

THE CONCEPT OF HARMONY IN JUDAISM

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THIS CHAPTER WILL ADDRESS THE CONCEPT OF HARMONY IN JUDAISM as it appeared in the Hebrew Bible (*Tanach*), Midrash and Talmud, and later rabbinic writings – the Torah corpus from antiquity to the post-modern period.¹

For the purpose of this analysis, ‘Judaism’ is defined as a way of life that incorporates a system of law, ethics and morality based upon the Torah, where *Torah* (lit. ‘teaching’) denotes the *Tanach*, the rabbinic works of late antiquity and the body of Jewish literature centred upon them, and the precepts and modes of behaviour that flow from them.² ‘Harmony’ (from the Greek term, ἁρμονία – *harmonia*, meaning ‘union’ or ‘fitting together’) is used here in its modern sense of a state of agreement between two or more divergent entities, its sense of correspondence and sympathetic resonance between two entities, and its applied concept of agreeable artistic composition, as in the pleasing quality that arises from a combination of contrasting notes, parts, or elements.³

INTRODUCTION

Academic research has ascertained the prevalence of cross-cultural engagement and mutual influence between the ancient near east and ancient Greece.⁴ Thus, although the term ‘harmony’ is of Greek provenance and its meanings owe much to ancient Greek mythology and Hellenistic philosophy, a similar idea might conceivably be found in Judaism.⁵

Indeed, many ancient cultures embraced concepts of harmony. Native American peoples emphasised the interconnectedness of all living things, and the harmony of spirit, mind and body.⁶ The Japanese term *wa* referred to an individual whose conduct and aspirations were in harmony with society.⁷ It might be posited that the type of harmony stressed by a particular culture or society indicated the aspects or elements that society considered important for its survival or success.

Whilst difficult to specify a single (classical) Hebrew word that equated fully with all the concepts of harmony outlined above, three individual terms, שלום *šolōm* (or *šalom*; ‘peace’), יחד *yāhād* (‘together’), and תפארת *tif’ereth* (‘beauty’ or ‘splendour’), conveyed separate elements thereof.

The word, *šolōm*, and the noun, *šoleim* (complete), originated from the

triconsonantal root, שׁלם SH-L-M, related to the Akkadian word *šalamu* that had the connotation of ‘being complete’.⁸ Though usually translated as ‘peace’, *šolōm* essentially denoted a state of perfection and wholeness, either in wellbeing, as in Gen. 37.14, or through the coherence and agreement of conflicting forces, as evinced in Job 25.2 and Isaiah 45.7.

The word *yāḥād* related to אָחַד *ehod* (‘one’) and was primarily used to denote unity. Hence, in Psalms 133.1, *yāḥād* described brothers dwelling together in social harmony.⁹ In Job 38.7, it described the harmonious singing of the morning stars.¹⁰ The term *tif’ereth* (from the root פָּאֵר *pe’air*, ‘glory’) was used, in the early and late modern periods, to depict the beauty of harmonious balance.¹¹ If *yāḥād* denoted the ontological state of togetherness, and *šolōm* described its wholeness and perfection, *tif’ereth* referred to the appealing quality of that state. However, as the term generally used to express concordance between individual interests was *šolōm*, most of this research will centre on that term.

HOW TWO BECOME ONE

In Judaic thought, *šolōm* did not merely indicate agreement between conflicting parties. It frequently entailed the introduction of a third element that caused the opposing sides to blend and meld and cooperate with each other.¹² The resultant state was a conglomeration of ideas, each individual position recognising the validity of the other.¹³

The unifying element was a common focus or purpose, often portrayed as the desire to serve Gd, that incorporated a degree of self-nullification that catalysed cohesivity between opposites. Thus, in the Midrashic reading of Job 25.2, fire and water make peace in heaven.¹⁴ The Biblical phrase ‘fire flashing in the midst of the hail’ (Ex. 9.24) was understood by the Midrash as fire and water making peace to do G-d’s will.¹⁵ The buffalo and lion are natural enemies, but, in the chariot of G-d (described in Ezekiel 1.10), says the Midrash, ‘there is peace between them; they love each other’.¹⁶

In a similar vein, according to the Mišnah (c. 50–200 CE, collection of laws and traditions appertaining to Biblical and rabbinic injunctions), if participants of a learning debate are arguing ‘for the sake of Heaven’, both sides of the argument will remain valid and endure.¹⁷ Arguing for ‘the sake of Heaven’, or the absence of self-interest, was the lynchpin that bound the parties, such that ‘Torah scholars increase *šolōm* in the world’, in spite of – or, indeed, because of – their debates.¹⁸ Thus, R. Samson Rafael Hirsch (1808–1888) taught that true peace between peoples was unachievable unless the parties were in harmony with G-d, their differences

dissolving through mutual self-abnegation to the Significant Other.¹⁹

Self-nullification, to attain spiritual harmony, was especially stressed in the esoteric writings of the modern period (c. sixteenth to twentieth century). Here, self-effacement was a means of attaching to the supernal worlds, to approach a state of harmony with G-d, allowing one's finite being to unite with the infinite Being, causing opposite elements to unite.²⁰ Thus, R. Elimelekh of Lizhensk (1717–1787) taught, if you are completely self-effacing, you will hear G-d's voice.²¹ In the words of R. Dovber, the *Maggid* ('Preacher') of Mezritch (c. 1700–1772), by seeing oneself as nothing, one could 'transcend time, and access the world of thought, where everything – life and death, sea and dry land – is equal'.²²

Moreover, self-effacement created a receptacle to receive G-d's Presence and blessing: the quintessential *šolōm*.²³ The only antinomian prayer with magical overtones and directed to angels (both aspects frowned upon in normative *halakha*) to survive in the main Jewish liturgy concerned domestic peace and harmony.²⁴ Clearly, *šolōm*, the harmonic balance of opposing influences, played a key role throughout Judaic culture.

COSMIC HARMONY

Harmony between heaven and earth was an overriding theme in the Midrashic analysis of the Genesis account.²⁵ Man was created as a product of both the celestial and sublunar spheres in order to ensure *šolōm* (harmony) in the cosmos.²⁶ His bridging the animal and the divine, through the union of a physical body with a G-dly soul, enabled conflicting elements within the macrocosm to coalesce.²⁷

Likewise, when the Midrash ascribed the variation in divine names in the opening two chapters of Genesis (the first chapter used *Elōqim* ('powers' or all-powerful); the second chapter, the tetragrammaton (understood to denote love and mercy) in conjunction with the name *Elōqim*) to G-d's combining loving-mercy with harsh judgement, so as to create the world through *šolōm*, it was asserting *šolōm*-harmony as the underpinning of creation, and the heart of G-d's relationship with the world.²⁸

Isaiah associated *šolōm* with harmony in creation when he described G-d as 'forming light and creating darkness, making *šolōm* and creating evil' (Is. 45.7).²⁹ In the Canaanite pantheon, *Šālim*, represented not only the completion of day, but, as numen of dusk, the blend of light and darkness at sunset.³⁰ Similarly, *šolōm* denoted the manifestation of a new state, the union of light and darkness: G-d created harmony that married the conflicting elements.³¹

According to the *parallelismus membrorum* in Isaiah 45.7, *šolōm* ('harmony')

paralleled light and was the antithesis of evil.³² The relationship between *šolōm* and goodness was also suggested in Psalms 34.15, where ‘do[ing] good’ was conflated with ‘seek out *šolōm* and pursue it’.³³ The connection between goodness and light, first portrayed in Genesis 1.4 (‘The L-rd saw that the light was good’), was underlined by the rabbis’ exegesis on the word ‘good’, in Exodus 2.2, to denote a luminescence surrounding Moses’ birth.³⁴ This is especially significant in view of the connection of light with G-d evinced in Isaiah 60.1-3.

Hence, as well as being essentially good, *šolōm* (‘harmony’) was associated with the Divine.³⁵ In Numbers 6.26, the ultimate deific blessing was *šolōm*.³⁶ In Isaiah 45.7, only G-d had the power to create *šolōm*-harmony.³⁷ In Job, only G-d could impose harmony in the celestial realms: ‘He makes peace (*šolōm*) in His heights’ (Job 25.2).³⁸ Thus, the Midrash insisted that true *šolōm* has to be divinely gifted to the world.³⁹

This idea is underscored in the frequent mention of Job 25.2 in the daily liturgy (in the *Qaddish* prayer, in Grace After Meals, and in the thrice-daily silent devotion) where ‘He Who makes *šolōm* in His heights’ (נְשֵׂהָ שְׁלוֹם בְּמַרוֹמָיו) is beseeched to cause harmony and peace to reign over humanity, suggesting that, ultimately, only G-d can affect true peace over humankind.⁴⁰

Isaiah 45.7’s parallelism was echoed in the Morning Prayers, where G-d is blessed for ‘forming light and creating darkness, making *šolōm* and creating all’.⁴¹ This Tannaic (c. first century CE) liturgic text substituted the word ‘evil’ – as it appeared in Isaiah 45.7 – for ‘all’, with the implication that *šolōm* effected the subsequent creation of all.

Yet, in this parallelism, ‘creating all’ becomes the antithesis of *šolōm* and mirrors ‘darkness’. This rabbinic amendment possibly reflected a concept expressed by the Roman poet Ovid (43 BCE–17/18 CE): ‘though fire and water fight each other, heat and moisture create everything, and [therefore] this discordant union is suitable for growth’.⁴² In other words, if *šolōm* is a state of concordance between opposing factors, its shadow is their discordant union, but it is a chaos that results in creation. The liturgical blessing thus ameliorated the ‘evil’ expressed in Isaiah 45.7 to a chaos that engenders growth.

GREEK PARALLELS

According to the Midrashic gloss on Job 25.2, G-d ‘making peace (*šolōm*) in His heights’ involved imposing regulation and order on natural and supernatural forces.⁴³ In this sense, divine harmony was analogous to the Greek deity, *Harmonia*, that presided over cosmic stability and was responsible for connecting dissimilar

items into the *κόσμος kosmos*, the divinely ordained order of the natural world.⁴⁴ The antithesis of *šolōm*, רַע *rā* ('evil'), that paralleled darkness in Isaiah 45.7 and signified disharmony and chaos, was similar to the Greek goddess *Eris*, daughter of night and darkness, and the antithesis and nemesis of *Harmonia*.⁴⁵

Like *Harmonia* and *Eris*, harmony and disorder were described in Isaiah as ever-present. However, rather than the *kosmos* being permanently created out of a primordial void (*khaos χάος*), as in Greek cosmogony, according to the Midrash, the dynamic harmonisation of *šolōm* – the primeval force that predated the creation of the world – needed to be continually crafted.⁴⁶ Cosmic harmony, the equilibrium between natural forces, was not a given. The potential for chaos was ever-present. G-d creates the *Chaoskampf* and quells it by effecting *šolōm*.⁴⁷

Furthermore, since G-d is its creator, רַע *ra* (evil or chaos) was seen as a necessary part of cosmic balance. As noted in the liturgical text above, chaos can instigate growth. Thus, the Midrash saw pain and suffering, the evil inclination, even death, as so integral to the divine plan as to be alluded to in creation's climactic statement 'G-d saw all that He had made and behold, it was very good' (Gen. 1.31).⁴⁸ All were part of an over-arching harmony and cosmic order.

Accordingly, Isaiah declared, 'He Who makes harmony and creates evil: I am G-d, Who makes all these' (Isaiah 45.7).⁴⁹ Similarly, Jeremiah declaimed, 'Do not [both] evil and good emanate from G-d?' (Lamentations 3.38).⁵⁰ In this theology, G-d creates all: the good and the untoward, harmony and discordance. 'Lightning and hail, snow and sleet, whirlwinds; each carry out His word' (Psalms 148.8).⁵¹ Though *šolōm* is a divine blessing, its antithesis, discordance, is not a curse. It was viewed as a necessary evil to provoke creation and growth.⁵²

Ultimately, all that G-d does was seen as part of His harmonious plan for the good of His creations.⁵³ It was up to man through his faith, theurgy, or attainment of henosis, to reveal the good inherent in even the most challenging of G-d's actions.⁵⁴

HARMONY WITH THE ECO-SYSTEM

In Judaism, the creation of humanity in G-d's image is considered both axiomatic and far-reaching.⁵⁵ As G-d created both harmony and chaos, so it is in humanity's power to engender ecological harmony or, alternatively, to cause chaos and destruction. Thus, the Midrash had G-d saying to Adam,

See how beautiful and splendid My works are! All that I have created is for you. Take care not to spoil or destroy My world, for once you spoil it, there is no-one to repair it after you.⁵⁶

The Midrash placed man firmly at the helm. He alone was responsible for the preservation of the planet. Though the ebb and flow of cosmic harmony and chaos are part of the divine order, man, through his choices and actions, had the power to disturb that balance. Irresponsible neglect of the biosphere, or wanton destruction, could lead to his own devastation. *Ergo*, if he spoils the world, there would be no-one to restore it.

Precedent for man's charge to live in harmony with nature and his responsibility for the earth's upkeep can be found in Genesis 2.15, where G-d was described as placing Adam in the Garden of Eden for the prime purpose of 'tilling and tending it', and in the psalmist's declaration, 'The heavens are G-d's but He gave over the Earth to man'.⁵⁷

Based upon the Genesis account of creation, the Midrash saw maintenance of the natural environment as a principal element in the principle of *imitatio Dei*.

After the L-rd your G-d shall you walk' (Deut. 13:5). Can one walk after G-d? [...] 'In Him shall you cleave' (ibid.). Can one [...] cleave to the [Divine] Presence? [...] But, just as, from the beginning of creation, the Holy One, blessed be He, was, before all else, occupied with plantation, [...], so you, when entering the land, occupy yourselves first with planting ...⁵⁸

Since G-d engaged Himself in planting, so must man. World conservation was deemed so important that, according to the rabbis, 'if you have a sapling in your hand and someone tells you that the Messiah has arrived, stay and complete the planting, and only then go to greet the Messiah'.⁵⁹

Biblical ordinances likewise demanded ecological responsibility. In Deuteronomy 20.19–20, the Jewish people were instructed not to destroy fruit trees, an injunction understood by the rabbis to include the unwarranted destruction of any item of value.⁶⁰

[The righteous] will not destroy even a mustard seed. They are distressed at every ruination and spoilage. If they can, they will endeavour, with all their power, to save anything from destruction.⁶¹

In a similar vein, the Deuteronomic commandment (22.6–7) to refrain from taking the mother bird together with its young was interpreted by various medieval commentaries as an injunction to preserve the species.⁶² Ecological responsibility was also demonstrated in Leviticus 25.1–7, where the Torah was mindful of the fact that if nothing was planted in the sabbatical year, wildlife may suffer.

Accordingly, storing of produce for one's own cattle was only permitted so long as the herbivorous animals of the wild also had sustenance.⁶³ Indeed, causing pain to animals was largely regarded as Biblically prohibited.⁶⁴

As will be further explored, these and similar ordinances were seen as part of an all-embracing principle that *šolōm* (harmony in all its aspects) was equal to G-dliness. Through performing actions that resonated with harmony, societal or cosmic, one approached the Divine, an idea analogous to Plato's statement, that 'through association with *kosmios* (that which is divine and orderly), [one] becomes divine and orderly'.⁶⁵

HARMONY IN THE G-DHEAD

'What's in a name? That which we call a rose, by any other name would smell as sweet'.⁶⁶ A name, William Shakespeare (1564–1616) philosophised, has no inherent connection with its bearer.⁶⁷ In contradistinction, Torah saw G-d's name as having innate meaning, expressing the nature of His revelation, allowing humankind to perceive His attributes and relate to Him.⁶⁸

Accordingly, when the rabbis commented (on Jud. 6.24: 'G-d is *Šolōm*') that 'G-d's name is *Šolōm*', they were ascribing harmony as a key to understanding G-d.⁶⁹ Though G-d's incomprehensibility is an essential tenet of Judaism, harmony was seen as an integral quality of the Divine.⁷⁰

This quality was apparent, too, in G-d's Ineffable Name. According to Maimonides, as well as the kabbalists, the Ineffable Name denoted G-d's essence, and described His 'absolute existence' and His causing existence.⁷¹ Medieval commentaries saw the Tetragrammaton as deriving from the words 'He was, Is, Will be' (היה הוה יהיה).⁷² In the liturgical poem, *Ādōn Ōlom* (אדון עולם), 'Master of the World', this description of G-d's transcendence was described with the adjective *tif'oroh* [תפארה] ('beauty' or 'harmony'), implying that G-d's beauty and harmony becomes apparent through the unfolding of world history.⁷³ Furthermore, as creation was seen as structured and beautiful, G-d's Name, responsible for its constant manifestation, expressed cosmic harmonic unity.⁷⁴

In the Midrash, G-d's attribute of *šolōm* was seen as harmonising two opposing aspects of the divine nature: severity and loving kindness.⁷⁵ Here, too, *šolōm* was analogous to the Greek goddess Harmonia, described by Hesiod (c. 700 BCE) as the product of the god of war (Ares) and the goddess of love (Aphrodite).⁷⁶

In kabbalistic thought, this state of harmony became the objective of theistic worship.⁷⁷ G-dly efflux, realised through the performance of *mitsvōth* ('good deeds', lit. 'commandments': Divine instructions of sacred behaviour or ritual

conduct, or, according to the mystical conception of the term, ‘connections’ to G-d), caused a balance of the cosmogonic extremities.⁷⁸ This celestial harmony then influenced the *Šekhinah* (lit. ‘that which dwells’), G-d’s perceived presence on earth.⁷⁹

Similarly, when the *Zohar* identified three ‘bonds’ in the G-dhead that harmonised polarities of deistic consciousness at three levels of its integrational manifestation (G-d’s ‘knowing’, harmonising His wisdom and understanding; His attribute of truth harmonising His loving-kindness and harsh-might; and *šolōm* – harmonising victory, the projection of self, and majesty, a passive element of the G-dhead), it was identifying harmony as a key aspect of the divinity.⁸⁰

Especially in Lurianic Kabbalah (after its teacher, R. Isaac Luria, 1534–1572), G-d’s administration of this world was seen to be the product of a harmonious gestalt of six attributes, the so-called ‘extremities’ (קצוות *qetsovoth*) of divine conduct, outlined in I Chronicles 29.11: ‘To you, O G-d, is the greatness and the might and the glory and the victory and the majesty, indeed all that is in the heavens and earth’, where ‘all’ was viewed as the sixth attribute, the harmonious blending of all elements of creation.⁸¹ Through theurgical practice, involving esoteric intentions and unifications (*yichudim*), the kabbalist sought to harmonise the divine emanations and sweeten the attribute of harsh judgement, to bring about the sublime revelation of *tif’ereth* (‘glory’ or ‘beauty’), the deific ‘beauty’ inherent in the harmony of cosmic balance.⁸²

Though *tif’ereth* was seen as the balance of the six extremities, and the beauty inherent in that concordance, it was specifically the sixth attribute, termed *yesōd* (‘foundation’), appended to *tif’ereth* in the kabbalistic ‘Tree of Life’, that was seen as the element that caused the polarised components to blend and coalesce, the divine transmitter of *šolōm* (harmony and peace) to the lower spheres.⁸³

Through *yesod*, G-d infused the *Šekhinah* (Divine Presence) with supernal light, and the Divine Presence interacted with the world. A synonym of *šolōm* in kabbalistic literature, *yesōd* facilitated the transmission of divine love, the spiritual vibration that united Heaven and Earth, the divine element that could connect with the numen of the underworld.⁸⁴

TORAH AS ŠOLŌM

‘The heavens recount G-d’s Glory; the firmaments tell of the works of His Hands. [...] The L-rd’s teaching (Torah) is perfect; it revives the soul’ (Psalms, 19.1, 8).⁸⁵

The psalmist contrasted the heavens, which speak of G-d's Glory, with G-d's teaching, which bespeaks a perfection that revives the soul.⁸⁶ According to the Sifre's (early Midrash, c. 100 CE) exegesis of this verse, as G-d was perfect, so the Torah was perfect, such that it engendered perfection in its adherents.⁸⁷

Similarly, as G-d was called *Šolōm*, so Torah was called *šolōm*.⁸⁸ While Maimonides interpreted this as meaning Torah's engenders peace and harmony in the world, the *Zohar* saw Torah as a metaphysical manifestation of G-d's attribute of *šolōm*.⁸⁹

In this respect, Torah was an abstract *logos*, the inner soul of the written and oral law.⁹⁰ This view was based upon an early Midrashic statement that the world was created according to an order and system whose root is the Torah.⁹¹ In the words of R. Menachem Azariah da Fano (1548–1620), 'the Torah is the imprint of G-d, and the world is the imprint of the Torah'.⁹² As G-d was *Šolōm*, so Torah was *šolōm*, and thus the cosmos bespoke *šolōm*.⁹³ *Šolōm*-harmony was the mainstay of the world.

Indeed, harmony was a predominant theme throughout the Torah. The Sinaitic revelation of G-d speaking to the entire population (Ex. 19–20), was only possible through the populace uniting, 'as one man, with one heart'.⁹⁴ Laws and ordinances are overridden in order to achieve social harmony and peace.⁹⁵ Though truth is the seal of G-d, uttering falsehood an abomination, one is allowed to utter an untruth to preserve matrimonial harmony.⁹⁶ G-d even allows His name to be erased for the sake of peace.⁹⁷

Since G-d is called *Šolōm*, and Torah is *šolōm*, through living the Torah's precepts, one achieves a state of harmonic resonance with G-d.⁹⁸ Such was the power of harmony, and the resultant resonance with G-d, that even were a society to worship idols, the accuser ('satan') could not affect them.⁹⁹

According to the kabbalists, this harmonic resonance had cosmic consequences, such that sustainment of cosmic harmony was man's responsibility. As R. Meir Leibush Weiser (1809–1879) wrote:

G-d arranged the world that it be affected through man's actions, for good or otherwise. This has been likened to two harps, a larger and smaller, placed in an auditorium in a specific position. If the smaller is played upon, the larger will vibrate. Similarly, G-d arranged the world, the larger instrument, to play according to the melody played by the smaller instrument, man.¹⁰⁰

Beyond harmonic resonance with the macrocosm, kabbalists saw the Torah as a manual of how to be in resonance with G-d. The Torah's divine commandments

and precepts were seen as examples of *imitatio Dei*, in line with the Talmudic statement that G-d performs the Torah's *mitsvōth*.¹⁰¹ Their pure performance caused harmonic resonance with aspects of G-d, enabling G-d to dwell within the person, the person to unite in *unio mystica* with G-d.¹⁰²

AESTHETIC HARMONY IN THE TORAH

Pythagoras (fl. sixth century BCE) was credited with the notion that mathematical harmony underlies the structure of the world and determines beauty.¹⁰³ Pythagorean cosmogony was based on geometric harmonic relationships: the universe's various elements related to each other in numeric proportion (*harmonia*), and those proportions and numbers were the bedrock of reality.¹⁰⁴

A similar view, stressing numbers as the fabric of cosmic structure, appeared in the *Sefer Yetzirah* ('Book of Formation', c. second to fifth century CE) and in later kabbalistic writings.¹⁰⁵ For R. Joseph Gikatilia (1248–after 1305),

The world exists through letters, the letters exist through *heshbōn* (numbers and mathematics), and *heshbōn* exists through G-d. [...] The existence of all *heshbōn* is G-d's name. [With it] He created the world, and arranged it [the world] according to *heshbōn*. [...] Everything He created is through the exactitude of *heshbōn* and only operates according to *heshbōn*.¹⁰⁶

Numbers comprise the cosmic metastructure. They exist through the name of G-d. Since G-d's name is *Šolōm*, it follows that the numeric structure underlying the world is one of deep harmony.¹⁰⁷

For the Pythagoreans, beauty becomes apparent through harmonious proportions.¹⁰⁸ The golden ratio (its recognition attributed to Pythagoras but formally defined by Euclid, third century BCE) was extolled by the Pythagoreans as the most perfect proportion, and therefore, one that conferred an aesthetic pleasing quality wheresoever it appeared.¹⁰⁹

In the words of Euclid, the golden ratio is realised when, in dividing a line into two segments, 'as the whole line is to the greater segment, so is the greater to the lesser'.¹¹⁰ This ratio also gives the proportions for the golden rectangle. An approximation of these proportions is known as the 'rule of the thirds' (a ratio widely used in photography).¹¹¹

Gary Meisner noted that the dimensions of both the Ark of the Covenant (Ex. 25.10) and the Copper Altar (Ex. 27.1–2) were of the golden rectangle.¹¹² The notion of beauty through harmonious proportions, and particularly, the golden

ratio, can also be found underlying the rabbinical ideal dimensions of various *mitsvōth*.¹¹³ This is especially noteworthy in view of the rabbis' exegesis, of (Gen. 9:27), 'May G-d expand Yéḫeṭ and dwell in the tents of Šem', that the beauty of Yéḫeṭ (understood by the rabbis to refer to Greece) should dwell in the tents of Šem, by incorporating Greek beauty in Judaism's practical observance.¹¹⁴

Indeed, based upon the verse 'this is my G-d and I will beautify him' (Ex. 15.2), R. Ishma'el saw it as a divine injunctive that *mitsvōth* be aesthetically pleasing.¹¹⁵

'This is my G-d and I will beautify him' (Ex. 15.2). Is it possible for a person to beautify his Creator? But [the interpretation is] I will beautify Him with *mitsvōth*: I will make before Him a beautiful *sukkah* (temporary shaded dwelling constructed for the festival of Sukkoth), a beautiful *lulov* (palm-frond used in ritual service on the festival of Sukkoth), a beautiful *šofar* (typically a ram's-horn), beautiful *tsitsith* (ritual fringes), a beautiful *sefer Torah* (Torah-scroll), beautiful *tefilla* ('phylactery').¹¹⁶

As the Jew approaches G-d through *mitsvōth*, beautifying the *mitsvōth* effectively beautifies his experience of G-d.

Each of these *mitsvōth* listed by R. Ishma'el had specific dimensions that could be seen to approximate to the golden ratio or derivatives thereof, or were guided by simple proportions. The minimum size of a *sukkah*, as outlined by the Talmud, was 7 x 7 x 11 hand breadths, the approximate dimensions of a golden rectangle.¹¹⁷ The minimum size of a *šofar*, 'so that it can be held [in a fist] and seen on both sides', again gave the approximate dimensions of a golden rectangle.¹¹⁸

Tsitsith (ritual fringes) were made up of a braided segment followed by free-hanging tassel strings.¹¹⁹ According to the third century CE Sasanian sage, Rav, the ideal ratio of the braided segment to the tassels was one third braided versus two-thirds tassel, a rough approximation of the golden ratio, as in the 'rule of the thirds'.¹²⁰

Similarly, a *mezuzah* (lit. 'doorpost') scroll (parchment inscribed with certain Biblical texts affixed to the doorpost of a house) was to be affixed to the base of the top third of the doorpost.¹²¹ This, too, conformed with an approximation of the golden section.

The placement of the *tefillin* ('phylacteries') can also be seen to be in accordance with the golden section and simple proportions. The boxes housing the ritual texts are to be perfectly square.¹²² The left strap from the head-phylactery was to reach the navel, whilst the right strap reached the covenant of circumcision, accentuating the golden section proportions of the upper torso.¹²³ (Others opined

that both straps were to reach the navel; this would accentuate the golden section vis-a-vis the entire person).¹²⁴ Likewise, the location of the arm phylactery vis-à-vis its strap that reached until the middle finger, accentuated the golden ratio proportions inherent in the arm.¹²⁵

A similar ratio could be seen in the proportions of the minimum sizes of the willow and myrtle branches vis-à-vis the palm-frond (*lulov*): the palm-frond was to be three handbreadths, plus one handbreadth with which it was held, whilst the accompanying foliage was two handbreadths, plus the one handbreadth holding it.¹²⁶

The ideal dimensions of a *sefer Torah* outlined in the Talmud, its height equalling its circumference, adhered to a simple ratio of 1:3, another type of golden or Euclidean rectangle.¹²⁷ The horizontal black lines of the Hebrew letters written in ritual texts, in relation to the white parchment, displayed a ratio of 1:3, close to the dimensions of the golden ratio.¹²⁸

Besides the golden ratio, dimensions of other *mitsvōth* conformed with simple proportions, consistent with Marcus Vitruvius Polio's philosophy (c. 80–70 BCE; after c. 15 BCE) that simple mathematical proportions that mirrored the proportions and symmetry in nature were definitively beautiful.¹²⁹

The Midrash, above, presented alternative interpretations of *ve'anvaihu* (Ex. 15.2).¹³⁰ Abba Saul saw *ve'anvaihu* as consisting of the words *ani ve'hu* (*ani vo'hu* ('I and He')); he thus interpreted the verse as an injunction of *imitatio Dei*: 'as He [G-d] is merciful and gracious, so you be merciful and gracious'.¹³¹ R. Jose, son of Durmasqeith, understood *ve'anvaihu* to mean 'I will make Him an abode', from the root *nevai* 'an abode'.¹³²

The three opinions might be viewed as variations of the same theme.¹³³ How does one improve on the appearance of G-d? How can one beautify the Infinite? Through introducing an element of the Infinite into the finite. According to the Midrash, G-d desired an abode in the physical world.¹³⁴ Building a sanctuary allowed man to approach G-d and G-d to be immanent, the macrocosm in the microcosm. Likewise, through imitating His attributes, one resonated with the perfection and harmony inherent in G-d, allowing the Whole to be expressed in the part. By beautifying *mitsvōth*, the harmony and beauty expressed in G-d's creation are articulated in the spatial and temporal spheres.

CONCLUSION

This exploration saw harmony as central to the Judaic ethos, manifest in its lore and culture, its Mosaic and rabbinic literature, its esoteric philosophies, and both

its nomian and antinomian traditions.

Though related to the terms *yāhād* ('together') and *tif'ereth* ('glory'), the modern sense of harmony was found to be closest to both the Bible's and the rabbinic notion of *šolōm* ('peace'). Fundamentally good, *šolōm* was seen by the rabbis as the blueprint of creation, the backbone of society, the essence of the Torah, and the name of G-d. Uniting polarities, it was synonymous with spiritual light and G-dly revelation.

Rabbinic works of late antiquity were replete with concepts distinctly similar to the ancient Greek ideas of harmony.¹³⁵ The Midrashic description of *šolōm* as representing the union of G-d's loving kindness and strict judgement, and denoting cosmic stability, was observed to be analogous to the Greek deity Harmonia – portrayed in Greek mythology as the product of Ares, god of war, and Aphrodite, goddess of love – who connected dissimilar items into the divinely ordained order of the natural world. In a similar manner, the opposite of *šolōm*, *rā* – 'evil' – was comparable to the Greek goddess Eris, the antithesis of Harmonia.

However, in contradistinction to Greek mythology, *ra* ('evil' or 'chaos') was seen as a part of the divine plan, necessary to engender growth. Though the revealed state of *šolōm* implied cosmic stability, there was a hidden, overarching state of *šolōm* – peace, harmony and goodness – that included evil and chaos. Reflecting that philosophy, the Torah instructed one to choose life (Deut. 30.19), to attach to goodness, whilst channelling any destructive leanings to good.¹³⁶

In its interaction with nature, humankind must be wary of impairing the cosmic balance, a theme underscored in both Biblical and rabbinic ordinances. Accordingly, the Torah was called *Šolōm*, as it engendered harmony in the world and stressed *šolōm* above all else.

In kabbalistic thought, Torah was the manifestation of G-d's attribute of *šolōm* ('harmony'). Termed *yesod* (lit. 'foundation') in kabbalistic nomenclature, *šolōm* – or harmony – was an integral facet of G-d, the divine element of love through which He connected with the lower spheres. By personifying *šolōm*, through the performance of *mitsvōth* and theurgical practice and through its expression in one's social, domestic and marital relations, one achieved harmony with that aspect of G-d.

As both G-d and the Torah were called *Šolōm*, the Torah was seen as an instruction manual for *imitatio Dei* and the attainment, thereby, of *unio mystica*. Though absolute *šolōm* could only be achieved through G-d's blessing, observing the *mitsvōth* caused one to be in harmony with G-d, such that through self-abnegation to G-d and His precepts, and emulation of His attributes, man can resonate with and thus manifest *šolōm*.

Finally, harmony, in its sense of beauty of form and structure, was found to be present in the *mitsvōth*. Based on Biblical exegeses, the rabbis saw beautifying *mitsvōth* as part of the Biblical injunction of *imitatio Dei*. Furthermore, their beautification appeared to conform with Pythagorean concepts, as the dimensions of several *mitsvōth*, both Biblical and rabbinic, were found to be in accord with the golden ratio and rectangle, and simple proportions.

To summarise: in Judaism, man is to attach to *šolōm*, harmony and peace, in all manner of human expression: socially, morally, aesthetically, and through theistic worship. The notion of being in harmony with G-d was central to the rabbis' understanding of the *mitsvōth*. Though, ultimately dependent upon G-d's blessing, through acting in harmony with the Deistic expression, man effects its revelation.¹³⁷

If the Pythagorean philosopher or Native American seek to be in harmony with nature because they value nature above all else, the Jew must seek *šolōm* and harmony in all its forms, because G-d is in *šolōm* and the root of the *mitsvōth* is to realise harmony with G-d.¹³⁸

NOTES

¹ For the purpose of this study, the Bible is defined here as the *Tanach* – the classic Jewish Writings from late second millennium BCE (earliest estimate of the Mosaic Pentateuch) until late first millennium BCE – according to the Masoretic Text (MT). The MT can be found in *Biblia Hebraica Stuttgartensia Liber Gen*, (H. Bardtke: Hendrickson Publishers Marketing, LLC; 2017), available online at <https://www.academic-bible.com/en/online-bibles/biblia-hebraica-stuttgartensia-bhs/read-the-bible-text/> [accessed 6 December 2018]. 'Culture', in the context of this paper, is understood in its widest sense as a society's values, ideas, beliefs, customs and social behaviour whose meaning lies in the way they are interpreted by that society; see Geert Hofstede, Gert Jan Hofstede, Michael Minkov, *Cultures and Organizations: Software of the Mind* (USA: McGraw Hill, 2010), Chapter 1; Helen Spencer-Oatey, P Franklin, 'What is culture? A compilation of quotations', *GlobalPAD Core Concepts* (Warwick University, 2012); V. Žegarac, 'Culture and communication', *Culturally Speaking: Culture, Communication and Politeness Theory*, edited by Helen Spencer Oatey (London/New York: Bloomsbury Publishing, 2008), pp. 48-70. Talmudic references are to the Babylonian Talmud (Bavli) unless otherwise specified.

² Jacob Neusner, 'Rabbinic Judaism in Late Antiquity', *Encyclopedia of Religion*, edited by Thomson Gale (Detroit: Macmillan Reference, 2005), p. 7583; Asher Maoz, subsection 'Judaism', in 'The Impact of Jewish Law on Contemporary Systems with Special Reference to Human Rights', *Olir* (2004), pp. 1-3. Cf. Daniel Boyarin, *Judaism: The Genealogy of a Modern Notion* (New Brunswick, New Jersey: Rutgers University Press: 2018); Shaul Maggid, 'Is "Judaism" Necessary?: A Response to Boyarin's Judaism', in *The Marginalia Review of books* (24 May 2019). *Tanach* stands for Torah (the Mosaic Pentateuch), *Nevi'im* (Prophets), *Khethubim* (Writings). In Deuteronomy and Joshua, 'Torah' refers specifically to all or parts of Deuteronomy: see Deut. 4.44, 27.3, Joshua 1.18, *Bereishith Rabbah*, 6.9 (Theodor-Albeck edition, pp. 49-50.). In Mishnaic literature (c. 10

CE–200 CE), ‘Torah’ referred specifically to the Pentateuch (see George F. Moore, *Judaism in the First Centuries of the Christian Era: The Age of Tannaim* (Peabody, Massachusetts: Hendrickson Publishers, 1997). Later, however, especially in the medieval period, ‘Torah’ may have referred to the entire corpus of traditional Jewish thought, depending on the context. ‘Talmud’ in this paper refers either to the Jerusalem Talmud, compiled in Roman Israel (Palestine) c. 300–400 CE or to the Babylonian Talmud, compiled by the rabbis (*Amoro'im*) of Sasanian Babylon, c. 230–750 CE.

³ Henry George Liddell, Robert Scott, *A Greek-English Lexicon: Based on the German Work of Francis Passow* (New York: Harper & Brothers, 1846), s.v. ἁρμονία; Edward A. Lippman, ‘Hellenic Conceptions of Harmony’, *Journal of the American Musicological Society* (University of California Press: Vol. 16, No. 1: Spring, 1963), pp. 3–35, p. 3; G.W. Leibniz, *Philosophical Papers and Letters: A Selection* (Springer Science & Business Media, 6 December 2012), p. 57; Alan Rich, ‘Harmony’, *The New Encyclopaedia Britannica* (New York: Encyclopaedia Britannica, 1983), available online at <https://www.britannica.com/art/harmony-music> [accessed 12 May, 2019]; Carl Dahlhaus, ‘Harmony’, *Grove Music Online*, edited by Deane L. Root (Oxford: Oxford University Press, 2019), available online at <https://www.oxfordmusiconline.com/grovemusic> [accessed 12 May 2019]. See also, ‘symmetry’ in *Dictionary.com*, online at <https://www.dictionary.com/browse/symmetry> [accessed 20 May 2019].

⁴ See e.g., Scott B. Noegel, ‘Greek Religion and the Ancient Near East’, in *A Companion to Greek Religion*, edited by Daniel Ogden (Oxford: John Wiley & Sons, 1 Feb 2010), pp. 21–37; Jan N. Bremmer, *Greek Religion and Culture, the Bible, and the Ancient Near East* (Leiden: Brill, 2008), p. 102; also, Thomas Francis Glasson, *Greek Influence in Jewish Eschatology: With Special Reference to the Apocalypses and Pseudepigraphs* (London: S. P. C. K., 1961).

⁵ See, for example, Edward A. Lippman, ‘Hellenic Conceptions of Harmony’, pp. 3–35.

⁶ Jerry V. Diller, *Cultural Diversity: A Primer for the Human Services* (Boston, MA: Cengage Learning, 2013), p. 271; Derald Wing Sue, David Sue, *Counseling the Culturally Diverse: Theory and Practice* (Hoboken, NJ: John Wiley & Sons, 2015), p. 484; Marcus Colchester, *Salvaging Nature: Indigenous Peoples, Protected Areas and Biodiversity Conservation* (Darby, PA: Diane Publishing, 1994), p. 25.

⁷ Robert Whiting, *You Gotta Have Wa* (New York: Random House: Vintage, (1989) 2009), pp. 27–52.

⁸ Maximilien de Lafayette, *Vol. 14. Comparative Encyclopedic Dictionary of Mesopotamian Vocabulary Dead & Ancient Languages* (New York and Berlin: Times Square Press, 2014), p. 64.

⁹ See R. David Qimḥi, *Peruše Rabbi David Qimḥi* (ReDaQ) ‘*al hat-tōrā* (Jerusalem: Mossad Horav Kook 1975), Psalm 133.1.

¹⁰ R. Meir Leibush Weiser (Malbim), *Miqra'ei Qōdesh* (Rome, 1891), Job, 38.7.

¹¹ See: R. Shneur Zalman Baruchovitch of Liadi, ‘Iggereth HaQodesh’, in *Liqutei Amorim Tanya* (Brooklyn, New York: Kehot Publication Society, (5714) 1954), Epistle 19; R. Eliyohu Munk, *Ascent to Harmony* (New York: Feldheim, 1987).

¹² R. Nachman of Breslav, *Liqutei Moharan*, I, (Jerusalem, 5735 [1974/5]), p. 93b; R. Isaac ben Moše Arama, *Aqedath Yitschoq* (Salonika, 1522), p. 74. Cf., ‘Richard Dagley’ in *Instructive gleanings, moral and scientific, from the best writers on painting and drawing, arranged by R. Mainwaring*, edited by Rowland Mainwaring (London, 1832), p. 113.

¹³ R. Abraham Isaac Kook, *Siddur Tefilloh im Peirush Ōlath Re'iyoh* (Mossad Horav Kook, 1983), Vol. 1, p. 320.

¹⁴ עָשָׂה שְׁלוֹם בְּמַרְוֵי – ‘He makes peace (*šolōm*) in His heights’: see *T. Yerushalmi, Roš*

Hašanah, 2:5, *Numbers Rabbah*, 12.8.

¹⁵ *Exodus Rabbah*, edited by E. Halevy (Tel Aviv: 1956-1963), *parashah* 12, subsection 6 (Vilna edition). All subsequent references to *Midrās Rabbah* are to this edition). (Note: the *parashiyoth* [sections] were based on a triennial cycle of reading the Pentateuch). Cf. Hagigoh 12a.

¹⁶ *Midrash Shir HaShirim Zuta*, 1, edited by S. Buber, (Berlin: 1894). Regarding the lion and buffalo's natural rivalry, see *Midrasch Tanchuma*, edited by Buber, (4 vols. Wilna: Wittwe and Gebruder, 1885), *Vayigash*, 43.3.

¹⁷ 'Pirquei Ovoth' [Ethics of the Fathers], *Mishnayoth*, edited by P. Blackman, (New York: Judaica, 1964), 5.17. (Henceforth, all mishnaic references are to this edition.)

¹⁸ B'rachoth 64a: בעולם שולם מרבים חכמים תלמידי חכמים; R. Yonathan Eybeschütz, *Yā'arōth D'vāsh* (Lublin, 1875), Vol. 2, p. 8a; R. Abraham Isaac Kook, *Olath Re'iyoh*, Vol. 1, pp. 320, 435. See also, Yevamoth 14b (also, Mišnah Yevamoth, 1.4; Tosefta Yevamoth, 1.10); Sotah 47b.

¹⁹ R. Samson Rafael Hirsch, *The Hirsch Chumash: The Five Books of Torah* (Jerusalem: Feldheim Publications, 2008), Numbers, 25.12.

²⁰ See e.g. R. Dov Baer of Mezritch, *Maggid Devorov L'Ya'aqov, Liqutim Yeqorim* (Jerusalem: Yeshivath Toldoth Aharon, 5731), §8, §122, §213; R. Yehuda Aryeh Leib Alter, *Sefath Emeth, Qōrāch*, Section 1 (Pe'er, Israel: 1993).

²¹ R. Elimelech of Lizhensk, *Nō'am Elimelekh* (Lemberg 5619 (1859)) *Yithro*, s.v. *VeAtoh*. אם תהיו כדבר הנסתר והנעלם [...], רק תהיו נכנעים כאילו אינכם כלל, אז תשמעו בקולי.

²² R. Dov Baer of Mezritch, *Maggid Devorov L'Ya'aqōv*, §159. צריך האדם לחשוב את עצמו. כאין, וישכח א"ע מכל וכל [...] ואזי יכול לבא למעלה מזמן, והיינו לעולם המחשבה ששם הכל שוה, חיים ומות, ים ויבשה. – See also, §142,

²³ *Sefath Emeth*, *ibid*.

²⁴ The prayer, *Šolōm Āleikhem*, said before the Friday evening (Šabbath) meal. 'Halakha' here denotes the Jewish rabbinical legal system.

²⁵ *Genesis Rabbah*, 12.8.

²⁶ *Genesis Rabbah*, 12.8.

²⁷ *Zohar* (Zhitomir, 1863), vol. II, 24b; R. Moše Cordovero, *Pardes Rimōnim* (Cracow: 1591), Gate 31, Ch. 1.

²⁸ *Genesis Rabbah*, 12.15; R. Shlomoh Efraim Lipshits, *Ir Gibōrim* (Froben: 1580), p. 81a; Sifre, Deut., 26.10.

²⁹ יוצר אור ובורא חשך עשה שְׁלוֹם ובורא רע [Translations are the author's, unless stated otherwise.]

³⁰ *Dictionary of Deities and Demons in the Bible*, edited by Karel van der Toorn, Bob Becking and Pieter W. van der Horst (Leiden: Brill; 1998), pp. 755–6; *Theological Dictionary of the Old Testament, Volume 15*, eds. G. Johannes Botterweck, Helmer Ringgren, Heinz-Josef Fabry (Grand Rapids: Eerdmans Publishing, 2006), pp. 24ff. Regarding the classic ANE understanding of transcendent deities influencing the lower realms through manifestation of agency in the celestial bodies, see Manfred Hutter, 'Astral Religion', *Religion Past and Present*, edited by Hans Dieter Betz (Brill, 2009); Francesca Rochberg, "The Stars and Their Likenesses": Perspectives on the Relation between Celestial Bodies and Gods in Ancient Mesopotamia', *What is a god? Anthropomorphic and Nonanthropomorphic Aspects of Deity in Ancient Mesopotamia*, edited by Barbara N. Porter (Chebeague Island, Maine: Transactions of the Casco Bay Assyriological Institute I, 2000), pp. 41–91, 65, 79, 83, 89, 90; E. Frahm, 'Reading the Tablet, the Exta, and the Body: The Hermeneutics of Cuneiform Signs in Babylonian and Assyrian Text Commentaries and Divinatory Texts', *Divination and the Interpretation of Signs*, edited by A. Annus (2010),

pp. 93–141.

³¹ See Šabbath 34b; R. Dov Baer of Mezritch, *Māggid Devorov L'Yā'aqōv*, § 213; see also, John Curtis Franklin, 'Harmony in Greek and Indo-Iranian Cosmology', *The Journal of Indo-European Studies* (American Academy in Rome: Volume 30, Number 1 & 2, Spring/Summer 2002), p. 4.

³² See, R. Abraham Ibn Ezra, *Peirush Rābeinu Ibn Ezra*, Isaiah 45.7, s.v. ובורא את הרע; R. David Qimḥi, *Redaq*, ad loc; R. Isaac ben Moše Arama, *Aqidath Yitschoq*, p. 74. Regarding the parallelistic structure of Biblical verse, see Tawny L. Holm, 'Ancient Near Eastern Literature: Genres and Forms', *A Companion to the Ancient Near East* (Malden, Mass: Wiley-Blackwell: second edition, 2007), pp. 269–288, p. 271; Robert Alter, *The Art of Biblical Poetry* (New York: Basic Books, 2011); James Kugel, *The Idea of Biblical Poetry: Parallelism and Its History* (Baltimore: The Johns Hopkins University Press, 1998), Chaps. 1, 2. See also, Robert Lowth, *De sacra poesi Hebraeorum: praelectiones academiae Oxonii* (Oxonii, 1753).

³³ וְיַצֵּר אֹר וְיַבְרָא חֹשֶׁךְ עֲשֵׂה שְׁלוֹם וְיַצֵּר רָע אֲנִי ד' עֲשֵׂה כָל-אֵלֶּה: See also, *ibid.*, Psalm 121, 6-7; Psalm 128, 5-6.

³⁴ Gen. 1.4: וַיֵּרָא אֱ-לֹהִים אֶת-הָאָדָם כִּי טוֹב - 'She saw him that he was good'; Soth 12a. See also Ḥagigoh 12a.

³⁵ See *ibid.*, Psalm 121, 6-7; J. H. Weiss, ed. *Sifra on Leviticus* (Vienna: Jacob Schlossberg, 1862), Levit. 26.5.

³⁶ וַיִּשֶׂם לָךְ שְׁלוֹם. See Megillah 18b.

³⁷ יוֹצֵר אֹר וְיַבְרָא חֹשֶׁךְ עֲשֵׂה שְׁלוֹם וְיַבְרָא רָע אֲנִי ד' עֲשֵׂה כָל-אֵלֶּה: - He Who forms light and creates darkness, makes šolōm and creates evil, I am G-d, doer of all these things.

³⁸ Job, 25.2 - הַמַּשֵּׁל נִפְסָד עִמּוֹ עֲשֵׂה שְׁלוֹם בְּמִרוֹמָיו.

³⁹ *Midraš Šoher Tov (Midraš Tehillim*, edited by S. Buber, Vilna, 1891), Psalm 18; *Genesis Rabbah*, 6.7 - והמאורות, רבי. שנאמר, ונתתי שלום בארץ... שלשה דברים ניתנו מתנה לעולם, ואלו הן, - אף השלום, והתורה והגשמים ועירא בשם ריש לקיש אמר, אף השלום, 'Pereq HaŠolōm' in *Masechet Derech Erets Zuta*: אלמלא שנתן הקב"ה שלום בארץ היתה החרב והחיה משכל את האדם.

⁴⁰ *Siddur Tefillath Yisro'el* - עֲשֵׂה שְׁלוֹם בְּמִרוֹמָיו, הוּא יַעֲשֶׂה שְׁלוֹם עֲלֵינוּ וְעַל כָּל יִשְׂרָאֵל וְאֶמְרוּ אָמֵן (Brody, 1872), pp. 80, 96.

⁴¹ יוֹצֵר אֹר וְיַבְרָא חֹשֶׁךְ עֲשֵׂה שְׁלוֹם וְיַבְרָא אֶת-הַחֹל.

⁴² Ovid, *Metamorphosis, Book I*, lines 416-437, trans. by A. S. Kline (Borders Classics, 2004).

⁴³ *Numbers Rabbah*, 12.8; *Jerusalem Talmud*, Roš Hašonoh (Bomberg, Venice, 1523), 2:5; *Zōhar*, Vol. III, 225a; *Midraš Zuta*, Song of Songs 1.

⁴⁴ 'Philolaus of Croton', in *Introductory Readings in Ancient Greek and Roman Philosophy*, eds. Patrick Lee Miller, C. D. C. Reeve (Indianapolis, Indiana: Hackett Publishing, 2015), p. 7; Sheramy Bundrick, *Music and Image in Classical Athens* (Cambridge: Cambridge University Press, 2005), p. 141.

⁴⁵ George S. Phylactopoulos, *History of the Hellenic World: The Archaic period* (Athens: Ekdortikē Athēnōn, 1975), p. 185. 'Chaos' here denotes disorder, unlike the Greek *χάος*, *khaos*, which denoted a chasm or abyss.

⁴⁶ 'Philolaus of Croton', in *Introductory Readings in Ancient Greek and Roman Philosophy*, p. 7; Sheramy Bundrick, *Music and Image in Classical Athens*, p. 141; *Genesis Rabbah*, 8.5.

⁴⁷ See Jon D. Levenson, *Creation and the Persistence of Evil: The Jewish Drama of Divine Omnipotence*, (Princeton University Press, 1994), Chapter 2.

⁴⁸ וַיֵּרָא אֱלֹהִים אֶת-כָּל אֲשֶׁר עָשָׂה וְהִנֵּה טוֹב מְאֹד. See *Genesis Rabbah*, 9.7-10.

⁴⁹ יוֹצֵר אֹר וְיַבְרָא חֹשֶׁךְ עֲשֵׂה שְׁלוֹם וְיַבְרָא רָע אֲנִי ד' עֲשֵׂה כָל-אֵלֶּה- 45.7

⁵⁰ Lamentations 3.38 - מִפִּי עֲלִיּוֹן לֹא תִצָּא הַרְעוֹת וְהַטּוֹב -

- Paul. P. Levertoff, *Midrash Sifre on Numbers* (London: S.P.C.K., 1926), Ch. 42; *Leviticus Rabbah*, 9.9. See also, *Song of Songs Rabbah*, Chap. I, V 1; Chap. 3, verse 10; Šabbath, 10b.

⁷⁰ Isaiah 40.25; R. Moše ben Maimon (Maimonides), *Mišneh Tōrāh*, Section: 'Fundamentals of the Torah', 1:8; R. Judah Halevi, *Kuzari* (Prague: 1838), 5:21. See also, Maimonides, *Guide to the Perplexed (Moreh Nevuchim)*, (London: Pardes Publishing House, 1904), 1:58–59.

⁷¹ R. Moše ben Maimon (Maimonides), *Guide to the Perplexed*, I: 61; R. Joseph Gikatilia, *Gināth Egōz* (Yeshi-vath HaChayyim VeHaŠolōm, 1989), p. 289; R. Isaiah Horowitz, *Shenei Luḥoth HaBerith* (Amsterdam, 1698), p. 418a; R. Shneur Zalman of Liadi, 'Iggereth HaQodesh', in *Liquitei Amorim Tanya*, Ch. 4.

⁷² R. Jonah of Gerondi, *Sefer HāYir'oh* (Dubno: 1804); R. Menachem Tsiyoni, *Sefer Hātsiyoni* (County: 1560), p. 105b; R. Bachya ben Asher, *Khād Hāqemāh* (Warsaw: 1872), Ch. 1; R. Gershon Shaul Yom-Tov Lipmann, *Tosefeth Yom Tov* (Amsterdam: 1685), Sukkah 4.5.

⁷³ Attr. to R. Shlomo Ibn Gabirol (1021–1058), beginning of Morning Prayers; see *Siddur Tefillath Yisro'el* (Brody: 1872), p. 15.

⁷⁴ R. Joseph Gikatilia, *Ša'arei Ōrah*, Ch. 6; Gikatilia, *Gināth Egōz*, p. 289.

⁷⁵ *Genesis Rabbah*, 12.15.

⁷⁶ Hesiod, *Theogony*, trans. by Hugh G. Evelyn White (1920), lines 933–978; Hesiod, *Hesiod: Theogony, Works and days, Testimonia*, trans. by Glenn W. Most, (Loeb Classical Library: Harvard University Press, 2006), lines 933–978. See also, Lippman, 'Hellenic Conceptions of Harmony', p. 5.

⁷⁷ R. Hayyim of Volozhin, *Nefesh HāHāyyim* (Vilna: 1874), 1:4, n 4; 1:6; Avinoam Fraenkel, 'Nefesh HaTzimtzum', *translation & commentary of Nefesh HaHayyim*, (Israel: Urim Pub., 2015) Vol. 1, p. 126.

⁷⁸ R. Hayyim of Volozhin, *Nefesh HaHayyim*, *ibid.* Regarding the term *mitsvōth* (sing. *mitsvōth* מצוה), see R. Isaiah Horowitz, *Shenei Luḥoth HāBerith, Asereth HaDibroth, Yoma, Derekh Hāyyim*; R. DovBaer of Mezritch, *Ōhr Tōrāh*, (Koretz: 1804) *Trumoh*, p. 103b; Marcus Jastrow, *Dictionary of the Targumim, the Talmud Babli and Yerushalmi, and the Midrashic Literature*, (Philadelphia: 1903), p. 823, s.v. מצוה; also, B'rachoth 6a; Bava Bathro 21a; *Zohar* III, p. 284a.

⁷⁹ R. Hayyim of Volozhin, *Nefesh HaHayyim*, *ibid.*

⁸⁰ *Zōhār* III, 10b; 142b.

⁸¹ I Chronicles 29.11: כִּי כָל בְּשִׁמִּים וּבְאֵרֶץ וְהַהוֹד כִּי כָל בְּשִׁמִּים וּבְאֵרֶץ. See R. Moše Hayyim Luzzatto, *Kelalej maamar ha-chochma*, 1.7, available online at <http://www.daat.ac.il/daat/mahshevt/mahadurot/klaley-2.htm> [accessed 19 May 2019].

⁸² See, for example, R. Hayyim Vital, *Pri Eits Hayyim* (Korzec: 1785), *Sha'ar Ho'Amidoh*, Ch. 1; R. Elimelekh of Lizhensk, *Nō'ām Elimelekh*, s.v. *Im Beḥoqothai* (p. 66b).

⁸³ *Zohar* III, 31a, 115b; R. Moše Cordovero, *Tomer Devorah* (London: 2003 [Vienna, 1589]), Ch. 5, p. 121;

⁸⁴ R. Hayyim Vital, *Pri Eits Hayyim, Sha'ar Ho'Amidoh*, Ch. 20; Cordovero, *Pardes Rimōnim*, Ch. 23.10, 21.

⁸⁵ Psalms, 19.1,8. הַשָּׁמַיִם מְסַפְרִים כְּבוֹד אֱלֹהִים וּמַעֲשֵׂה יְדָיו מִגִּיד הַרְקִיעַ. [...] תּוֹרַת ה' תְּמִימָה מְשִׁיבַת נֶפֶשׁ

⁸⁶ *Qimbi*, ad loc.

⁸⁷ *Midrāš Šoher Tov*, 1; *Pesiqta Derav Kahana*, 12:19; *Midrasch Tanchuma*, Ex. 12.1; R. Yehudoh Loew of Prague, *Tifereth Yisroel* (Jerusalem, Sifrei Maharal, 5744), Chapter 2.

⁸⁸ *Numbers Rabbah*, 11.10; *Pesiqta Zutatha*, Leviticus 52b.

⁸⁹ Maimonides, *Mišneh Torah*, Section: 'Laws of Chanukah and Purim', 4:14; *Zōhār*,

vol. III, p. 176b.

⁹⁰ R. Isaiah Horowitz, *Shenei Luḥōth HāBerith*, vol. I, p. 343a, vol. II, p. 198a; *Midrasch Tanchuma*, I.1; *Gen. Rabbah*, 8.2; *Lev. Rabbah*, 19.1.

⁹¹ R. Judah Loew ben Bezalel (Maharal) (c. 1512–1609), *Nethivoth Olom* (Warsaw: 1873), p. 3b; R. Moše Ḥayyim Luzzatto (1707–1746), *Adir BāMorōm* (Machon Ramchal: 2018), p. 110.

⁹² התורה רושם האלקים והעולם רושם התורה - R. M. A. da Fano, *Yonath Eilem*, Ch. 1; see also, *Ex. Rabbah* 32:4; R. Menachem Nochum Twersky, *Meor Einayim*, (Square, N.Y.) pp. 16, 94, 292, 294, 427. Cf. R. J. Gikatilia, *Ginath Egoz*, p. 289: 'the world's continued existence is through letters, existence of the letters is through numerics, and the numerics exist through G-d' (יתברך וקיום החשבון בו יתברך) וקיום העולם באותיות, וקיום האותיות בחשבון, וקיום החשבון בו יתברך).

⁹³ *Pirquei Ovoth* ('Ethics of the Fathers'), I.18; *Zōhār*, vol. III, p. 176b; *Šabbath* 88a.

⁹⁴ כאיש אחד בלב אחד - *Mekhila*, Ex. 19.2.

⁹⁵ *Avōdah Zarah*, 26.

⁹⁶ Ex. 23.7; *Yōma* 69b; *Šabbath* 55a; *Yevamōth* 65b; *Bava Metsi'ah* 23b.

⁹⁷ *Leviticus Rabbah*, 9.9.

⁹⁸ R. Don Isaac Abravanel, *Abravanel on I Samuel*, 3:3; Maimonides, *Guide to the Perplexed*, 1:10, 6I; R. Judah Loew ben Bezalel, *Derech Chāim* (Machon Yerushalayim, 2005), Ch. 4, *Mišnah* 8.

⁹⁹ *Midrās Sifre on Numbers*, Ch. 42.

¹⁰⁰ כבר המשילו זאת חקרי לב למה שהמציאו חכמי המוזיקא בשני כלי זמר אחד גדול ואחד קטן העומדים בהיכל מוכן לכך בסדר ובערך ובגבול ידוע, שאם יפרטו על פי הנבל הקטן, יתן הנבל הגדול זמירות לעומתו, וכן ערך ה' שהנבל הגדול אשר עשה שהוא העולם בכללו, יתן זמירות לנגן נגונים שמחה או עצב, טוב או רע, לפי מה שיפרט האדם על פי הנבל הקטן שהוא גופו, שאם ישמיע נגונים ושרירים טובים ותשבחות כפי מצות ה' והוקיו ומשפטיו, כן ינגן הנבל הגדול שהוא העולם שירי שמחה וחדוה שפע וברכה וכל טוב, ואם ישמיע קול קינים והגה והי בעברו מצות ה' ותורתו, כן יגדל המספד *Malbim*, *Shemoth* 25, *Remozai HaMišhkon*.

¹⁰¹ B'rachoth 6a; Todros Ben Joseph Ha-Levi Abulafia, *Ozār hā-Kavōd* (Warsaw, 1879), *ad loc.*; R. David ibn Zimra, *Magen David* (Amsterdam, 1723).

¹⁰² See R. Moše Cordovero, *Tōmer Devōrah*.

¹⁰³ See, for example, Klaus Mainzer, *Symmetry and Complexity: The Spirit and Beauty of Nonlinear Science* (New Jersey: World Scientific, 2005), p. 35.

¹⁰⁴ Lippman, 'Hellenic Conceptions', p. 8; Günter Berghaus, 'Neoplatonic and Pythagorean Notions of World Harmony and Unity and Their Influence on Renaissance Dance Theory', *Dance Research: The Journal of the Society for Dance Research*, Vol. 10, No. 2 (Edinburgh Univ. Press, Autumn, 1992, pp. 43-70), p. 44, quoting Julia Kerschensteiner, *Kosmos: Quellenkritische Untersuchungen zu den Vorsokratikern* (Munich, 1962). Plato, too, emphasised the harmonic nature of the cosmos: see Plato, *Timaeus*, trans. by R. G. Bury (Loeb Classical Library, 1929), pp. 56-59; also, Plato, *Theaetetus*, trans. by H. N. Fowler (Loeb Classical Library, 1921), pp. 234-6.

¹⁰⁵ *Sefer Yetsirah* 1:1 – *Sefer Yetzirah: The Book of Creation: In Theory and Practice*, edited by Aryeh Kaplan (Red Wheel/Weiser, second revised edition, 1997), p. 5.

¹⁰⁶ R. Joseph Gikatilia, *Gināth Egōz*, p. 289: 'the existence of the world is through letters, the existence of the letters through numerics, and the numerics exist through G-d' (קיום העולם באותיות, וקיום האותיות בחשבון, וקיום החשבון בו יתברך. [...] באמת שם שהוא יסוד כל חשבון, וברא) (את העולם ותלאו בדרך חשבון [...]) והוא לא המציא דבר כי אם מאמתת החשבון ואינו מתנהג כי אם על דרך החשבון.

¹⁰⁷ See: R. Judah Loew, *Tifereth Yisro'el* (Warsaw: 1835), Ch. 25.

¹⁰⁸ *Rhys Carpenter, The Esthetic Basis of Greek Art: Of the Fifth and Fourth Centuries B.C.*, (Pennsylvania: Bryn Mawr College: 1921), pp. 107, 122, 128.

¹⁰⁹ Alexey Stakhov, *The Mathematics of Harmony: From Euclid to Contemporary*

Mathematics and Computer Science (New Jersey: World Scientific, 2009), p. 40; Euclid, *Elements* (Santa Fe, New Mexico: Green Lion Press, 2002), Book VI, Definition III; Mario Livio, *The Golden Ratio: The Story of Phi: The World's Most Astonishing Number* (New York: Broadway Books, 2002), p. 10. See also, Johannes Kepler (1571–1630), *Mysterium Cosmographicum* (Tübingen, 1596) trans. by A. M. Duncan (Abaris Books, 1981): 'Geometry has two great treasures: one is the Theorem of Pythagoras: the other the division of a line into extreme and mean ratio. The first we may compare to a measure of gold; the second we may name a precious jewel'.

¹¹⁰ Euclid, *Elements*, Book VI, Definition III.

¹¹¹ Ritendra Datta, Dhiraj Joshi, Jia Li, James Z. Wang, (2006) 'Studying Aesthetics in Photographic Images Using a Computational Approach', *Computer Vision – ECCV 2006: Lecture Notes in Computer Science*, eds. A. Leonardis, H. Bischof, A. Pinz (Berlin, Heidelberg: Springer, vol. 3953, pp. 288–301), p. 294; I. Christopher McManus, Fanzhi Anita Zhou, Sophie l'Anson, Lucy Waterfield, Katharina Stöver, Richard Cook, 'The Psychometrics of Photographic Cropping: The Influence of Colour, Meaning, and Expertise', *Perception*, (US: London, Pion: vol. 40, issue 3: 2011), pp. 332–57; Kamila Svobodova, Petr Sklenicka, Kristina Molnarova, Jiri Vojar, 'Does the composition of landscape photographs affect visual preferences? The rule of the Golden Section and the position of the horizon', *Journal of Environmental Psychology* (Elsevier: 2014, pp. 143–152), p. 144. See also, Livio, *The Golden Ratio*, p. 182; Sarah Kent, *Composition* (London: DK Adult, 1995); Alan Pipes, *Foundation of Art and Design* (London: Laurence King Publishing, 2003), p. 222.

¹¹² Gary Meisner, *The Golden Ratio – The Divine Beauty of Mathematics* (New York: Race Point Publishing, 2018), p. 55.

¹¹³ Regarding the golden ratio in *tsitsith*, see Mois Navon, 'Rav's Beautiful Ratio: An Excursion into Aesthetics', *Threads of Reason* (Ptil Tekhelet, 2013), pp. 104–114.

¹¹⁴ זֶה אֵלֵי וְאִנְוָהוּ, מִגִּילָה 9ב; see R. S. R. Hirsch, *The Hirsch Chumash*, Gen. 9.27.

¹¹⁵ "זֶה אֵלֵי וְאִנְוָהוּ"; Šabbath 133b; Mekhilta de-Rabbi Ishmael, Ex. 15.2.

¹¹⁶ The translation combines the Mekhilta (זה אֵלֵי וְאִנְוָהוּ, ר' ישמעאל אומר וכי אפשר לבשר ודם) with the Talmudic text (להננות לקונו אלא אנה לו במצות אעשה לפניו לולב נאה סוכה נאה ציצית נאה תפלה נאה "זה אֵלֵי וְאִנְוָהוּ" (שמות טו, ב), התנאה לפניו במצות, עשה לפניו סוכה נאה ולולב נאה ושופר נאה, ציצית) נאה, ספר תורה נאה).

¹¹⁷ Sukkah 2a/b, 7a. The eleven handbreadths comprise ten for the edifice, plus one for the *s'chach* (natural, temporary roof) as implied in Sukkah 2b.

¹¹⁸ Mišnah Roš Hašanah, 3.6. Interestingly, the hand is included in the Lurianic meditations of the ritual of blowing the *šofar* on Roš Hašanah.

¹¹⁹ See Menahōth 39a, based upon Numbers 15.38.

¹²⁰ Menahōth 39a; Maimonides, *Mišneh Torah*, Section: 'Laws of *Tsitsith*' 1.8; R. Joseph Karo, *Kesef Mišneh* ad loc; see Mois Navon, 'Rav's Beautiful Ratio: An Excursion into Aesthetics', *Threads of Reason* (Ptil Tekhelet, 2013), pp. 104–114.

¹²¹ Deut. 11.20; Menahōth 33a.

¹²² Menahōth 35a.

¹²³ Menahōth 35b; R. Asher ben Yechiel, (end of) *Laws of Tefillin* (end of Tractate Menahōth).

¹²⁴ Maimonides, *Mišneh Tōrāh*, Section: 'Laws of *Tefillin*', Ch. 3; R. Asher, (end of) *Laws of Tefillin*.

¹²⁵ Menahōth 36b/37a.

¹²⁶ Mišnah Sukkah, 3.1–3.

¹²⁷ Bava Bathra 14a. Regarding the Euclidean Rectangle, see Stakhov, *Mathematics of*

Harmony, pp. 21–22.

¹²⁸ Menahōth 30a.

¹²⁹ Vitruvius, *The Ten Books on Architecture*, trans. by Morris Hicky Morgan (1914), edited by Tom Turner (2000), Book 1, Chap. 2.4; Book 3, Chap. 1.1; Livio, *Golden Ratio*, p. 161. (Thomas Aquinas (1225–1274) similarly wrote, ‘beauty consists in due proportion, the senses delight in things duly proportioned’: Thomas Aquinas, *Summa Theologica*, I.5.4 (Thomas Aquinas, *Basic Writings of St. Thomas Aquinas: Volume 1* (Indianapolis, Indiana: Hackett Publishing, 1997), p. 47.)

¹³⁰ Mekhilta de-Rabbi Ishmael, Ex. 15.2.

¹³¹ אבא שאול אומר ואנוהו הוי דומה לו מה הוא חנון ורחום אף אתה היה חנון ורחום. Mekhilta de-Rabbi Ishmael, Ex. 15.2; Šabbath 133b; Raši, ad loc.

¹³² Mekhilta de-Rabbi Ishmael, Ex. 15.2.

¹³³ See R. Hayyim Vital, *Ma’amar Pesi’othov Shel Avrohom Ovnii* (Ahavath Šalom, 1998) that opinions in Midrash were not at variance but merely expressed different aspects of an idea.

¹³⁴ *Midrasch Tanchuma*, 7.16.

¹³⁵ See, for example, Morton Smith, ‘Palestinian Judaism in the First Century’, *Israel: Its Role in Civilization*, edited by M. Davis (New York, 1956), p. 71; Henry A. Fischel, ‘Story and History: Observations in Greco-Roman Rhetoric and Pharisaism’, *American Oriental Society, Middle West Branch, Semi-Centennial Volume* (1969), edited by D. Sinor, p. 82; Martin Hengel, *Judaism and Hellenism: Studies in their Encounter in Palestine during the Early Hellenistic Period* (Wipf and Stock Publishers, 2003); Lee I. Levine, Yisra’el L. Leyin, *Judaism and Hellenism in Antiquity: Conflict or Confluence?* (University of Washington Press, 1998).

¹³⁶ Deut. 30.19, 6.18; Mišnah B’rachōth 9.5.

¹³⁷ Mišnah, Uqtsin, 3.12; TY, Berachōth 17b.

¹³⁸ Cicero, *De Finibus Bonorum et Malorum*, trans. by H. Rackham (Loeb Classical Library, 1931), Book III.33, pp. 245, 253; Epictetus, *Discourses*, trans. by Robert Dobbin (Penguin UK, 2008), Book I, Chaps. 2, 4, 6.