' למענהו. לקילוסו…
>
> דבר אחר כל פעל ה'. לקילוסו. שהכל מקלסין אותו על פעולתו ועל מעשהו וכל מעשיו מקלסין אותו.

> *"The heavens tell.* This is what it means where it says, 'The Eternal made everything for a purpose' (Prov. 16.4). That purpose is to praise Him…

[98] My translation (draft)

> Another interpretation: 'The Eternal made everything for a purpose.' That purpose is to praise God. So that everything praises Him for His creations and works, and so all His works praise Him."[99]

In the additional opinion that forms the second half of this excerpt, the Proverbs quotation used previously is further expounded to make it clear that all of God's creations and works praise God, precisely because of their own having been created.

The same verse from Proverbs (16.4) is invoked alongside our text in question, Psalm 19.2, in Exodus Rabbah 17.1. The claim of this midrash is similarly that everything God created exists in order to do God's will:

> אַתָּה מוֹצֵא שֶׁכָּל מַה שֶּׁבָּרָא הַקָּדוֹשׁ בָּרוּךְ הוּא בְּשֵׁשֶׁת יְמֵי בְרֵאשִׁית לֹא בָרָא אֶלָּא לִכְבוֹדוֹ וְלַעֲשׂוֹת בָּהֶן רְצוֹנוֹ.

> "One finds that everything that the Holy One created during the six days of creation was created for no purpose other than to glorify Him, and in order to do His will."[100]

The text proceeds by moving through each day of creation, using biblical verses, many of them from Psalms, to prove that every facet of the universe in some way testifies to God's glory. Since Genesis 1.1 speaks of the creation of the heavens (שמים) on the first day, and Genesis 1.6 names the firmament (רקיע) as having been made on day two, each of these cosmological entities, of the utmost importance in our discussion of Psalm 19, appears in the following phrases of the midrash:

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[99] My translation (draft)
[100] My translation (draft)

בַּיּוֹם הָרִאשׁוֹן בָּרָא שָׁמַיִם וָאָרֶץ אַף הֵם לִכְבוֹדוֹ בְּרָאָם, שֶׁנֶּאֱמַר (ישעיה סו, א): כֹּה אָמַר ה' הַשָּׁמַיִם כִּסְאִי, וְאוֹמֵר (תהלים יט, ב): הַשָּׁמַיִם מְסַפְּרִים כְּבוֹד אֵל.

...מַה נִּבְרָא בְּיוֹם שֵׁנִי, רָקִיעַ, לִכְבוֹדוֹ בְּרָאוֹ שֶׁיַּעַמְדוּ שָׁם הַמַּלְאָכִים וְיִהְיוּ מְקַלְסִין אוֹתוֹ, שֶׁנֶּאֱמַר (תהלים קנ, א): הַלְלוּהוּ בִּרְקִיעַ עֻזּוֹ.

"On the first day, God created the heavens and earth, and He created even these for His own glory, as it is written, 'Thus said the Eternal, the heavens are my throne,' (Isa. 66.1) and 'The heavens speak of God's glory.' (Ps. 19.2).

… That which was created on the second day, the firmament, He created for God's His glory, they the angels would be stationed there and they would praise Him, as it is written, 'Praise Him in the firmament of His strength.' (Ps. 150.1)"[101]

Here, two ways are presented in which the heavens exist for the sake of God's glory. First, using Isaiah 66.1, the heavens are understood to be God's dwelling place, literally God's "throne." Secondly, as pertains to the matter in question here, Psalm 19.2 is used to express another way in which the heavens could be understood as glorifying God, praising: לכבודו. The verse was likely chosen because of the appearance of the phrase כבוד אל as the direct object of the heavens' proclamations. The midrash does not explicitly address how the heavens make their declarations here, but simply quotes the verse and moves on to the next item in its litany of how the creations exist for God's glory and will.

After a discussion of how light is also for God's sake, not referring to any kind of audible praise or sound, the midrash comes to the second day of creation. It does not state that the firmament (רקיע) itself does anything in God's honour, but rather that it is the locus of the

[101] My translation (draft)

angels who praise God. The verb מקלסין (praise) appeared above in the excerpt from Midrash Tehillim, and will appear below in Ecclesiastes Rabbah, again in the context of God's creations expressing audible praise. Marcus Jastrow's *Dictionary of the Targumim, the Talmud Babli and Yerushalmi and the Midrashic Literature* defines the root קלס in the piel as "to shout, make noise"[102] with subsense one, "to praise." This is clearly a sonorous verb.

With reference to Psalm 150.1, the text understands the third person plural הללוהו as referring to the angels, who praise God in their place on high (the רקיע). In Chapter Three, and as I will show with Abraham Ibn Ezra's commentary below, the interplay between the heavens themselves resounding and the angels in the heavens singing praises is a ubiquitous theme in exegesis concerning potential references to the music of the spheres. Here, the two interpretations exist side-by-side, using different verses as points of departure. It seems that in this excerpt of Exodus Rabbah both the heavens and the angels are believed to be expressing their praise for God and God's glory.

The midrash continues to explain how the trees and grass praise God with reference to I Chronicles 16.33 and Psalm 96.12. Both of these verses contain the verb רנן, expressing nature's joyous celebration of God. BDB defines the root as "give a ringing cry,"[103] and Clines gives the broad sense of "cry aloud, call out," and lists these two citations

[102] Jastrow, 1379
[103] BDB 7442, p. 943, col. 1

specifically under the definition "cry, shout for joy, rejoice, exult."[104] It is clear that this verb expresses audible praise. In light of Boethius' paradigms of *musica mundana* and *musica humana,* the human soul is said to resonate in parallel with the music of the spheres.[105] It would not therefore be an unfounded assumption to imagine that the trees, grass, and nature could be part of this microcosm on earth resonating with the macrocosmic heavens.

The list continues with the second object of creation on day three, the waters, and day four's heavenly luminaries:

> וְכֵן בָּרָא הַמַּיִם בְּיוֹם שְׁלִישִׁי, שֶׁכִּנּוּסָן מֵעַל הָאָרֶץ, וּמִשָּׁם קִלּוּסוֹ עוֹלֶה, שֶׁנֶּאֱמַר (תהלים צג, ד): מִקֹּלוֹת מַיִם רַבִּים אַדִּירִים מִשְׁבְּרֵי יָם.
>
> מַה נִּבְרָא בְּיוֹם רְבִיעִי מְאוֹרוֹת, לִכְבוֹדוֹ בְּרָאָם, שֶׁנֶּאֱמַר (תהלים קמח, ג): הַלְלוּהוּ שֶׁמֶשׁ וְיָרֵחַ.
>
> "And thus, God created the waters on the third day, whose gathering place is above the earth, and from there, their praise rises, as it is written, 'Greater than the sounds of the mighty waves, more roaring than the breakers of the sea…' (Ps. 93.4)
>
> That which was created on the fourth day - the luminaries - He created them for His glory, as it is written, 'Praise Him, O sun and moon.' (Ps. 148.3)"[106]

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[104] (ed.) Clines (2010), 503

[105] A definition of Boethius' categories from Eric Werner (1941), 253: "(1) *Musica mundana* representing the movements of the heavenly spheres and the order of the elements and seasons. This Music in inseparable connected with the mathematical order of the universe. (2) *Musica humana* is the power which links body and soul in a kind of mathematical harmony, mirroring the macrocosmic *Musica mundana* in the microcosm of human existence." See Chapter Four for more on the music of the soul.

[106] My translation (draft)

Here, yet more linguistic roots are used which explain that the reason for these creations' existence is their ability and propensity to praise God with sound; קלס, קול, הללוהו. Concerning the waters, the midrash cites Psalm 93.4, which, as will be seen below, is an important verse used in Abraham Ibn Ezra's acknowledgment of the validity of the music of the spheres.

Psalm 148, here used in reference to the sun and moon, itself contains a litany of all the different places and entities that praise God: in the heavens, on high, God's host, the sun, moon, and stars, the heavens and waters, animals and plants on earth. The verb used throughout is הלל,[107] sometimes with a clear subject, for instance in verse three as quoted in this midrash. However, elsewhere it is not clear who or what is doing the praising. This is similar to Psalm 150.1, which, as quoted above is assumed to refer to the angels praising in the firmament.

As the midrash draws to a close, its focus shifts. The way in which the birds and beasts (the creations of days five and six) are seen to praise God is through their being sacrificed, as is shown with verses from Leviticus 1. Humans both express praise themselves, with verse of proof from Psalm 148 again, and carry out the aforementioned sacrifices, showing how they exist for God's sake, to testify to God's glory on earth.

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[107] BDB 1984, pp. 237-8 define the piel of the root הלל as "praise". The entry gives a number of cognate definitions include the Arabic, "shout," and Assyrian, "shout for joy," noting that all are variations of "cry aloud." In the many examples given, a number include explicit reference to music, musical instruments, or vocal praise.

A similar idea is conveyed in Ecclesiastes Rabbah 3.14, that God commanded all the heavenly bodies to praise and sing hymns. The excerpt in question, which refers to Psalm 19.2 comes in the context of a debate about humans contradicting God's commands. The midrash goes through a long list of ways in which God has issued some command and humans have declared the opposite, using biblical verses to back up each point. In each instance, God declares some kind of order and humans reverse or mix up the natural way the world is supposedly meant to be. After considering God's command over the sea and dry land, and Moses' inversion of that, we come to the heavens:

> כָּךְ גָּזַר הַקָּדוֹשׁ בָּרוּךְ הוּא שֶׁיִּהְיוּ הַשָּׁמַיִם מְקַלְסִין אוֹתוֹ, שֶׁנֶּאֱמַר (תהלים יט, ב): הַשָּׁמַיִם מְסַפְּרִים כְּבוֹד אֵל, עָמַד מֹשֶׁה וְשִׁתְּקָן, שֶׁנֶּאֱמַר (דברים לב, א): הַאֲזִינוּ הַשָּׁמַיִם וַאֲדַבֵּרָה וגו'.

> "Thus the Holy One decreed that the heavens should praise Him, as it is written, 'The heavens speak of God's glory.' (Ps. 19.2) Moses arose and silenced them, as it is written, 'Give ear, O heavens, that I may speak.' (Deut. 32.1)"[108]

Again we see the appearance of the root קלס as the praise of God. However, here, it is explicitly God who commands the heavens in this behaviour. The midrash seems to understand the words of Psalm 19.2 as the instruction given by God to heavens, that they will speak God's praise. In line with the structure of the midrash, as I explained above, it then gives an example of how people have contradicted this divine fiat. Concerning the heavens, the midrash uses Deuteronomy 32.1, evidencing how "Moses silenced them." By using the verb שתק to explain what Moses does to oppose God's command, it is clear

[108] My translation (draft)

that the midrash believes Psalm 19.2 to express sound and speech coming from the heavens.

Similarly, the sun and moon are understood to express their praise for God with sound (as illustrated above in Exodus Rabbah). Ecclesiastes Rabbah continues:

> כָּךְ גָּזַר הַקָּדוֹשׁ בָּרוּךְ הוּא עַל הַשֶּׁמֶשׁ וְעַל הַיָּרֵחַ שֶׁיְּהֵיוּ מְקַלְּסִין אוֹתוֹ, שֶׁנֶּאֱמַר (תהלים קיג, ג): מִמִּזְרַח, שֶׁמֶשׁ עַד מְבוֹאוֹ מְהֻלָּל שֵׁם ה', מְהַלֵּל כְּתִיב, עָמַד יְהוֹשֻׁעַ תַּלְמִידוֹ וְשָׁתְקָן, שֶׁנֶּאֱמַר (יהושע י, יב): שֶׁמֶשׁ בְּגִבְעוֹן דּוֹם וְיָרֵחַ בְּעֵמֶק אַיָּלוֹן.
>
> "Thus decreed the Holy One, concerning the sun and moon, that they should praise Him, as it is written, 'from the sun's east to its setting, the Eternal's name is praised' (Ps. 113.3), read instead '[the sun] praises.' Then Joshua arose and silenced it, as it is written, 'Be silenced/stilled, O sun at Gibeon, O moon in the Ayalon Valley!' (Josh. 10.12)"[109]

Just as God commanded the heavens to speak praises, so too with the sun and moon. They are intended to קלס, as is supported by Psalm 113.3. If it was unclear whether or not sonorous praise was intended here, the verse brought to show how humans contradict God's decree again uses explicit reference to "silencing" the sun and moon. Joshua 10.12 evokes the famous story of Joshua stopping the sun in the sky, in order that the Israelites would have enough time to mount a surprise attack against the Amorites. The verb דמם, usually translated as "stand still" (KJV, NRSV, JPS) can also be understood as "silence". BDB defines the root as "be or grow dumb, silent, still,"[110] and Clines gives a concise rendering encompassing both meanings, "be silent, cease."[111] The commonly accepted

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[109] My translation (draft)
[110] BDB 1826, p.198, col. 2
[111] (ed.) Clines (1995), 450

understanding of this verse in Joshua would use the second sense of the root in BDB, "be still (opp. to both speech and motion)"[112] with particular weight given to the stillness of motion, and Clines "cease."[113] However, I believe that this midrash emphasises the silencing of the sound of the sun and moon, rather than its motionlessness.

I will present one final rabbinic text that, while not directly citing Psalm 19, clearly speaks to the same theme, using similar linguistic features. Sifrei to Deuteronomy 333 discusses a phrase in Deuteronomy 32.43 in which the nations of the world are commanded to praise the Israelites (described as "God's people"). While the biblical verse uses the root רנן,[114] the midrashic voice uses the same verb that I discussed above, קלס. The midrash then continues to present scriptural verses in which it finds evidence that other entities and people are likewise commanded to express praise, for either the Israelites or God. The text begins this list with the notion that the heavens and earth offer praise:

> ד"א הרנינו גוים עמו - שעתידים אומות העולם להיות מקלסים לפני ישראל, שנאמר הרנינו גוים עמו. ומנין שאף שמים וארץ? שנאמר (ישעיה מד) רנו שמים כי עשה ה' הריעו תחתיות ארץ.

> "Another opinion concerning 'Nations, praise His people!' (Deut. 32.43): At the end of time, the nations of the world will praise Israel, as it is written, 'Nations, praise His people!' (Deut. 32.43). From where do we derive this for the heaven and earth? As it is written, 'Sing for joy, O heavens, for that which the Eternal has done! Shout in praise, O depths of the earth!' (Isa. 44.23)."[115]

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[112] BDB 1826, p.198, col. 2

[113] (ed.) Clines (1995), 450

[114] Here, the root unusually appears in the hiphil. This specific example is listed in BDB 7442. p. 943, col. 2 as the imperative, meaning "*ring out a cry* of joy." Also, see above footnotes 103 and 104.

[115] My translation (draft)

Isaiah 44.23 contains the same root, רנן, as the verse in question (Deuteronomy 32.43), and so provides a fitting proof-text for the idea that the heavens (שמים- the same word as in Psalm 19.2) similarly sing out joyfully in God's honour. Here we see another rabbinic text in which the notion of the heavens' sonorous praise is taken for granted, and the literal and practical aspects are not questioned. The midrash continues citing verses showing how the mountains and hills, and the ancient ancestors will all join in this praising.

After reading of the acceptance of the music of the spheres in BT Yoma 20b, the rabbinic commentary on Psalm 19 demonstrates a more diverse set of opinions. I have presented these rabbinic texts under two headings, answering the question of whether to understand Psalm 19, and similar texts, in a metaphorical or literal manner. However, the whole notion of metaphor and literalism and the stark dichotomy between them is less pertinent to the world of rabbinic literature than to later thinkers. We are only able to ask these modern questions of ancient texts to a certain extent, since their conception of realism and use of language remain difficult to decipher. As such, I now turn to the medieval Jewish reception of Psalm 19. In the dawning centuries of rationalism and, for some of the exegetes I will discuss, a keen interest in rhetoric and language, these commentaries and philosophical treatises perhaps give more indication of exactly how these verses were and could be understood.

Medieval Jewish Exegesis

I will deal with five significant medieval Jewish exegetes' treatment of the opening verses of Psalm 19, in order to understand the various tensions and conflicts between the ways in which they understand their content. The context and time in which these exegetes worked and lived is important to note. They span two centuries, and hail from many sides of the Mediterranean. Rashi (1040-1105) lived in northern France, influenced largely by the Christian hegemony of northern Europe. Each of the subsequent scholars was impacted to a greater or lesser extent by the Judeo-Arabic tradition, and Arabic philosophy's translations of Greek texts. Moses Ibn Ezra (1058-1138) experienced the Arabic philosophical and literary flourishing in Andalusia. His slightly later relative, Abraham Ibn Ezra (1089-1167) seems to have visited innumerable cities across Spain, France, and Italy throughout his life.[116] Maimonides (1135-1204) travelled during his life from southern Spain to Egypt, again deeply influenced by Arabic thought and forced to move due to Almohad persecution. Finally, Radak (1160-1235) lived in Provence and responds in his writing to both Rashi and Maimonides, showing a knowledge and interest in the various earlier sages' thought on the music of the spheres.

The texts come from diverse genres. Abraham Ibn Ezra, Rashi, and Radak's contribution to this topic come primarily from their commentaries on the book of Psalms. This is perhaps the most straightforward and obvious context in which one might find opinions

[116] Gottheil, R., Bacher, W. 'Abraham Ibn Ezra' in *Jewish Encyclopedia* (1906)

on Psalm 19. Moses Ibn Ezra also treats these key verses, but in his opus on rhetoric and poetry. He cites Psalm 19.2-4 as an example in his definition of a certain type of metaphor. This is clearly of interest, given the questions I am addressing. The excerpts from Maimonides that I will discuss come from *The Guide for the Perplexed,* a philosophical work. However, whether these sages' suggestions about Psalm 19 are found in biblical commentaries, works on the theory of poetry, or philosophical treatises, they seem to be addressing the same questions and coming to some of the same conclusions. As such, the genre of the work from which their comments arise is not of great concern or relevance.

Does Psalm 19 represent an ancient Jewish reference to heavenly music? Or simply a metaphorical use of musical language? Who in the heavens could be speaking? How might the heavens "tell" and "declare" if not through sound? As seen above, by the eleventh century when the earliest of these scholars lived and wrote (Rashi), classical rabbinic literature had already begun to impose all manner of metaphorical and theological understandings onto Psalm 19. However, the radically different intellectual and historical context of these medieval scholars' work means the issues and solutions become even more clearly articulated; the literalists versus the allegorists, those influenced by Islamic Spain versus those writing in the shadow of Christianity. The following analysis will chronologically trace how these questions surrounding Psalm 19 are continued, developed, or abandoned in favour of alternative approaches.

Metaphorical Explanations

It is clear in Psalm 19 itself that the heavens and firmament are the subjects of the verbs of speech. For those who cannot rationally or logically accept that the heavens emit sound, then an alternative interpretation must be constructed. If music emanating from the spheres heavens is not an attested, observable, audible phenomena, which it most certainly is not today, then how can this verse be understood?

There are plenty of commentaries who jump straight to the kind of metaphorical interpretation to which I have already alluded. *The Jewish Study Bible*'s commentary on verses 2-4 suggest, "The cosmos praises God; the creation testifies to God's greatness. It is unclear if that *sound* is metaphorical, or if some Israelites believed in the music of the spheres, an idea later associated with Pythagoras."[117] Here we see the opposition set up, that will continue throughout this discussion: metaphor versus literalism.

Sarna is one of those modern scholars who stakes out the metaphorical position. He writes of Psalm 19.2,

> "We are dealing, of course, with figurative language. Human feelings and emotional reactions to the timeless magnificence of the celestial scene heighten the consciousness of its Creator, and quicken the impulse to celebrate His handiwork and give vocal expression to the inward, spiritual experience it arouses. The poet projects this situation onto the heavens and the heavenly bodies, which are now all personified."[118]

[117] (eds.) Berlin and Brettler, 1302
[118] Sarna, 78

This is the same suggestion that we see from others[119] who phrase their metaphorical understanding as direct opposition to Gunkel, a vigorous advocate of Psalm 19 as a direct reference to the music of the spheres.

Much has been written about the tendencies of different medieval Jewish exegetes towards different scriptural methods and approaches.[120] Whether it is relevant to classify Rashi or Abraham Ibn Ezra as generally more given to plain-meaning explanations, and to consider who is most in favour of allegorical understandings is not the topic at hand here. However, suffice to say the medieval project of Jewish biblical interpretation saw an explosion of interest in literalist, plain-meaning understanding and a clear desire to study and use in a sophisticated way allegory and metaphor.

Four out of the five sages that I will discuss include metaphorical approaches to Psalm 19: Rashi, Moses Ibn Ezra, Abraham Ibn Ezra, and Radak. Their desire to read the

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[119] Buttenwieser is an energetic opponent of Gunkel in this instance. He uses the similar ideas in Job 38.7 as "an excellent illustration of how the poet of every age and clime sees nature as what it truly is - animated." (Buttenwieser, 171) This is how he understands Psalm 19.2-3, as an "animation", or poetic metaphorical image of the heavens.
Kraus also explicitly mentions Gunkel and disagrees with him, instead proposing a metaphorical explanation. He quotes Donner to illustrate this: "'The psalmist does not seriously think that the heavens 'declare' and the firmament 'proclaims'; rather, he clothes the religious experience in which he participates in the cloak of metonymy' (*ZAW* 79 [1967], 328)." (Kraus, 271, citing H. Donner)

[120] For example, see: McAuliffe, J.**,** *With reverence for the word: medieval scriptural exegesis in Judaism, Christianity, and Islam* (Oxford, 2003). Rosenthal, E.**,** "The study of the Bible in medieval Judaism" in Lampe (ed.) *The Cambridge history of the Bible*, vol.2, (Cambridge, 1969) pp 252-279. Saperstein, M.**,** *Decoding the Rabbis* (Cambridge, Mass., 1982), 1-20.

heavenly music as a metaphor for some other phenomenon is grounded in the rationalist position that it cannot feasibly be that the heavens sing or create sound, despite the fact that Plato himself is often counted as a rationalist.

Rashi

Rashi understands Psalm 19.2-5a to be a metaphor, in light of the prominence of the sun in verses 5b-7. He understands בכל הארץ יצא קום, as the light that people receive on earth, providing a gloss for that phrase: "מאירים לבריות". He explains that despite the lack of words and utterances, as stated in verse 4 ("אין אמר ואין דברים"), people receive something of substance from the heavens, that being light. Because of this, Rashi explains, "מספרים הבריות כבוד אל". It is the creations (i.e. humans) who speak praise of God, explicitly "על המאורות", because of, or on account of, the celestial luminaries. In this way, Rashi rejects the idea that the heavens themselves make sound or express praise. Rather the language of sound is a metaphor for the light that shines on humans and creation.

Despite his refusal to illustrate the heavens themselves as praising, Rashi does admit to the proclamations of the stars and constellations, "הכוכבים והמזלות," as he glosses "רקיע" (firmament) with this pair. With the knowledge that, per Genesis 1.17, the stars are stationed in the firmament, Rashi sees "רקיע" in Psalm 19:2 as referring to these heavenly bodies who "declare" God's glory, rather than the structure of the sky itself. Here we do see some slackening of the rationalist interpretation that it can only be human beings who give praise, since the heavenly bodies too are subjects of the verb "מגיד."

In his comment on verse 3, Rashi returns to his original stance, inserting the humans who utter praise, as opposed to the ambiguous "day" and "night" of the biblical text. He writes

that as a result of the renewal of creation every day, clearly referencing the יוצר אור blessing from the daily morning liturgy,[121] people express words of exultation: "יביעו הבריות אמרי שבח". Gruber translates the sentence from which this phrase comes, "Therefore people utter words of praise… by means of the days and nights which teach people to praise and acknowledge [God]."[122] As before, Rashi interprets the psalm as indicating that it is not that the heavens themselves or the elusive entities of "day" and "night" are hymning praise. Rather, human beings are the ones uttering God's glory, as a result of the wonders of creation and light they observe and experience.

When his commentary reaches verse 5a, Rashi reasserts his point yet again, stating, "בקצה תבל מליהם שהכל מדברים בנפלאות שהם רואים". "THEIR WORDS ARE AT THE END OF THE WORLD, for all speak about the wonders which they see."[123] The implied subject of "they" here is people who look at the sky and earth, and as such speak about what they see. In this way, Rashi reinterprets the third person plural suffix on the word, "מליהם" from Psalm 19.5 to mean the people's words, not those of the heavens, the firmament, nor the day and night (the possible antecedents in the psalm itself).

In these various ways, Rashi rereads Psalm 19 as referring not to the sound from heaven, but rather earthly music and speech. He uses the phrasing of the psalm to imply that people express their glorifications of God as a result of the universe they observe,

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[121] The text of the first blessing after the שמע reads: וּבְטוּבוֹ מְחַדֵּשׁ בְּכָל יוֹם תָּמִיד מַעֲשֵׂה בְרֵאשִׁית
[122] Gruber, 246
[123] Gruber, 246

specifically the light of the sun. It is clear from his comments that he believes the sound of praise itself is distinctly human.

While philosophy was a limited field in eleventh-century Christian Europe, the majority (although not all) of Plato's *Timaeus* was available via the Latin translation of Calcidius, a fourth-century CE philosopher. The text was commonly used amongst Christian theologians and commentators of Rashi's time and formed part of his philosophical outlook as well.[124] As such, it is reasonable to assume that, since Rashi had read and incorporated one part of the *Timaeus* into his worldview, that he would be aware of the music of the spheres as well. Here, his commentary shows the use of a metaphorical interpretation to support a rationalist position concerning the implausibility of this very doctrine, of the resounding heavenly music of the spheres.

[124] This is the conclusion drawn by Harvey, in his article, 'Rashi on Creation: Beyond Plato and Derrida.' See Harvey (2018), 36-7

Moses Ibn Ezra

Born just thirty years after Rashi, in 1070 in Granada, Moses Ibn Ezra was a true polymath. He is probably most well known today for his poetry, but also wrote a substantial treatise on philosophy and rhetoric. Werner describes both Moses and his slightly later relative, Abraham Ibn Ezra as "Neo-Platonists" who "both accepted the doctrine"[125] of the music of the spheres. Abraham Ibn Ezra presents a complicated example, which I will discuss at length below. Suffice to say, it is far too simple a statement to claim that he "accepted the doctrine." Similarly, I see Werner as somewhat misguided in suggesting that Moses Ibn Ezra was such an enthusiastic proponent of the music of the spheres. He certainly engaged in discussion about the concept, but the content of his writings implies that he was much more in the camp of those who read the biblical text as metaphor. His aim seems to be to circumvent the idea that the heavens actually produce sound, by highlighting the rhetorical devices at play in the psalms.

In Moses Ibn Ezra's extensive, philosophical work, he refers to the specific verses of Psalm 19 in question, in his chapter on metaphor, or, "*Isti'āra*." He uses Psalm 19 as an example of what he describes as "concealed metaphor":

> "Metaphor is a term from a known entity [applied] to an unknown entity, and that is all. If you would only examine it rationally, and weigh it on the scales of investigation, its merit would become obvious to you.
>
> There are obvious metaphors and concealed metaphors. The obvious are like those that I cited above, and the concealed are like 'The heavens declare the glory

[125] Werner (1941), 290

> of God' [Ps 19:2]. It becomes clear that this is figurative language, not literal, from the words 'there is no speech…' [Ps 19:3].... 'Day to day utters speech' is metaphorical language, referring to the effect created when the sun shines forth from the east every twenty-four hours as it completes its circuit."[126]

Here, Moses Ibn Ezra explicitly uses Psalm 19.2-4 as an example of metaphor as a feature of rhetoric. He explains how the presentation of the paradox in verse 3 of "no speech and no words" makes it clear that verse 2 was intended, albeit in a concealed way, metaphorically. Verse 4 presents a metaphor in Moses Ibn Ezra's mind, since the language of "speech" actually refers to the light produced by the sun. This is identical to the explanation presented by Rashi, which I discussed above. As with Radak below, it is possible that Moses Ibn Ezra could have known and admired Rashi's commentary. I am also reminded of the simultaneous aural and visual implications of the passage in BT Yoma 20b regarding specifically the sun's rays as a perceivable manifestation of its sound. All three of these sources - Yoma, Rashi, and Moses Ibn Ezra - use the rational explanation of what people are more accustomed to receive from the sun, i.e. light, as a way of understanding the incoherence of sound emanating from the heavens.

In using these verses as a paradigm of metaphor in this kind of philosophical treatise, Moses Ibn Ezra makes clear that he reads Psalm 19's references to the resounding heavens not as indications of the music the skies produce, but rather as indications of the thoughtful poetic construction of the Psalter. The phrases are not superfluous and do communicate a particular message, but that message is not about the music of the

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[126] Berlin, 75, from *Kitāb al-Muḥāḍara wa-'l-Mudhākara, Chapter 8, Part 1*

spheres. Instead, Psalm 19 concerns the light people receive from the sun, that can be observed empirically and understood rationally.

Abraham Ibn Ezra

Abraham Ibn Ezra presents a challenge in this discussion. Werner suggests (see footnote 125, above) that he was a proponent of the doctrine music of the spheres. This simple statement is simultaneously not entirely true and not entirely false. There are examples in which Abraham Ibn Ezra interprets possible references to the music of the spheres in Scripture as metaphor, and other places where he suggests that the angels are the source of the sound. In two comments, one on the Psalms and the other on Job, he does seem to favour a literalist approach. And he writes at length on Psalm 19. Already it is clear to see that we get a diverse, possibly confused picture from this exegete's comments. Does he explain away the references as metonymy or metaphor? Or take heavenly music seriously, as an literal, present phenomenon? I will present the various places in his writing in which Abraham Ibn Ezra tackles the question of the music of the spheres.

A Metaphorical Approach

Below I will deal with Abraham Ibn Ezra's comments on Psalm 19, which do include metaphorical interpretations. However, first, I present the clearest example of his figurative reading of the music of the spheres. In Isaiah 49.13, the verb רנן is applied to the heavens, the same verb that appeared above in verses cited in the midrash, Exodus Rabbah 17.1. The verse and Abraham Ibn Ezra's comments are as follows:

Isaiah 49.13:

רָנּוּ שָׁמַיִם וְגִילִי אָרֶץ יִפְצְחוּ [וּפִצְחוּ] הָרִים רִנָּה כִּי־נִחַם יְהוָה עַמּוֹ וַעֲנִיָּיו יְרַחֵם׃

> "Shout, O heavens, and rejoice, O earth!
> Break into shouting, O hills!
> For the Lord has comforted His people,
> And has taken back His afflicted ones in love."[127]

Abraham Ibn Ezra's comment:

רנו וגו': דרך משל, או רננת שמים להיות האויר זך

> "*Sing,* etc. This is a figurative expression; or the purity of the air is to be considered as the singing of the heavens."[128]

Abraham Ibn Ezra introduces his comment using the phrase, "דרך משל". This is technical rhetorical terminology employed in Jewish biblical exegesis to signify a metaphorical reading of a text. After this clear indication of his position, the commentator explains how reads the heaven's joyful singing, by indicating what the metaphor points towards: רננת שמים להיות האויר זך. The purity and quality of the air is symbolised, in Isaiah 49.13, according to Abraham Ibn Ezra, by this verb of audible rejoicing.

Abraham Ibn Ezra makes a similar comment concerning an earlier verse in Isaiah, which contains the same pairing of the verb רנן and the subject שמים:

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[127] 1985/1999 JPS translation

[128] Friedlander (1873), 225. He includes a footnote to his translation, indicating, "According to the second explanation the expression must also be figurative; the difference between the two explanations is, that according to the former the nouns 'heaven,' 'earth,' 'mountains,' are used here in a figurative sense, signifying all classes of people according to the latter the verb 'sing' has a figurative meaning."

Isaiah 44.23:

רָנּוּ שָׁמַיִם כִּי־עָשָׂה יְהוָה הָרִיעוּ תַּחְתִּיּוֹת אָרֶץ פִּצְחוּ הָרִים רִנָּה יַעַר וְכָל־עֵץ בּוֹ כִּי־גָאַל יְהוָה יַעֲקֹב וּבְיִשְׂרָאֵל יִתְפָּאָר׃

> "Shout, O heavens, for the Lord has acted;
> Shout aloud, O depths of the earth!
> Shout for joy, O mountains,
> O forests with all your trees!"[129]

Abraham Ibn Ezra's comment:

רנו: דרך משל, כי שמחה גדולה תהיה בישראל כי בעבור ישראל שיגאלו תגלה לכל העולם תפארת השם:

> "*Sing, O ye heavens,* etc. This is a figurative expression; it means: great rejoicing will be through Israel, for through the redemption of Israel the glory of God will be revealed to the whole world."[130]

Again making it explicitly clear that he reads this same phrase as משל, Abraham Ibn Ezra here foreshadows Radak's interpretation of Isaiah 49.13 (see below). The people are happy because Israel is being redeemed, and thus the prophet uses this metaphorical phrases including the joyful singing of the heavens.

The Angels Singing on High

One facet of this interaction between Greek and Jewish thought is centred on the comparison between the Platonic Sirens stationed upon the spheres of heaven producing musical notes, and the Jewish conception of angels (מלאכים) singing praises on high. That

[129] 1985/1999 JPS translation
[130] Friedlander (1873), 204

literature generally focuses on biblical passages such as Isaiah 6, and liturgical material like the קדושה. However, if one believes that it cannot logically be that the heavens themselves are praising God, for instance in Psalm 19, then it could be the beings that dwell in the heavens who are producing this sound. This represents a line of interpretation that does not strictly understand the verses metaphorically, but rather sees the words שמים and רקיע as metonyms for the angels. There are also examples of this suggestion in modern biblical scholarship.[131]

Abraham Ibn Ezra pursues this explanation, that music emanates not from the heavens themselves but rather from the angels. He does not, however, make this point with regard to Psalm 19. Heavenly song as a metonym for the angels, is an idea to which Abraham Ibn Ezra returns in many of his comments on the rest of the book of Psalms. Particularly, he raises the idea of the angels as the origins of heavenly sound in relation to the the verb להגיד, and the heavens (שמים or רקיע). This combination occurs twice with שמים (Psalm 50.6 and 97.6) and once with רקיע (Psalm 19.2- our verse of particular interest). In each

[131] Anderson writes concerning the word שמים in 19.2, "In this verse 'heavens' are personified or, perhaps, the allusion is to the divine beings serving God (see on 89:6)." (Anderson, 168) Psalm 89.6 is relevant here since it applies the verb ידה to the noun שמים, therefore inhabiting the same semantic field as Psalm 19.2. (BDB 3034, p. 392, col. 1 defines the root ידה, in the hiphil as "give thanks, laud, praise".) For this reason, commenting on Psalm 89.6, Anderson repeats his previous point, writing, "'The heavens' (see on 19:1) may signify the 'angelic host' (Cohen), or the 'heavenly beings' (so Davies)." (Anderson, 634) Goldingay specifically objects to the angelic explanation: "the parallelism of heavens and sky shows that the former are the physical heavens and not the metaphysical place of God's dwelling nor the heavenly beings, whom one might imagine doing some proclaiming." (Goldingay, 287) It is more likely that the syntax is a standard feature of biblical poetry, given the ubiquity of such parallelism throughout the Psalter. Nonetheless, the fact that Goldingay raises the point that one could imagine it being the heavenly beings rather than the heavens themselves making sound is of interest.

of these instances, the heavens are the subject of the root נגד in the hiphil, meaning "declare, tell," subsense 4: "publish, declare, proclaim."[132] It is the two examples other than Psalm 19 that draw our attention here: Psalm 50.6 and 97.6. In both of these loci, Abraham Ibn Ezra makes brief comments, connecting the declaration of the heavens to the angels, making it clear that they are the ones telling of God's righteousness (both verses use צדקו as the object of the verb):

Psalm 50.6:

וַיַּגִּידוּ שָׁמַיִם צִדְקוֹ כִּי־אֱלֹהִים שֹׁפֵט הוּא סֶלָה׃

Abraham Ibn Ezra's comment:

> ויגידו - המלאכים לעולם הם עדים, כי אלהים לעולם שופט צדק הוא, וזאת היא התוכחת
>
> "The reference is to the angels. They are perpetual witnesses that God is eternally a righteous judge. This is the reproof."[133]

Psalm 97.6:

הִגִּידוּ הַשָּׁמַיִם צִדְקוֹ וְרָאוּ כָל־הָעַמִּים כְּבוֹדוֹ׃

Abraham Ibn Ezra's comment:

> הגידו - יושבי שמים, כי הם עושים דברי השם
>
> "The inhabitants of heaven declared His righteousness, for they do the command of God."[134]

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[132] BDB 5046, p. 617, col. 1. (ed.) Clines (2001), 599 gives the definition "tell, declare, announce, report, make known, inform; explain, expound."
[133] Strickman (2009), 53. In footnote 15 on the same page, Strickman states, "I. E. renders *And the heavens declare,* and the angels declare."
[134] Strickman (2016), 212. In footnote 12 on the same page, Strickman clarifies, "In other words, *The heavens* means 'the inhabitants of heaven.'"

In his explication of Psalm 50.6, Abraham Ibn Ezra places the angels as testifying witnesses in the trial that the righteous judge Elohim establishes. This testimony is their "declaration" or "telling". Concerning Psalm 97.6, his comment is even briefer, stating that where the psalm has "the heavens declare," it is actually those who dwell in the heavens (a common epithet for the angelic host) who carry out this act of telling or making known. Here we see clear, short explanations from Abraham Ibn Ezra, identifying the sound, specifically the speech, of the heavens, as coming not from the cosmic structures themselves, but rather from the angels.

A Literal Understanding

Whereas elsewhere in the psalms and commenting on the book of Isaiah, Abraham Ibn Ezra shows no sign of accepting the literal existence of music emanating from the spheres of heaven, in his interpretation of Psalm 93.4, he could not be clearer. Commenting on the opening phrase of the verse, "מקולות מים רבים," he writes:

> מקולות מים רבים: יותר מקולות מים רבים שהם אדירים שהם משברי ים יותר אדיר השם המרום וזה לאות כי לגלגלים קולות וכן כתוב ביחזקאל כקול מים רבים ואלה הקולות לא ישמעו החרשים, כאשר לא יביטו העורים מעשה השם נוראים.[135]

[135] This quotation was brought to my attention by Werner (1941), 219, in footnote 133. Werner writes of this occurrence, "Strangely enough, of all biblical passages alluding to cosmic harmony, Abraham Ibn Ezra chooses Ps. 93.4, while he misses such inviting opportunity as those offered by Job 38.7 or 38.37." (Werner (1941), 291). In fact, Abraham Ibn Ezra does comment clearly in support of the music of the spheres in Job 38.7, despite Werner's statement to the contrary. See below.

> "The Lord is mightier on high than the voices of the many mighty waves; that is, the waves. This is a sign that the spheres produce sounds. Ezekiel similarly says, *like the noise of great waters*. The deaf, like the blind cannot see the fear-inspiring works of God, cannot hear these sounds."[136]

Abraham Ibn Ezra makes it clear that the spheres have sounds, "לגלגלים קולות". Strickman writes that according to the exegete, this verse "means, 'God's might is demonstrated by the noise made by the heavenly spheres that are above the earth.'"[137] He (Strickman) refers, in his footnote, to Maimonides' *Guide for the Perplexed* 2.8 as a reference for the noise of the spheres. This passage will be addressed below, but here we find important evidence that there are scholars who read Maimonides as a proponent of the idea that the heavenly spheres produce sound.

What is more, it seems that Abraham Ibn Ezra believes these sounds to be audible, reading the final phrases of his comment. If a deaf person is not able to hear the sound of the spheres, in the same way that a blind person is not able to see, then we must assume that Abraham Ibn Ezra understood the heavenly noise to be audible to those whose hearing is not impaired. This begs the question that has reoccured a number of times in this discussion: could he hear this sound? If not, then why does he not address this inaudibility? Could this be the reason for his confused response to the same phenomenon elsewhere in the canon? Here, Abraham Ibn Ezra clearly supports a literal understanding that the heavenly spheres produce sound. How or why, he leaves unexplained.

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[136] Strickman (2016), 190f
[137] Strickman (2016), 191, footnote 17

Abraham Ibn Ezra uses a proof-text from Ezekiel 1.24,[138] since there too he finds the phrase מים רבים, as in Psalm 93.4, alongside the notion of sound emanating from angels' wings and from God (שדי). While he does assert that the spheres resonate with some sound, there are also connections here to two ideas discussed elsewhere in this thesis: the sound that comes from angels and the sound of God. It seems that the reference to Ezekiel 1.24 is what draws him to this speculation, since there is little indication in Psalm 93.4 of any astronomical or cosmological structures. It rather comes in a passage focusing solely on water as a metaphor through which to consider the strength of God. From a verse that does not mention the heavens or the spheres, Abraham Ibn Ezra derives explicit support for a literal understanding of the doctrine of the music of the spheres in biblical text.

Above, in his commentary on Psalms 50.9 and 97.6, he took references to the music of the spheres and explained them away with the trope of angelic song in the heavens. We also find the direct antithesis of this, elsewhere in the same sage's biblical commentary. In a seemingly clear reference to the sound of angelic or supernatural beings, Abraham Ibn Ezra interprets the verse as a reference to the music of the spheres. Job 38.7, which has appeared sporadically throughout this thesis reads:

בְּרָן־יַחַד כּוֹכְבֵי בֹקֶר וַיָּרִיעוּ כָּל־בְּנֵי אֱלֹהִים׃

[138] Ezekiel 1.24:

וָאֶשְׁמַע אֶת־קוֹל כַּנְפֵיהֶם כְּקוֹל מַיִם רַבִּים כְּקוֹל־שַׁדַּי בְּלֶכְתָּם קוֹל הֲמֻלָּה כְּקוֹל מַחֲנֶה בְּעָמְדָם תִּרַפֶּינָה כַנְפֵיהֶן׃

"When they moved, I could hear the sound of their wings like the sound of mighty waters, like the sound of Shaddai, a tumult like the din of an army. When they stood still, they would let their wings droop." (1985/1999 JPS translation)

> "When the morning stars sang together / And all the divine beings shouted for joy?"[139]

Abraham Ibn Ezra comments on the phrase "בני אלהים":

> ובני אלהים - הם המערכות העליונות ותנועתם, היא רינתם ותרועתם.
>
> "These are the upper systems and their movement, and this is their ringing cry and their burst of noise."[140]

This phrase is most usually understood, as per the translation provided above, as referring to some kind of nonhuman, divine beings. BDB lists this reference along with four others throughout the Bible under subsense 1, part d of the entry for "בן": "applied to supernatural beings."[141] In each of the other four examples listed (Genesis 6.2, 4; Job 1.6, 2.1), the term clearly refers to a being, given the context. Yet, in his comment, Abraham Ibn Ezra describes "בני אלהים" as the "systems" or "frameworks" on high, which move and make sounds. These seem to be none other than the resonating spheres of heaven. I previously showed how the verb רנן, used again here, refers to sonorous praise, and likewise with רוע.[142]

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[139] 1985/1999 JPS translation
[140] My translation (draft)
[141] BDB 1121, p. 120, col. 1
[142] BDB 7321, p. 929, col. 2 gives the definitions, "1. raise a shout. 2. give a blast with a clarion or horn" for the root רוע from which the noun found in Abraham Ibn Ezra's comment, תרועה, is derived. The verb is mainly applied to the context of battle, as "shout a war-cry, or alarm of battle", "sound a signal for war or march", or "shout in triumph." However, subsense 5 is given as "shout with religious impulse… so in public worship with music and sacrifice." Similarly, for the noun תרועה itself, BDB 8643, p. 930 col. 1 gives some military definitions of shouts, and also "shout of joy with religious impulse" (subsense 3) and "shout of joy, in general" (subsense 4).

These two comments concerning diverse biblical phrases appears in stark contrast to the other examples of Abraham Ibn Ezra's writing discussed above. It is difficult to reconcile the various ways in which the sage may or may not be, on the whole, in agreement with the Greek idea. Nonetheless, these two instances (Psalm 93.4 and Job 38.7), both with very brief comments, give some support to a literalist understanding.

Psalm 19

I will now address Abraham Ibn Ezra's commentary on the main psalm in question here, Psalm 19, since it presents a number of challenges, in order to try and decipher his position on the music of the spheres. The commentary he gives on Psalm 19 is extensive and complex. It spans ideas about astronomy, philosophy, grammar, and mysticism, and the resulting message is not clear. He begins by highlighting the importance of the psalm, and indicating its main concerns:

> השמים מספרים - זה המזמור נכבד מאד והוא קשור עם מלאכת השמים ועתה אפרשנו בדרך קצרה, רק לא יבינהו מי שלא למד חכמת המזלות.
>
> "THE HEAVENS DECLARE THE GLORY OF GOD. This is a very important psalm. It deals with the heavenly apparatus. I will now briefly explain how. However, only one who has studied the science of the stars will understand my explanation."[143]

[143] Strickman (2006), 210

Abraham Ibn Ezra indicates from the outset that this psalm contains advanced astrological concepts and pertains to the spheres, constellations, and any other heavenly bodies (מלאכת השמים) that make up the cosmos. He continues, in this vein, commenting on this first phrase, "the heavens declare," word by word, establishing the movement of the spheres, whether they change or remain at one speed, and human perception of the cosmos:

> השמים - תנועת הגלגלים שהן שוות בדרך אחת ושונות בדרך אחרת והולכות על דרך ישרה בעצמם, ואיננה ישרה כנגד יושבי הארץ, ומדת התנועה לא תוסיף ולא תגרע בראיות גמורות והיא תוסיף ותגרע במראית העין…
>
> והנה השמים כמו מלמדים מורי צדק על דרך, או שיח לארץ ותורך…
>
> ומלת מספרים – בעבור היותם עומדים על מתכונת אחת וזה הוא כבוד השם.
>
> "THE HEAVENS. The reference is to the movement of the spheres that are equal in one way but differ in another way. They travel in an of itself straight path. However, from the standpoint of the people of the earth their path does not appear to be straight. There is positive proof that the pace of their movement does not speed up or slow down. However, to the eye their movement appears to increase or slow down….
>
> The heavens are teachers. They are righteous teachers. The heavens are said to instruct in the same sense that the earth is said to teach. Compare, *Or speak to the earth, and it tell thee* (Job 12.8)...
>
> Scripture reads *declare* because the heavens are unchangeable. This is God's glory."[144]

From the first word of the psalm, Abraham Ibn Ezra indicates that it concerns the spheres of heaven. However, he is more interested in their movement than their sound. It is surprising that he does not address in detail the notion of the heavens creating noise,

[144] Strickman (2006), 210ff

given that this is the plain meaning of the psalm.[145] He expounds at length on the notion of whether the spheres move with varying speeds or fixed motions, and how humans can or cannot perceive this. While he has not yet reached the idea of the heavens making noise, he seems to be setting up the proposition that human perception of the movement of the spheres is the central way in which there is communication between the heavens and people on earth.

Strickman writes, in reference to Abraham Ibn Ezra's comment on מספרים, "In other words the heavens declare that God created that which is unchangeable."[146] He understands Abraham Ibn Ezra's preface about the way in which the heavens move with a fixed pattern and speed as the substance of their declaration. Their unchangeability is evidence that God created an eternal, unchangeable world. Therefore, there is no audible

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[145] Elsewhere in Abraham Ibn Ezra's psalms commentary, on Psalm 89.6, he also introduces the idea of the heavens' sound as being inherently connected to motion. The verse states:

וְיוֹדוּ שָׁמַיִם פִּלְאֲךָ יְהוָה אַף־אֱמוּנָתְךָ בִּקְהַל קְדֹשִׁים׃

Abraham Ibn Ezra comments:

וטעם ויודו שמים בתנועתם תמיד על פלאיך ועל אמונתך,אף היא בקהל קדושים - הם המלאכים המניעים.

"The meaning of *So shall the heavens praise Thy wonders* is, 'the heavens by their constant motions praise Thy wonders and Thy faithfulness.' Furthermore, Thy faithfulness is in the assembly of the holy ones; that is, the angels who propel [the spheres of heaven]." (Strickman (2016), 150).

He invokes the angels, as discussed above with regard to Psalm 50.9 and 97.6, perhaps here more clearly indicated by the text itself, given the explicit reference to the "congregation of holy ones" in the second half of the verse. However, the angels here are interacting with the heavens in driving their movement. All of this explanation is location in his description of a verb of vocal praising/lauding to the heavens (להודות, see BDB 3034, p. 392, col. 1). Abraham Ibn Ezra immediately brings up the heavens' motion, not its sound. Strickman includes footnote 18 to his translation here, indicating "See Ps. 19:2." (Strickman (2016), 150)

[146] Strickman (2006), 212 in footnote 12

sound intended by the word מספרים. Instead, it conveys a metaphorical communication to humans through the heavens' constant existence, of the eternity of God's creations.

Commenting on the second stitch of Psalm 19.2, Abraham Ibn Ezra continues:

> ומגיד הרקיע - ...דברים מתחדשים בכל יום, על כן כתוב ומעשה ידיו כי עם השמים כתב כבוד אל
>
> "AND THE FIRMAMENT SHOWETH HIS HANDIWORK… New things come into being every day. Hence Scripture states: *And the firmament showeth his handiwork. The heavens declare the glory of God* is in contrast to *And the firmament showeth his handiwork.*"[147]

Abraham Ibn Ezra illustrates here how the two halves of 19.2 are not what we might describe now as in synonymous parallelism, but rather antithetical parallelism. This comes from his conviction that רקיע refers to the changing, daily recreated elements of the world, like "air," as compared to the unchangeable שמים, described above.[148] Here, I see a parallel interpretation to Rashi's reference to the morning liturgy of renewed daily creations (see footnote 121). While not explicitly stating as such, Abraham Ibn Ezra proposes the same metaphorical understanding as Rashi, that the evidence of the changing and evolving world is indicated by the imagined speech or sound of the heavens.

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[147] Strickman (2006), 212f

[148] Radak, in his commentary on the verse proposes exactly the antithesis of this statement, that these two halves of the verse convey the same message and are not opposed to one another.

Abraham Ibn Ezra continues to comment on the mention of day and night in Psalm 19.3 as pertaining to the changing constellations, referring to *Sefer Yetzirah,* an early mystical work probably originating from the Talmudic period.[149] After commenting on this verse, he offers two different definitions of the word יביע which contribute to the question of whether there is anything sonorous implied in these verses:

> יביע - שלא יפסוק כמו מבוע, או כמו יגיד, הנה יביעון בפיהם, כמו: אחוך שמע לי.
>
> "UTTERETH. The word *yabi'a* (uttereth) means flows. It does not stop. On the other hand the meaning of the word *yabi'ia* might mean, uttereth. Compare, *Behold they bark out* (yabi'un) *with their mouths* (Ps. 59:8). Compare, *Achavkah* (I will tell thee) in *I will tell thee, hear thou me* (Job 15:17)."[150]

In light of his initial comments on the eternal, unchanging movement of the heavens versus the constantly evolving firmament/air, Abraham Ibn Ezra now returns to the notion of movement. However, he does also suggest the sonorous definition of יביע by comparing it to יגיד, and citing the use of the verb in Job 15.17. This is the kind of statement that would be typical elsewhere in his biblical commentary, where he offers various linguistic definitions, in the terse style of a grammatist. Here, however, it forms just one part of his long and complex thoughts on Psalm 19. Taking just his comments on

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[149] On Abraham Ibn Ezra and mysticism, see Norman Roth, ABRAHAM IBN EZRA - MYSTICISM, Iberia Judaica IV (2012): 141-150. Roth notes that, while Abraham Ibn Ezra is generally understood to be "a supreme rationalist, a scientist, mathematician and physician, philosopher and author of fundamentally rationalist commentaries on the Bible," (141) it is difficult to separate mystical tendencies from his metaphysical speculations. It is noted that there was a belief in the nineteenth-early twentieth centuries that Abraham Ibn Ezra wrote a commentary on *Sefer Yetzirah* that is no longer extant. However, Roth presents the now well-established arguments against this proposition on pages 148-9. Nonetheless, the possibility of a mystical side to Abraham Ibn Ezra's exegetical identity is established.

[150] Strickman (2006), 214

this verb, it seems that Abraham Ibn Ezra favours the definition of יביע that is not to do with speech, in a way that is coherent with his otherwise metaphorical stance on the psalm.

The crux of Abraham Ibn Ezra's understanding of Psalm 19 comes with his comments on verse 4. He first indicates that verses 2-3 should not be taken literally, by reminding the reader that the heavens do not have a mouth, and therefore cannot communicate verbally and audibly, as human beings can. On the first word of 19.4, he writes briefly and clearly, "אין - הזכיר כי אין לשמים פה, כגון: בן אדם". This reflects the kinds of interpretations of many other exegetes, stating the obvious problem with the entire lexicon of the psalm and therefore indicating that it must be understood metaphorically, and not literally.

At this point, Abraham Ibn Ezra enters into a long discourse of a different genre. He shows his grammarian credentials, as he outlines the difference between the various terms used concerning speech (אמר, דיבור, קול) and brings examples to clarify. In verse 5 he includes קום in this list, as "writing," to accompany the various speech and language words he has already explained. The sage brings together the grammatical, philosophical, astronomical, and mystical elements that he has covered. This is perhaps the clearest statement from throughout his writings of how Psalm 19 should be understood as metaphor, as he writes:

> והנה הזכיר, כי במראה העין של גוף ומראה עין הנשמה הפנימית - החכמה, יראה אמתת ספור שמים ומה שיגיד הרקיע.

> "Scripture notes that wisdom will show the truth which heaven declares, and likewise what the firmament shows, by the vision of the corporeal eye and the perception of the eye of the inner soul."[151]

The "vision of the corporeal eye" seems quite clear; people can see the constellations and movements of the heavenly bodies. Again there is a similarity with Rashi, who connects humans' ability to see with their response of praise, as he states concerning Psalm 19.5, "בקצה תבל מליהם שהכל מדברים בנפלאות שהם רואים" (see above, page 83). However, Abraham Ibn Ezra's reference to the "perception of the eye of the inner soul" is somewhat more elusive. Perhaps this is the mystical speculation to which he referred in bringing up *Seifer Yetzirah* previously. It could also relate to a comment made concerning verse 2, not quoted above, "והנה היודע דרכי העגולות יודע דעת עליון". Maybe the "eye of the inner soul" relates to this "knowledge of the Most High." Despite the lack of clarity regarding exactly how we might perceive this true wisdom, Abraham Ibn Ezra is certainly giving a metaphorical reading of the psalm.

In Psalm 19, where the plain meaning of the phrases conveys that the heavens produce sound, Abraham Ibn Ezra does not address the issue directly. Rather, he goes on a long and multifaceted textual journey. This is quite out of character for the sage who generally states the plain meanings of texts where they are clear, or gives brief comments to explain to the contrary, as with Psalm 50.9 and 97.6, and Isaiah 44.23 and 49.13 above. The general outcome of his long-winded comments is, as stated, a metaphorical understanding of the speech and sound language of Psalm 19. It seems that, to Abraham Ibn Ezra,

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[151] Strickman (2006), 215 in his literal translation in footnote 33

people perceive the glory of God through their observations of both the fixed and changing movements of the cosmos, symbolised in Psalm 19 by the speech and sound of the heavens. However, with the extensive grammar, astronomy, and mysticism included in this commentary, it seems that he is interested in many other ways in which this psalm is important, and less concerned with clarifying whether or not (the result being, it seems, not) we could envision hearing the sounds of the heavens.

Overall, Abraham Ibn Ezra is inconsistent with regards to the question of the music of the spheres. He engages in the same questions as other thinkers, invoking the angels and metaphor, and here with Psalm 19 discussing the balance between the human perception of the universe as compared with what the heavens might actually be doing. However, it is difficult to reconcile his wide-ranging genres of thought and diverse opinions. One solution could be seen in his context. If we understand that Abraham Ibn Ezra spent a great deal of time in Islamic Spain, then perhaps he was mirroring the work of the polymaths amongst whom he lived, who would engage with grammar, philosophy, astronomy, and exegesis with little pause for breath between these topics. Or perhaps he was truly imbibing the spirit of Plato. Taking the texts of the *Timaeus* and the myth of Er together, as a holistic picture of Plato's musical philosophy, the balance between mathematics and music, abstractions and audible phenomena is crucial. It could be that Abraham Ibn Ezra was also attempting a similar balance between the numerical and ethical, the practical and the speculative, in his comments on the music of the spheres.

There is no simple way to coherently present the complicated comments Abraham Ibn Ezra makes in different places on this topic. All that I can conclude is that he is engaged in a similar realm of topics as other exegetes and philosophers. Perhaps the complexity and diversity of his comments show the lack of clarity in his mind surrounding the whole notion of the music of the spheres and how to incorporate this cosmological idea into his worldview and religious outlook.

Maimonides

Maimonides, the physician, physicist, and philosopher born in the 1130s in Córdoba, worked throughout northern Africa, ultimately settling in Egypt, where he died in Fostat in 1204. He is generally considered the quintessential Aristotelian amongst Jewish philosophers. As such, it would be easy to assume that Maimonides would reject the theory of the music of the spheres, as Aristotle did, in favour of the soundless universe, suggested by Plato's antagonist on this topic. In fact, Werner makes this very assumption, characterising Maimonides as, "the most consistent and significant opponent of the entire doctrine,"[152] mentioning his Aristotelian inclination. However, in this case, as in a number of instances,[153] Maimonides does not agree with his greatest Greek influence.[154]

In his seminal philosophical work, the *Guide for the Perplexed*, part II, chapter 5, Maimonides uses Psalm 19.2 to support his adherence to the idea that the heavenly spheres produce sound, as he writes:

> "Scripture supports the theory that the spheres are animate and intellectual, i.e., capable of comprehending things: that they are not, as ignorant persons believe, inanimate masses like fire and earth, but are, as the philosophers assert, endowed with life, and serve their Lord, whom they mightily praise and glorify; compare, 'The heavens declare the glory of God,' etc. (Ps. 19:2). It is a great error to think

[152] Werner (1941), 291

[153] The most famous example probably concerns diverse theories about the creation of the world. While Aristotle muses about an eternal universe, Maimonides firmly propounds creation ex nihilo. See Kenneth Seeskin, *Maimonides on the Origin of the World*, (Cambridge University Press, 2005)

[154] In his summary of this part of the *Guide,* Ivry notes how "Maimonides embarks upon a discussion of astronomical issues in chapters 8-11, reporting on the advances made in the field since Aristotle's day" (Ivry, 94). While Ivry is not clear about the details in this precis, perhaps this is one of Maimonides' updates to Aristotle's work.

> that this is a mere figure of speech: for the verbs 'to declare' and 'to relate,' when joined together, are, in Hebrew, only used of intellectual beings. That the Psalmist really means to describe the heavens' own doing, in other words, what the spheres actually do, and not what man thinks of them, may be best inferred from the words, 'There is no speech, nor language, their voice is not heard' (ver. 4). Here he clearly shows that he describes the heavens themselves as in reality praising God, and declaring His wonders without words of lip and tongue…. Only ignorant or obstinate persons would refuse to admit this proof taken from Scripture."[155]

Maimonides is clear that he sees no other option: these verbs must mean that the heavens are "intellectual beings" and that "the Psalmist really means to describe the heavens' own doing, in other words, what the spheres actually do, and not what man thinks of them". The heavens themselves must be doing or producing something, not simply appearing as such or metaphorically serving this purpose in the biblical text and people's perception. This is in direct opposition to Rashi's position. As I will show below, Radak states Maimonides' opinion and then proposes exactly the anthesis, following Rashi instead; that the psalm is referring to the image of the heavens' words in people's minds, and not any actual sound emanating from on high. In the way in which Radak disagrees with Maimonides directly, he makes it clear that the sage was understood in the immediate centuries following his life to take the doctrine of the music of the spheres literally and to deem it a Jewishly acceptable theory in this way.

It is still not obvious exactly what kind of sound Maimonides believes might emanate from the heavens, and how that sounds is perceivable by humans, or not. He uses Psalm 19.4 to clarify that the heavens do not have mouths or lips like people, and do not

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[155] Friedlander (1904), 159

produce speech like human beings. He does not, however, go on to discuss what sound they do produce. Ivry writes of Maimonides' nuanced position, "The distinctions Maimonides draws here will play an important role in the *Guide* in his belief in the 'silent speech' of the celestial spheres,"[156] indicating this exact section of text, "*Guide,* 2.5"[157] in a footnote. It is possible that Maimonides espouses a synthesis of the music of the spheres and Aristotle's silent universe, or that Ivry is attempting to reconcile the distinctly un-Aristotelian position we find articulated in the *Guide* with the general philosophical leanings of Maimonides elsewhere. Whether this sort of attempted synthesis was Maimonides' intention, or the suggestion of a modern scholar reading the text, we cannot know.

This suggestion of a music of the spheres that is present, yet inaudible, is not uncommon. In fact, the inability of humans to hear the music of the spheres could be seen as a compelling similarity between this psalm and that Greek thought. Pythagoras mythically could hear their harmony because of his extraordinary abilities, but it was generally agreed amongst Pythagoras and Plato's disciples that despite their constant resounding, humans could not perceive the music of the spheres. Ivry presents his brief yet nuanced comment, that Maimonides did appreciate the sound of the heavenly spheres but that this sound was inaudible or silent, which could concur with the Greek thought in this way.

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[156] Ivry, 36

[157] Ivry, 253 (footnote 18) The footnote also includes a reference to Josef Stern on "Maimonides on Language and the Science of Language." A fuller exploration of this topic and Maimonides' theories on the science of speech and language is, however, beyond the scope of this thesis.

There are those, however, who read the *Guide* in quite a different way, adopting the antithetical approach with no such nuance. Werner writes of how "in his *Moreh* he unequivocally expresses his antagonism."[158] Simon reads this passage in the same way, understanding Maimonides to be proposing that "we must accept the view of Aristotle, who denied the existence of the music of the spheres, even though the Sages believed in it, because in matters relating to physical nature our decision must be based on observation and experiment."[159] The text to which these scholars refer is *Guide for the Perplexed*, Part II, chapter 8:

> "It is one of the ancient beliefs, both among the philosophers and other people, that the motions of the spheres produced mighty and fearful sounds. They observed how little objects produced by rapid motion a loud, shrilling, and terrifying noise, and concluded that this must to a far higher degree be the case with the bodies of the sun, the moon and the stars, considering their greatness and their velocity. The Pythagoreans believed that the sounds were pleasant, and, though loud, had the same proportions to each other as the musical notes. They also explained why these mighty and tremendous sounds are not heard by us. This belief is also widespread in our nation. Thus our Sages describe the greatness of the sound produced by the sun in the daily circuit in its orbit. The same description could be given of all heavenly bodies. Aristotle, however, rejects this, and holds that they produce no sounds. You will find his opinion in the book The Heavens and the World (De Cœlo). You must not find it strange that Aristotle differs here from the opinion of our Sages. The theory of the music of the spheres is connected with the theory of the motion of the stars in a fixed sphere, and our Sages have, in this astronomical question, abandoned their own theory in favour of the theory of others. Thus, it is distinctly stated, 'The wise men of other nations have defeated the wise men of Israel.' It is quite right that our Sages have abandoned their own theory: for speculative matters every one treats according to the results of his own study, and every one accepts that which appears to him established by proof."[160]

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[158] Werner (1941), 291. In footnote 155 he cites "*More* II, #8" as the source of this apparent opposition.
[159] Simon, 273, footnote 88
[160] Friedlander (1904), 163

When this excerpt is read in the context of II, 5 (above), and the plain meaning of the text carefully considered, then it is clear that Maimonides is not opposing the music of the spheres, but rather supporting the theory. He mentions Aristotle and the soundless universe, but does not agree with him. He does not, as Simon and Werner suggest, imply that observation and experiment support Aristotle's position, but rather that the sages are correct to use their reasoning to choose to follow the Pythagorean-Platonic line. This mention of Aristotle by Maimonides is a detour from his main argument and does not indicate concurrence, but rather just an awareness of the various intellectual positions on subject. Maimonides accepts the Pythagorean stance, and states how the classical rabbinic sages have similarly adopted the doctrine. I refer back to Strickman, who, as I noted above on page 94, asserts that this is the clear position Maimonides takes here.

The reason Maimonides gives for his, and the sages', acceptance of the music of the spheres is that the "wise men of other nations" know more and have better proof concerning this specific topic. To Maimonides, this is not a problem, but a logical imperative. This raises the question of the relationship between Greek and Jewish thought, and whether there was a direct influence of the former on the latter. Rather, as I noted above, it is likely there was a common antecedent to both intellectual traditions. Haar (see footnote 28) suggests this too, referring to Talmud Yoma 20b as an example of how this cosmological belief might have been learnt from Chaldeans or Babylonians. Maimonides uses this same talmudic prooftext, BT Yoma 20b, in discussing how the

theory of the music of the spheres has been adopted from outside of Jewish thought, and incorporated into the tradition.

Despite this conviction that "The wise men of other nations have defeated the wise men of Israel," it is still important to Maimonides to authenticate his support of the theory of the music of the spheres with biblical text. As Feldman writes, "Maimonides (*Guide for the Perplexed* 2.5) finds the source of the concept of the music of the spheres in Psalm 19.2."[161] This is a common device of rabbinic and medieval Jewish writers. Biblical verses were necessary as antecedents for any theory or belief that a thinker wanted to cement as a respectable Jewish idea. As such, Maimonides brings Psalm 19.2 as his biblical backup for being able to throw his lot in with the Pythagorean-Platonic doctrine of the music of the spheres, rather than favouring his usual classical Greek source, Aristotle.

[161] Feldman (1996), 516

Radak

David Kimchi, the twelfth- to thirteenth-century commentator and philosopher from Provence, is known by the acronym "Radak." He writes explicitly against the belief in cosmic music emanating from the spheres of heaven. In his comments on Psalm 19, he specifically cites Maimonides and Abraham Ibn Ezra (as well as including a reference to Rashi, despite the lack of a specific mention of his name) as he outlines his contestation of theories that accept the Greek doctrine. Like Rashi, the core of Radak's argument is that the heavens themselves do not make sound, but rather that when human beings see the wonders and miraculous creations in the heavens, they express their praise of God. The sage is clearly responding to the Maimonidean acceptance of the doctrine, and attempting to prove the supremacy of Rashi's metaphorical position. Expounding on the first verse of Psalm 19, he writes:

> השמים מספרים כבוד אל: יש מפרשים (בעל התרגום וזולתו): כדרך או שיח לארץ ותרך (איוב יב ח); וכן שאל נא בהמות ותרך (שם ז); וכן השמים מספרים. כי מהנפלאות והמעשים הגדולים שאדם רואה בשמים יספר האדם כבוד האל; וזהו שאמר אין אמר ואין דברים בלי נשמע קולם, כלומר: לא שהם מספרים בדברים, אלא ממה שרואה אדם בהם מספרים בני אדם כבוד אל
>
> **"The heavens declare…** There are interpreters (Targumist and others) who take this as like *"or speak to the earth, and it shall teach thee"* (Job xii, 8), and "*Ask now the beasts, and they shall teach thee"* (ibid. 7); and so *The heavens declare,* for from the wonders and mighty words which man sees in the heavens he declares the glory of God. And this is what he (means when he) says: *There is no speech nor words; Their voice cannot be heard,* suggesting not that they declare in words, but from what man sees in them the sons of men *declare the glory of God.*"[162]

[162] Finch, 85

Radak addresses the question that Maimonides raised: do the verbs ספר and הגיד necessarily imply sonorous, audible speech or sound, or can they be used metaphorically? Maimonides is clear that he sees the heavens themselves as resounding. In response, Radak pursues a different train of argument. He uses quotations from Job 12.7-8 to show other examples of biblical verses that have entities that are not generally known to speak (the earth, beasts) communicating. This is the same verse that Abraham Ibn Ezra presents in his comment on Psalm 19.2 as well (see above). Radak's main point is that the verses intend to show how humans perceive these entities (seeing the wonders in heaven, observing the earth and animals), rather than their actually saying words or creating sound. He then presents Psalm 147.15 as an example of a verse in which terms similar to those in Psalm 19 (words in the semantic realm of "speech" and "words") are used metaphorically. Radak writes:

> ונוכל לפרש: מספרים על השמים ועל הרקיע עצמם, כי במהלכם ובסבובם על סדר נכון יראה כבוד האל יתברך; ואותו הוא הספור וההגדה, על דרך: השלח אמרתו ארץ עד מהרה ירוץ דברו (תהלים קמז טו). ומה שאמר:אין אמר ואין דברים, אין דברים כדברי בני אדם, אלא המעשה שיעשו הם הדברים והם הספור וההגדה; וכן אמר: ובקצה תבל מליהם.

> "We are able to explain *declare* with reference to *the heavens* and *the firmament* themselves, for by their course and circuit in an appointed order the glory of God - Blessed be He! - is seen; and that is the "declaring" and "telling," on the analogy of
>
> "*He sendeth out His commandment upon the earth'*
> *His word runneth very swiftly."* - (Ps. cxlvii. 15.)
>
> And when he says, *There is no speech nor words* (he means) *no words* like the words of men, but the work they do stands for the words, and constitutes the "declaring" and the "telling" and so he says: *And their speech to the end of the world.*"[163]

[163] Finch, 85

From his use of Psalm 147.15, Radak returns to his earlier point, now with this biblical precedent. With the understanding that these terms can be used analogically, the Psalmist makes their metaphorical intention clear a few verses later (19.4). Radak sees this phrase as evidence that the speech language is a metaphor for the works of heaven, creations, and observable phenomena that people are able to see and appreciate.

Having explicated at some length the position of "The rabbi and teacher of justice, the great sage, our rabbi Moses" (Maimonides), Radak goes on to disagree with his stance. In Radak's words, Maimonides' opinion, and that of the "Philosophers" (i.e. ancient Greeks) is that these verses testify to how "the spheres are living intelligences, serving God and praising him with great praise, and singing His glory in great and mighty songs."[164] Having quoted the verse, Radak reiterates a point made by Maimonides in the *Guide* (2.5), that the "declaring" and "telling" of the spheres is not by means of humanly conceived language (אינם בפה ובלשון). It is clear that Radak understands Maimonides to take the verses literally, accepting in its entirety the doctrine of the music of the spheres. It is with this clear reporting of Maimonides' position that Radak disagrees.

Radak states that these verbs, as before, should be understood metaphorically. He writes: "כמו ציור שיציר האדם בלבבו מדברי שבח והודאה מבלי שיוציאם בשפה", "like an image of the words and praises which a man forms in his mind without their actual issuing forth in speech."[165] The use of this simile makes it abundantly clear that Radak is whole-heartedly

[164] Finch, 85
[165] Finch, 85

endorsing the same rationalist-metaphorical position that was evident in Rashi's commentary above. The speech is only true in people's minds, since the psalm cannot possibly be saying that the heavens "issue forth speech" anywhere except in metaphor.

Radak reaffirms his central point with a pithy comment on Psalm 19.5a: "והנה מעשיהם דבריהם", "See, their works are their words."[166] The works of the heavens, the luminaries that people see in the sky, and the creations they experience on earth, are symbolised by the "words" they (the heavens) speak in the psalm. It is clear to Radak that the only words being spoken are the songs that these wonders induce in humanity to praise God.

This position is reiterated elsewhere in Radak's biblical commentary. While this discussion is mostly concerned with Psalm 19, it is important to note where parallels are abundantly clear. Concerning Isaiah 49.13, in which the heavens (שמים) are the subject of the imperative of רנן, Radak comments as follows:

Isaiah 49.13:

רָנּוּ שָׁמַיִם וְגִילִי אָרֶץ יִפְצְחוּ [וּפִצְחוּ] הָרִים רִנָּה כִּי־נִחַם יְהוָה עַמּוֹ וַעֲנִיָּו יְרַחֵם׃

"Shout, O heavens, and rejoice, O earth!
Break into shouting, O hills!
For the Lord has comforted His people,
And has taken back His afflicted ones in love."[167]

Radak's comment:

רנו שמים: דרך משל כאלו כל העולם שמח בצאת ישראל מהגלות:

[166] Finch, 86
[167] 1985/1999 JPS translation

> "*Shout, O heavens:* this is a metaphorical expression, as if the whole world is happy at Israel's going forth from exile."[168]

Here, Radak uses the phrase conventionally employed throughout rabbinic and medieval Hebrew exegesis to refer to a metaphorical interpretation, "דרך משל", (seen above in Abraham Ibn Ezra's comment on Isaiah 44.23, and this same verse). Radak also uses word "כאלו," ("as if"), emphasising that the idea of sound emanating from the skies is not to be taken literally. The joyful singing of the heavens is a metaphor for the happiness that the whole world will exhibit, when Israel goes forth from exile. Since his comment is brief, it is not clear if Radak intends to say that there is some sonorous rejoicing occuring (from people), or whether the audible aspects of the phrase are entirely allusionary.

In various places throughout his commentary, Radak clearly adheres to the metaphorical school of engaging with the music of the spheres. He knows the earlier sages' positions, and stays close to Rashi's comments while distancing himself distinctly from Maimonides. As such, we see, from the latest of these five medieval scholars, that the debate concerning how to understand scriptural references to the music of the spheres was clearly delineated between the figuratives and the literalists.

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[168] My translation (draft)

As has been shown, diverse sages, commentators, and philosophers from the classical rabbinic era of the second to sixth centuries, to the late medieval period engage with Psalm 19 and raise the question of the music of the spheres. There is a clear history of textual exegesis and discourse surrounding this text and that theory. Many scholars raise the same questions: does Psalm 19 refer to the music of the heavenly spheres? Is this music sonorous and potentially audible? Or rather a metaphor for some other cosmic phenomenon, like the light emanating from the sun? What is the relationship between the idea of angelic song in heaven, and the music of the spheres? While these queries form the basis of virtually all of the textual and intellectual reception of these biblical verses as they relate to the music of the spheres, there is no clear consensus. The texts I have presented span various positions. There are those who take Psalm 19.2 literally to indicate that the heavens produce noise, and others who cannot rationally abide by this suggestion and therefore find all manner of metaphorical possibilities through which to read the text. Some indicate that the psalm employs a metonym, understanding the "heavens" to refer to the angels who live in the heavens who create this heavenly music, while others show more concern for the audibility or silence of this sound. However, despite the diverse conclusions these texts reach, Psalm 19 is clearly a focus for Jewish premodern speculation concerning the music of the spheres.

The Music of the Spheres in the Early Modern Period

In his important aforementioned article, which summarises many aspects of this topic, Shiloah writes of two specific Early Modern scholars who relate to the music emitted by the heavenly spheres. They do not specifically cite Psalm 19, but are nonetheless important sources to mention at the close of this discussion.

The Spanish native, Isaac ben Haim ben Abraham Cohen, wrote a Hebrew treatise at the turn of the sixteenth century called *Eitz Hayim.* Shiloah describes the section of *Eitz Hayim* that deals with celestial music:

> "Given that the spheres are like concentric cycles of different size, the sounds they produce in their rotation are of different harmonious proportions. Thus, the seven sounds produced by the planets, which correspond to the rungs of Jacob's ladder, imply a formation resembling a scale similar to that of terrestrial music. Nevertheless, since the spheres are simple, their sounds and the sweet music produced by them to exalt the glory of the Creator are also simple. Accordingly, their harmonious effect is unobservable: the harmony of the spheres belongs to the realm of speculation, and as 'perfect harmony', it is devoid of any physical reality."[169]

Isaac ben Haim ben Abraham Cohen includes this cosmic description in the midst of a section dealing with the two musics - earthly and heavenly - and how they have different impacts and receptions by God. Here we see the incorporating of Platonic and traditional, theological Jewish streams of thought by a recently-exiled Spanish sage, creating a holistic ideology of both hellenistic and hebraic inheritances.

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[169] Shiloah (2018), 53

The final thinker to be mentioned here has already appeared in this thesis: Judah Moscato of sixteenth-century Mantua and Venice. He presents essentially the classical Pythagorean theory of the harmony of the spheres. In Moscato's *Higayon B'chinor,* we read*:*

> "their [the celestial bodies'] paces were founded on perfect harmonic relations and ratios... From within the ranks of the philosophers there was no lack of scholars who believe, as in the second part of *Sefer ha-shamayim we-ha-olam*, that those precious bodies will in their movements produce sweet sounds, and the fact that we do not perceive them they attributed to the prolonged habit of hearing them until, as a result, our perception is cancelled"[170].

Moscato discusses the Pythagorean, Platonic, and Aristotelian texts on the subject, including a mention of the audibility or lack thereof of the sound. He then continues to explain how the music of the spheres is inherent to Judaism and was "stolen" by the Greeks. This represents the kind of apologetic argument that Shiloah indicated is prevalent in Moscato's writing. The sermon states: "Yet what they say is stolen, for it belongs to us and our wise ones— in Beth-el you will find it in the Midrash of Rabbi Simeon bar Yohai… This opinion already spread among our sages in general, as when they said (in *Yoma*, end of chapter i)."[171] Following his mention of Rabbi Simeon bar Yohai, Moscato includes a quotation which Miletto and Veltri indicate comes from *Zohar Hadash*, *Bereshit*, I:26a (footnote 92 on page 72). They also note that moscato uses the phrase "in Beth-el", a reference to Jacob in Genesis 28.19, as a general way of implying a Jewish approach or belief. Moscato also refers to the section of BT Yoma with which I began this discussion concerning post biblical Jewish texts that portray the music of the

[170] Miletto and Veltri (2011), 70
[171] Miletto and Veltri (2011), 71f

spheres (20b), as support for his claim that the sages of Jewish antiquity believed in the doctrine. The Italian sermoniser continues to refer to texts which have formed an important part of this thesis, as proof of the Jewish belief in and engagement with the music of the spheres, for instance Abraham Ibn Ezra's comment on Psalm 93.4 and Maimonides' *Guide* II, 8. Moscato clearly inherits this vast Jewish textual heritage concerning the music of the spheres, and enthusiastically propounds the theory in his sixteenth century sermon, *Higayon B'chinor.*

In this way, through the writings of sages such as Isaac ben Haim ben Abraham Cohen and Judah Moscato, we see how the music of the spheres continues and extends its reach in Jewish discourse far beyond Psalm 19 and into the premodern age. There still existed great debate surrounding the divergent Platonic and Aristotelian approaches concerning the sound or silence of the heavens, and how they have been adopted by Jewish thinkers. No consensus can be discerned in the wide corpus of Jewish thought. However, the allure of the notion of music emanating from the spheres of heaven continues to bemuse and entice Jewish minds throughout the centuries.

Conclusion

This thesis has presented the various ways in which pre-Scientific Revolution, rationalist Jewish texts engage with the theory of the music of the spheres, as it appears in classical Greek philosophy. I have addressed how various textual traditions from the biblical, rabbinic, medieval, and Early Modern periods have incorporated, questioned, embraced, and rejected the Pythagorean and Platonic doctrines. I surveyed the extant material concerning first four categories into which I divided this material:

1. The Greek myth of Pythagoras' discovery of music and the proportions defining harmonic relations appears in various Jewish texts, in competition with Yuval from Genesis 4.21, both indirectly and directly, with similar discourses in contemporaneous Christian sources. Moses Ibn Ezra attempts to prove the primacy of Judaism in the invention of music via the character of Yuval from the prediluvian biblical generations. In his work, "*Arugat Habosem*", the eleventh-century philosopher and poet writes of the father of all musicians, implicitly countering the Pythagorean claim. Judah Moscato directly addresses this Greek-versus-biblical conflict, in claiming that anyone who believes that Pythagoras discovered music has "spread a lie." He fervently promotes Yuval as the source of music and harmony, in a polemical, apologetic sermon.

2. Plato writes in the myth of Er (*Republic,* book X) of the celestial Sirens sitting atop the rotating spheres of heaven, singing notes of various frequencies. It is not difficult to make the connection between these heavenly beings and the trope of angels on high singing praises in Jewish textual tradition. With key passages in Isaiah and Ezekiel, continuing through liturgy, rabbinic literature, exegetical and mystical texts, the theme of angelic song is clearly attested in Jewish sources. Shiloah particularly presents many of these texts, connecting these ideas to the music of the spheres explicitly, in his chapter, 'Theory of Heavenly Harmony and Angelic Song in Jewish and Islamic Sources.' This idea reappeared in category five, in Chapter Six, as some used the song of the angels as an explanation for the psalter's claim that the heavens declare and speak. They propose that the "heavens" are used in Psalm 19's verses as a metonym for the angels. As such, we see the intertwining of the ideas of the music of the spheres and the song of the heavenly beings.

3. Boethius' codified the categories of *musica mundana* and *musica humana,* providing a succinct framework for understanding the way in which the music of the spheres is connected to the music of the individual's body and soul. This paradigm appears in Jewish texts primarily influenced by Arabic philosophy, itself highly dependent on classical Greek thought. For example, Sa'adia Ga'on's musical passage in *The Book of Beliefs and Opinions*, despite some challenges in its translation and interpretation, presents the theory that musical modes and

scales, themselves connected to cosmic schema, have a great impact on the human body, emotions, and spirit. Similar comments appear in other medieval Jewish Arabic writings, such as those of Moses Ibn Ezra and Shem-Tov ben Yosef ibn Falaqera, and Maimonides concerning the therapeutic use of music. Isaac Arama's *Niggun Olam* uses the metaphor of world harmony to describe how the microcosm (each human) can perpetuate the wellbeing and moral strength of the macrocosm (the universe). Arama imposes a specific, divinely-commanded ethical framework onto this idea. If the world, like Noah the righteous, can improve their behaviour and live according to Torah law, then, Arama claims, world harmony will prevail.

4. The interaction between the music of the spheres and Jewish theology is an area not yet sufficiently explored. I presented a number of areas for future study. For example, Psalm 29 appears in various rabbinic midrashim concerning the voice of God at the Sinaitic revelation. The theme of the manifold voices or sounds being emitted all at once is common. The same psalm appears in a medieval work by Ibn Latif, directly connected to the idea of multiple resounding spheres of heaven, each somehow representative of one of the mentions of God's voice in Psalm 29. Finally, the name of God, the Tetragrammaton, is used as a source of heavenly musical theological speculation by Judah Moscato, as he deems the divine, perfect harmony itself.

In Chapter Six, I presented a full analysis of sources concerning ways in which Jewish texts address the music of the resounding spheres of heaven themselves, the fifth category I established and the topic which formed the majority of this thesis. Do Jewish sources exhibit a belief in the notion that the heavens resound with music? BT Yoma 20b presents a clear rabbinic articulation of the sound of the sphere of the sun. In other rabbinic sources, I looked for interpretations of Psalm 19, the biblical centre of curiosity about the music of the spheres, that might be of interest. One passage, in Ketubot 5b, presents a clear metaphorical reading, seeing the rain as the way in which the heavens "speak." Otherwise, I presented a number of midrashim which use the idea of the music of the spheres as a tool of God's command, in a seemingly literal fashion.

I showed how various medieval sages addressed this question, focusing on Psalm 19 as the centre of speculation on the music of the spheres. Rashi, Moses Ibn Ezra, Radak, and to some extent Abraham Ibn Ezra, presented metaphorical interpretations of the psalm, indicating that phrases referring to the heavens producing sound should be understood as alluding to some other phenomenon; the sun's light in the sky, or the way in which humans perceive the universe and therefore offer praise.

Abraham Ibn Ezra presents diverse opinions and perspectives concerning the possible music of the spheres in different places throughout his writings. As well as brief comments clearly indicating he understands biblical references to the heavens sinsing as metaphor, he articulates the idea of angelic song, as a rationalist alternative for the music

of the spheres, in relation to Psalms 50.6, 97.6. However, commenting on Psalm 93.4 and Job 38.7, he seems to prefer a literal understanding that the heavens themselves resonate with sound. Abraham Ibn Ezra's commentary on Psalm 19 constitutes something of a treatise in and of itself, including grammatical lessons, mystical references, and astronomy. I concluded that he understands the heavenly sound of the psalm as symbolising the way in which humans perceive various astronomical and theological phenomena, but there is clearly more to uncover in this sage's understanding of the place of the music of the spheres in Jewish thought.

In reading Maimonides' *Guide,* II, 5 and 8, I identified a literal acceptance of the Greek doctrine, from the great philosopher. He acknowledges quite clearly, with reference to Psalm 19.2, that the heavenly spheres themselves produce sound, in praising the Creator. Maimonides goes as far as to say that anyone who presumes otherwise, for example by explaining away the heavenly music as a figment of human imagination, is ignorant and misguided. This reading of Maimonides' text is corroborated by the way in which Radak presents the great philosopher's opinion, as well as by modern analysis such as that of Friedlander, Strickman, Feldman, and Ivry. However, a number of modern scholars (Werner, Simon) suggest the antithesis of this interpretation, that Maimonides was opposed to the music of the spheres and rather adopted the Aristotelian theory of the silent universe. Judah Moscato comments on both Maimonides and Aristotle, in ways that seem to support a Jewish theory for the music of the spheres, but could be read to the contrary.

The next stage of this research might be to explore further whether there exists a clear Jewish articulation of the Aristotelian view, in texts from similar times and places as have been presented already. This would represent the antithesis of my claim, that the music of the spheres is accepted in Jewish sources. I have found hints and queries of this nature, specifically in relation to Maimonides and Moscato, but would require a fuller investigation to come to a conclusion on this matter.

I have laid out the foundations of Jewish approaches to and elucidations of the classical Greek theory of the music of the spheres, in a variety of ways. However, it is clearly apparent that there is so much more to investigate. Jewish engagement with Aristotle's soundless universe, and a deep study of the sources concerning the music of the spheres and God both constitute important areas for future scholarship. That the music of the spheres is a relevant topic of study within Jewish text, I hope I have demonstrated. All the more so, I hope that I have presented compelling sources from within the Jewish cannon which energetically and excitedly embrace and propound this ancient notion. The music of the spheres has captured the imagination of philosophers and theologians, biblical commentators and poets throughout the centuries. I will conclude with one example of a modern text that might show how these ideas have been perpetuated through Jewish intellectual history; "That We Be Reborn" by the early twentieth-century Yiddish and Hebrew poet, journalist, and philosopher, Hillel Zeitlin:

"Source of all that exists, You create Your world anew every moment.

Would You but for a moment withhold Your creative love,

The whole universe would come to an end.

You pour out Your blessings on your creatures every instant.

And again the stars renew their song of love to You.

And again the angels chant over their song of holiness to You.

And again the souls of mortals repeat their yearning for You;

And again the birds keep chirping their hymns of joy to You.

And again the trees wrap themselves in their tallit of leaves

And offer their worship to You.

And again the fountains in whispers murmur their prayers to You.

O God, turn on me but one ray of Your light and I will be steeped in light.

Let but one word issue from You and I rise restored;

But one wave of your life eternal and I am drenched in the dew of youth.

Do You not continually renew your creation, O Source of all life?

Take me your child and renew.

Breathe your spirit into me that I may live, that I may start life

Afresh with childhood's unbounded promise."[172]

[172] (ed.) Kleinbaum, 83

Bibliography and Sources

All hebrew text from www.sefaria.org unless otherwise stated

JPS Hebrew-English Tanakh (Philadelphia: The Jewish Publication Society, 2000)
Translation copyright 1985, 1999

Adler, I. *Hebrew Writings Concerning Music in Manuscripts and Printed Books from Geonic Times up to 1800* part of the RISM series (Repertoire international des sources musicales. B) (Munich: G. Henle Verlag, 1975)

Alter, R. *The Book of Psalms; A translation with commentary* (New York and London: W. W. Norton & Company, 2007)

Anderson, A. A. *New Century Bible, The Book of Psalms, Volume 1: Introduction and Psalms 1-72* (Marshall, Morgan & Scott, 1972)

Anderson, W., Mathiesen, T. J. 'Plato' in *The New Grove Dictionary of Music and Musicians* (ed.) Sadie, S. Second edition, vol. 19 (Macmillan Publishers Limited, 2001)

Barbera, A. 'Pythagoras' in *The New Grove Dictionary of Music and Musicians* (ed.) Sadie, S. Second edition, vol. 20 (Macmillan Publishers Limited, 2001)

Berlin, A. *Biblical Poetry Through Medieval Jewish Eyes* (Bloomington & Indianapolis: Indiana University Press, 1991)

(eds.) Berlin, A., Brettler, M. Z. *The Jewish Study Bible* (Oxford University Press, 2004)

Brown, F., Driver, S. R., Briggs, C. A. *The Brown-Driver-Briggs Hebrew and English Lexicon* originally published by Houghton, Mifflin and Company, Boston 1906. Ninth Printing (Massachusetts: Hendrickson Publishers, 2005)

Brueggemann, W., Bellinger, Jr., W. H. (ed.) Ben Witherington III *New Cambridge Bible Commentary: Psalms* (Cambridge University Press, 2014)

Buttenwieser, M. *The Psalms; chronologically treated with a new translation* (Chicago, Illinois: University of Chicago Press, 1938)

(ed.) Clines, D. J. A. *The Dictionary of Classical Hebrew* volume II (Sheffield Academic Press, 1995)

_____ *The Dictionary of Classical Hebrew* volume IV (Sheffield Academic Press, 1998)

_____ *The Dictionary of Classical Hebrew* volume V (Sheffield Academic Press, 2001)

_____ *The Dictionary of Classical Hebrew* volume VI (Sheffield Phoenix Press, 2007)

_____ *The Dictionary of Classical Hebrew* volume VII (Sheffield Phoenix Press, 2010)

Cohen, B. 'The Responsum of Maimonides Concerning Music' *Jewish Music Journal* 2 (2) (1935): 3-8

Cohen, J. 'Jubal in the Middle Ages' in *Yuval Studies of the Jewish Music Research Centre* 3 (Jerusalem: the Magnes Press, Hebrew University, 1974): 83-99

Cohen, N. G. 'Philo Judaeus and the True Torah Library' in *Tradition: A Journal of Orthodox Jewish Thought* 41, 3 (2008): 31-48

Engel, C. *The Music of the Most Ancient Nations - Particularly of the Assyrians, Egyptians and Hebrews; With Special Reference to Recent Discoveries in Western Asia and in Egypt* (London: John Murray, 1864)

Farmer, H. G. 'Maimonides on Listening to Music' in *The Journal of the Royal Asiatic Society of Great Britain and Ireland* No. 4 (October, 1933): 867-884

_____*Sa'adyah Gaon on the Influence of Music* (London: Arthur Probsthain, 1943)

Feldman, L. H. *Studies in Hellenistic Judaism* (Brill, 1996)

_____ 'Philo's Views on Music' in *Essays of Jewish Music and Prayer* (ed.) Nulman, M. (Philip and Sarah Belz School of Jewish Music, 2005)

Ferguson, E., 'Praising God with One Mouth/One Voice' in (eds.) Hamilton, M. W., Thomas, H., Olbricht, J. P. *Renewing Tradition: Studies in Texts and Contexts in Honor of James W. Thompson* Princeton Theological Monograph Series 65 (Eugene, Oregon: Pickwick Productions, 2007)

Finch, R. G., Box, G. H.. *The Longer Commentary of R. David Kimhi on the First Book of Psalms. Translated from the Hebrew by R. G. Finch, with an introduction by G. H. Box* (London: Society for Promoting Christian Knowledge, New York: Macmillan Company, 1919)

Friedlander, M. *The Commentary of Ibn Ezra on Isaiah: Edited from MSS. and translated, with notes, introductions, and indexes* (London, 1873)

_____ *The Guide for the Perplexed by Moses Maimonides; Translated from the Original Arabic Text* (1904)

Goldingay, J., (ed.) Tremper Longman III *Baker Commentary on the Old Testament; Wisdom and Psalms Psalms Volume 1 Psalms 1-41* (Baker Academic, Grand Rapids, Michigan, 2006)

Gottheil, R., Bacher, W. 'IBN EZRA, ABRAHAM BEN MEÏR (ABEN EZRA)' in *Jewish Encyclopaedia, 1906*
http://www.jewishencyclopedia.com/articles/7985-ibn-ezra-abraham-ben-meir-aben-ezra#anchor7

Gruber, M. I. *Rashi's Commentary on Psalms* (Philadelphia: The Jewish Publication Society, 2007)

Haar, J. 'Pythagorean Harmony of the Universe' in *Dictionary of the History of Ideas,* (ed.) P. P. Wiener (New York, 1973-4), iv, 38-9

_____ 'Music of the spheres' in The New Grove Dictionary of Music and Musicians (ed.) Sadie, S. second edition, vol. 17 (Macmillan Publishers Limited, 2001)

HaCohen, R. *The Music Libel Against the Jews: Vocal Fictions of Noise and Harmony* (Yale University Press, 2012)

Handschin, J. 'The Timaeus Scale' in *Musica Disciplina* 4 (1950), pp. 3-42

Harran, D. *Three Early Modern Hebrew Scholars on the Mysteries of Song* (Leiden, Boston: Brill, 2014)

Harvey, W. Z. 'Rashi on Creation: Beyond Plato and Derrida' in *Aleph* 18 (1) (2018): 27-50

Hengel, M. *Judaism and Hellenism: Studies in their Encounter in Palestine during the Early Hellenistic* Period (Wipf and Stock Publishers, 2003)

(ed.) Hoffman, L. A. *My People's Prayer Book; Volume 10- Shabbat Morning, Shacharit and Musaf* (Woodstock Vermont: Jewish Lights Publishing, 2007)

Hoskin, Michael *The Cambridge Concise History of Astronomy*. (Cambridge University Press, 1999)

Huff, T. E. *The Rise of Early Modern Science: Islam, China and the West* (Cambridge University Press, 2017)

Idelsohn, A. Z. *Jewish Music; Its Historical Development* (Dover, 1992). First published by Henry Holt and Company, New York, in 1929.

Ivry, A. L. *Maimonides' Guide of the Perplexed; A Philosophical Guide* (University of Chicago Press, 2016)

Jastrow, M. *Dictionary of the Targumim, the Talmud Babli and Yerushalmi and the Midrashic Literature* originally published New York, 1943. Second printing (Massachusetts: Hendrickson Publishers, 2006)

(transl.) Jowett, B. *Republic - Plato*. *Introduction and Notes by Elizabeth Watson Scharffenberger, translated by Benjamin Jowett.* (New York: Barnes and Noble Classics, 2004) Benjamin Jowett's translation first appeared in 1871.

(ed.) Kleinbaum, S. *With All Your Heart: The New CBST Siddur B'chol L'vav'cha for Friday Night* (Congregation Beth Simchat Torah, 2008)

Kraemer, J. L. *Maimonides: The Life and World of One of Civilization's Greatest Minds* (Doubleday, 2008)

Kraus, H.-J., (transl.) Oswald, H. C. *Psalms 1-59; A Commentary*. First published in English in 1988 by Augsburg Publishing House

Leask, I. 'Performing Cosmic Music: Notes on Plato's Timaeus' in *REA: A Journal of Religion, Education and the Arts* 10 'Sacred Music' (2016): 14-27

Levine, L. I. *Judaism and Hellenism in Antiquity* (University of Washington Press, 2012)

Macdonald Cornford, F. *Plato's Cosmology; The Timaeus of Plato Translated, with a running commentary* (Indianapolis/Cambridge, Hackett Publishing Company, 1997). Original copyright 1935 by Routledge.

(ed.) Magonet, J. *Forms of Prayer; Daily, Sabbath and Occasional Prayers* Eighth Edition (Movement for Reform Judaism, 2008)

Mathiesen, T. J. 'Harmonia' in *The New Grove Dictionary of Music and Musicians* (ed.) Sadie, S. Second edition, vol. 10 (Macmillan Publishers Limited, 2001)

McKinnon, J. W. 'Jubal vel Pythagoras, quis sit inventor musicae?' in *MQ* 64 (1978), 1-28

(ed.) Migne, J. P. *Patrologia cursus completus, series latina* (Paris: Garnier, 1844-1904), 63:1167–96. Electronic version prepared by Hayes, S. E., Lefferts, P. M., Tucker, B. J., and Mathiesen, T. J. for the *Thesaurus Musicarum Latinarum*, 1994: http://www.chmtl.indiana.edu/tml/6th-8th/BOEDIM1

Miletto, G. and Veltri, G. with Harrán, D. 'Judah Moscato Sermons; Edition and Translation Volume One' Veltri, G. in (ed.) *Studies in Jewish History and Culture* Vol 26/1 (Leiden, Boston: Brill, 2011)

Morgenstern, J. 'Psalms 8 and 19A' in *Hebrew Union College Annual* 19 (1945-56): 491-523

Munk, E. *Akeydat Yitzchak; Commentary of Rabbi Yitzchak Arama on the Torah* vol. 1 (Jerusalem-New York: Lambda Publishers, 2001)

Neusner, J. *Judaism's Theological Voice; the melody of the Talmud* (Chicago, Illinois: University of Chicago Press, 1995)

Pelosi, F. 'Eight Singing Sirens: Heavenly Harmonies in Plato and the Neoplatonists' in (eds.) J. Prins, M. Vanhaelen *Sing Aloud Harmonious Spheres: Renaissance Conceptions of Cosmic Harmony* part of the Warwick Studies in the Humanities, series editors: Karen O'Brien, Loredana Polezzi, and Samantha Haigh (University of Warwick, UK) (Routledge, 2018), 15-30

Pines, S. *Moses Maimonides; The Guide of the Perplexed, Volume 2* (University of Chicago Press, 1963)

Riedweg, C., (transl.) Rendall, S. *Pythagoras; His life, teaching, and influence* (Cornell University Press, 2005)

Roth, N. ABRAHAM IBN EZRA - MYSTICISM, Iberia Judaica IV (2012), 141-150

(ed.) Rubin, S. J. *Celebrating the Jewish Holidays; Poems, Stories, Essays* (Hanover, New Hampshire: Brandeis University Press, 2003)

Sacks, J. *The Koren Siddur* (Jerusalem: Koren Publishers, 2009)

Sarna, N. M. *Songs of the Heart; An Introduction to the Book of Psalms* (New York: Schocken Books, 1993)

Segal, B. J. *A New Psalm; The Psalms as Literature* (Gefen Publishing / the Schechter Institute, 2013)

Shiloah, A., (asst.) Tene, R. "נושאי מוסיקה בזהר – טקסטים ומפתחות", (Jerusalem: Yuval Monograph Series, 1977)

Shiloah, A. 'The Musical Passage in Moses Ibn Ezra's Book of the Garden' in *Yuval Studies of the Jewish Music Research Centre* 4 (Jerusalem: the Magnes Press, Hebrew University, 1982): 211-224

_____ *Jewish Musical Traditions* (Wayne State University Press, 1995)

_____ 'Music Subjects in the Zohar' in *Journal of Synagogue Music* 34 (2009), 132-6

_____ 'Theory of Heavenly Harmony and Angelic Song in Jewish and Islamic Sources' in eds. J. Prins, M. Vanhaelen *Sing Aloud Harmonious Spheres: Renaissance Conceptions of Cosmic Harmony* part of the Warwick Studies in the Humanities, series editor: Karen O'Brien, Loredana Polezzi, and Samantha Haigh (University of Warwick, UK) (Routledge, 2018), 44-61

Simon, U. *Four Approaches to the Book of Psalms* (SUNY Press, 1990)

Stark, E. B. *Translation and annotation, with introductory materials, of Higayon bekhinor of Rabbi Judah ben Joseph Moscato* rabbinic thesis, Hebrew Union College, 1999

Steinsaltz, A. E.-I. *Koren Talmud Bavli The Noé Edition Volume 1: Tractate Berakhot* Editor-in-Chief Rabbi Dr Tzvi Hersh Weinreb, Executive Editor Rabbi Joshua Schreier (Jerusalem: Koren Publishers, 2012)

_____ *Koren Talmud Bavli The Noé Edition Volume 9: Tractate Yoma* Editor-in-Chief Rabbi Dr Tzvi Hersh Weinreb, Executive Editor Rabbi Joshua Schreier (Jerusalem: Koren Publishers, 2013)

_____ *Koren Talmud Bavli The Noé Edition Volume 16: Tractate Ketubot Part One* Editor-in-Chief Rabbi Dr Tzvi Hersh Weinreb, Executive Editor Rabbi Joshua Schreier (Jerusalem: Koren Publishers, 2015)

Strickman, H. N. *Rabbi Abraham Ibn Ezra's Commentary on the First Book of Psalms: Chapters 1-41* (Brooklyn: Yashar Books, 2006)

_____ *Rabbi Abraham Ibn Ezra's Commentary on the Second Book of Psalms: Chapters 42-72* (Boston: Academic Studies Press, 2009)

_____ *Rabbi Abraham Ibn Ezra's Commentary on the Books 3-5 of Psalms: Chapters 73-150* (New York: Touro College Press, 2016)

Toy, C. H., Siegfried, C., Lauterbach, J. Z. 'Philo Judaeus' in *Jewish Encyclopaedia* (1906) http://jewishencyclopedia.com/articles/12116-philo-judaeus

(eds.) Veltri, G., Miletto, G. *Rabbi Judah Moscato and the Jewish Intellectual World of Mantua in the 16th-17th Centuries* (Leiden, Boston: Brill, 2012)

Weiss, P., Taruskin, R. 'Music in the Western World: A History in Documents' (Cengage Learning, 2008)

Werner, E. 'The Philosophy and Theory of Music in Judeo-Arabic Literature' in *Hebrew Union College Annual* 16 (1941): 251-319

_____ *Three Ages of Musical Thought; essays on ethics and aesthetics* (New York: Da Capo Press, 1941)

_____ 'The Oldest Source of Octave and Octechoes' in *Acta Musicologica* 20 (1948): 1-9

_____ 'Musical Aspects of the Dead Sea Scrolls' in *Musical Quarterly* 43 (1957): 21-37

_____ 'Greek Ideas on music in Judeo-Arabic literature' in *The Commonwealth of Music - In Honor of Curt Sachs* (eds.) Reese, G., Brandel, R. (New York, 1965), 71-96

_____ 'The Eight Modes of Music (Octoechos)' in Werner, E. (ed) *Contributions to a Historical Study of Jewish Music* (Ktav, 1976), 104-148

_____ *The Sacred Bridge Vol. 2: The Interdependence of Liturgy and Music in Synagogue and Church During the First Millennium* (Ktav, 1985)

Yonge, C. D. *The Works of Philo; New Updated Edition; Complete and Unabridged in One Volume* (Massachusetts: Hendrickson Publishers, 1993)

Zeyl, D., Sattler, B., 'Plato's *Timaeus*', in (ed.) Zalta, E. N. *The Stanford Encyclopedia of Philosophy* (winter 2017)
https://plato.stanford.edu/archives/win2017/entries/plato-timaeus/

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