

Raqi'a:

Form and Function of the “Firmament” as a Celestial *līmes/līmen* in Israelite Cosmology

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“It was the day after Tuesday and the day before Wednesday.”

—Edward Gorey, *The Epileptic Bicycle*

Introduction: Boundaries and the Study of Liminality

Boundaries are ubiquitous and varied. Our cosmos is full of geographical, temporal, social, and other types of boundaries. These boundaries take on widely diverse forms and fulfill many different functions. The study of boundaries as “liminal space,” the “space between,” the “interstice,” “the interface,” is currently also ubiquitous and varied. It is a broad endeavor covering a wide variety of topics, from ancient cosmological modeling to modern interdisciplinary studies. Entering the search terms “liminal space” in Internet search engines results in links to topics such as “Grieving as Sacred Space”; “The Tomb as Liminal Space”; “The Curriculum as Liminal Space”; “Looking for Liminality in Architectural Space”; “Situating Liberalism in Transnational Legal Space”; a Christian sermon on the book of Romans entitled “Living in Liminal Space”; a Göteborg University and Copenhagen Business School presentation entitled “Consulting as a Liminal Space”; a variety of art and museum exhibits on “Liminal Spaces”; and much, much more. At www.liminalspace.co.uk you are encouraged to “get into LiminalSpace” —

If you recognize that the best ideas emerge at the boundaries and borders of knowledge.
If you want a journal that examines the interfaces between art and science, politics and spirituality, matter and mind...” [bold emphasis theirs—G.M.]

Liminality as an academic enterprise has its roots among philosophers and cultural anthropologists of the early-to-mid twentieth century. Arnold van Gennep’s *Les Rites de Passage* (1909; English, *The Rites of Passage* 1960) describes transitions across social borders as a tripartite process of (1) separation, (2) transition, (3) (re-)incorporation (Fr. *séparation, marge*

[cp. Engl. "margin"], *agrégation*).¹ Transition marks the "liminal space" between the state left behind (from which one is separated) and the newly acquired state (which marks *incorporation* into a new social state, or in another sense, a *re-incorporation* into the community). Victor Turner's *The Ritual Process* (1969) develops and expands upon van Gennep with particular focus placed upon the transitional, or liminal, stage. Religious philosophers such as Émile Durkheim (*Elementary Forms of Religious Life* 1912) and Mircea Eliade (*The Sacred and the Profane* 1959) focus on the respective territories demarcated by the terms "sacred" and "profane." As we will see, the study of liminality sometimes focuses on the boundary itself as the "space-between," and other times on the regions divided from each other by the boundary.

Liminal spaces are often associated with dualistic roles of benefit/danger. Some liminal events are (or turn out to be) favorable and celebratory; others are (or turn out to be) ominous and malevolent. A liminal space or zone lies "in-between" the familiar and fixed zones; a liminal space therefore does not necessarily share the rules associated with the realms it divides. That means its very nature is unpredictable, and that implies potential for chaos. Whatever is "outside the bounds" is "not bounded" by rules. "Where there is no law, neither is there violation" (New Testament, Rom 4:15)—but there *can* be chaos. When the liminal space itself becomes confused and chaotic, as in the inverse (or negatively overlapping) liminal temporal space suggested by the sub-title caption quotation from Edward Gorey, life becomes surreal (as the ensuing story of Embley and Yewbert's "epileptic" bicycle ride reveals). In *The Ritual Process*, Victor Turner describes the nature of the liminal state as follows:

During the intervening "liminal" period, the characteristics of the ritual subject (the "passenger") are ambiguous; he passes through a cultural realm that has few or none of the attributes of the past or coming state... The attributes of liminality or of liminal *personae* ("threshold people") are necessarily ambiguous, since this condition and these persons elude or slip through the network of classifications that normally locate states and positions in cultural space. Liminal entities are neither here nor there; they are betwixt and between the positions assigned and arrayed by law, custom, convention, and ceremonial.²

¹ Arnold van Gennep, *Rites of Passage*, 11.

² Victor Turner, *Ritual Process*, 94–95.

Thesis: *Raqi'a* ("Firmament") as a Liminal Concept

If, or to what extent, the Israelite cosmological term *raqi'a* (translated mostly "firmament" in English Bibles) is an expression or reflection of a transitional or *liminal state* is the subject of this paper. To what degree it has anything to do with *human activity* is a question only partially answered in this paper; but I hope to have at least here laid the groundwork upon which this question can be more thoughtfully pursued. Its purpose is neither to present a complete cosmological model of the Israelites, nor to cover every conceivable verbal connection between *raqi'a* and related terms such as *heaven(s)*. The scope is limited to an investigation of *the liminal properties of raqi'a* as outlined below, as far as they can be determined.

In preparing this paper, I observed that works dealing with the subject of liminality frequently begin not only by defining the word "liminal," but also by giving its Latin root, as though there is some intrinsic connection between the *Latin word origin* and the *subject* of liminality. Rather than reject the identification of the Latin root as an irrelevant linguistic datum, it is here explored at the outset even more deeply than is normally done; but the reason for so doing is merely to generate a set of meaningful questions that broaden the scope of investigation and yet identify and sharpen the focus of specific points pertaining to *raqi'a* and its relationship to liminal concepts.

A. Areas of Focus Derived from Root Ideas of the Latin Terms *līmes/līmen*

The word "liminal" is derived from the Latin *līmen* (from the root *līmus* "transverse, oblique") and means first (1) "one of the transverse beams in a door-frame, threshold." It can be used to denote (2) an "entrance, doorway," and then, by metonymy, (3) "a house, home." In general, it is "the point at which one passes into (or emerges from) something" or the "verge (of some condition, action, etc.)." Thus, a *līmen* can denote either (1) the place of entrance or (2) the place entered. Another word, *līmes* (probably from the same root as *līmen*) shows the same duplicity of

usage: "boundary of a plot of land; also, a piece of land enclosed within the boundaries."³

Discussions of "liminal space" often exhibit (consciously or not) this same duplicity: sometimes the concern is with the interstitial space or boundary itself; other times the focus is on the space or spaces delimited or defined by the boundary. After introducing the terms "separation," "transition," and "incorporation," van Gennep provides an alternate set of terms: "preliminal," "liminal," and "postliminal" (Fr. *preliminaires, liminaires, postliminaires*).⁴ The first set of words puts emphasis on the regions outside the *marge*, whereas with the second set the focus of all three terms is on their connection to the *līmen*.⁵ While the two concepts of "boundary" and "space marked off by the boundary" in many cases may be viewed as inextricably related, the current discussion is cognizant of their difference and will make it clear when each is in view.

From the definitions of *līmen* several areas for our investigation emerge: In the first definition the term "transverse" suggests *position* (how situated); "beams" suggests *substance* (strong, solid material), *form* (generally straight), and *function* (supporting); the third definition "house" suggests *space demarcated* (another aspect of *position*); the second definition "doorway" suggests an additional aspect of *function* (allowing access or entry).

The words *līmen* and *līmes* may relate to each other in this way: The *līmen* is an opening allowing passage through a *līmes*. The *līmes* often served not only to mark a boundary, but also to deny or impede passage from one side of the *līmes* to the other. One need think only of *The Limes* ("Limes Germanicus"), that earthen-stone, four-foot thick, ca. 300 mile long structure constructed in the 2nd century C.E. to protect Roman provinces from the Alemanni. In this specific case, the *līmes* also had these properties (1) *substance* (earth-stone), (2) *form* (wall), (3) (a) *position–placement* (through central Europe), (b) *position–space demarcated* (territories of Roman provinces and those of Germanic tribes) and (4) *function* (protection). Whereas the Limes Germanicus served to keep people from *coming into* a region, another type of *līmes*, such as a prison wall, keeps people from *going out* of a region. Sometimes the directionality is a

³ All definitions in this section from *Oxford Latin Dictionary*, 1031.

⁴ Arnold van Gennep, *Rites of Passage*, 11, 21.

⁵ This dual labeling of the three-fold transition process is also noted by Victor Turner in *The Ritual Process*, 166.

matter of dispute. Before its fall in 1989, the Berlin Wall was viewed by some as a barrier *against intrusion* of undesirable influences; for others it was the equivalent of a prison, designed to keep people from *leaving* a region.⁶

In the treatment so far an assumption has been made that a *līmen* (or *līmes*) has some finite, measurable "thickness." It is certainly possible to conceive of a dimensionless boundary. As a child traveling across the U.S. on family vacations on state highways (i.e. before the construction of interstate freeways), it was a momentous occasion to stop at a state boundary and have pictures taken with one foot in one state, another foot in a different state. The "state line" had no real dimension (though one could "stand" on it; but then one could say that a part of the foot was in one state, while the other part was in a different state). On a 1997 business trip to central Russia, we were taken by our hosts into the Ural Mountains, where, at the continental divide there is a monument with the words "Europe" on one side and "Asia" on the other. There is a parking lot there where tourists take pictures of people with one foot in Europe, the other in Asia.⁷

Sometimes, however, the "state line" wasn't dimensionless. There would be a sign that said, "Leaving Arizona" and then, a short distance later another sign, "Welcome to California." I never did figure out what that space between the signs was all about. Whose laws apply there?⁸ I vividly remember several visits to the (then West) German city of Lübeck in the 1980's (before 1989), to a most intriguing spot on a cul-de-sac of a residential neighborhood directly on the border between East and West Germany. The border itself was marked by a simple log with a sign: "Halt! Hier Grenze!" (Stop! Border here!) But there were no fences, no towers; in fact, anybody could walk right across that log and easily cross that border. The fences and towers were set back from the border several hundred yards across an open field, creating a literal "dead

⁶ A similar ambiguity is noted by van Gennep in his discussion of religious ritual: "All these rites...are sometimes so intimately intertwined...that it is impossible to distinguish whether a particular ritual is, for example, one of protection or of separation." *Rites of Passage*, 12.

⁷ Note again van Gennep, "The frontier, an imaginary line connecting mile-stones or stakes, is visible—in an exaggerated fashion—only on maps." *Rites of Passage*, 15.

⁸ Van Gennep mentions such "neutral zones" in *Rites of Passage*, 18.

man's zone." There was always a friendly West German border patrolman nearby to remind onlookers like myself not to be so foolish as to try to have someone take a picture of me standing in East German territory. As he explained, out of sight to me, but very near among the trees were East German border guards who would quickly converge on the scene; they were listening in on our very conversation. That particular "interstitial" space between border and fence was both a danger and an attraction.

It is equally possible to conceive of temporal boundaries as either (1) dimensionless separators of two temporal zones, or (2) temporal "spaces-between" with a finite "thickness" (a measurable extent of time). At "New Year's" how much time does the clock spend at precisely 12:00:00 midnight? The exact "moment" of passage from one year to the next is dimensionless. On the other hand, "intermissions" of plays or operas are measurable periods of time between parts or acts.

With these theoretical-linguistic and practical-experiential aspects of liminal space in mind, we set out now to explore the following concepts of liminality associated with the Hebrew *raqi'a*, but not necessarily in a linear or isolated fashion:

1. Does it possess finite, measurable *thickness*, or is it a *dimensionless* boundary?
2. Is it associated with an identifiable *substance*?
3. Does it have a specific *form*?
4. What is its *position-location*?
5. What are the *regions demarcated* by it?
6. What is (or are) its *function(s)*? Is it a *līmes* (protective boundary) or *līmen* (port of entry), or both? If *līmes*, does it keep *out*, or keep *in*? If *līmen*, does it allow access in both directions, or only one, and in either case, when, how, by what or by whom is access or entry possible?
7. Are there any implications for broader areas of cultural anthropology, theory of ritual, or the study of religion in general?

B. The Nature of the *Raqi'a*

1. *Raqi'a* in Genesis 1.

The average modern reader of Genesis 1 has no problem identifying and/or locating in the material universe most of the objects or phenomena mentioned in the chapter: earth, light, darkness, evening, morning, water (or waters, bodies of water), dry land, seas, grass or vegetation, herbs or plants, fruit trees, day, night, stars, birds, sea creatures, land creatures, male and female humans. Some terms are easily identified even though their regular names are not given: two great lights—the greater (lit. great) light and the lesser (lit. small) light, which we easily identify as the sun and moon respectively.

However, a few items are not as easily envisioned or understood: heavens, firmament (or "expanse," *raqi'a*), the deep; and perhaps even the terms "God" or "Spirit of God" ("wind of God?").

What we are told about *raqi'a* in Genesis 1 can be summarized as follows:

- a. God called it by name: "Let there be a *raqi'a*." (1:6)
- b. It was assigned a *separating function* and a *position*: "let it separate the waters from the waters." (1:6)
- c. It was "made" and put into service: "And God made the *raqi'a*, and separated the waters which were below the *raqi'a* from the waters which were above the *raqi'a*." We learn here also more about its position relative to the regions separated; those regions are related to each other in a *vertical* relationship, as opposed to a *lateral* one. (1:7)
- d. The *raqi'a* is given an additional name: "And God called the *raqi'a* heaven(s)." (1:8), though in actual usage we may find some non-overlap between the terms *raqi'a* and *heaven(s)*. In this paper, passages using the word *heaven(s)* will be considered only when there is a clear parallel to the meanings and uses of *raqi'a*.

- e. We are given additional information about the region *below* the *raqi'a*: "Let the waters below the *heaven(s)* be gathered into one place, and let the dry land appear." But we are not further informed about the waters above the *raqi'a* (1:9)
- f. Sun, moon, and stars are placed *in* (Heb. *be-*, *-בְּ*) the *raqi'a of the heaven(s)* (1:14, 15, 17). Here we are informed about an additional *function* of the *raqi'a*: it is the place in which the luminaries are *put, held in place*. These luminaries, now firmly and in an orderly manner fixed into the *raqi'a*, whatever it is made of, have a direct effect on human life and activity as they provide regulation for important aspects of time. In fact, the luminaries themselves have liminal value as dividers between light and darkness, between day and night, for signs (omens?) and times of festivals or appointed meetings (often translated "seasons"), and for calendrical purposes (days and years). We now have luminaries possessing primarily *temporal-liminal* functions embedded within the *raqi'a* possessing primarily *spatial-liminal* functions.
- g. Birds are to fly (1) above the earth, and (2) *on the face/surface of* (Heb. *al p^enēy* *עַל-פְּנֵי*) the *raqi'a of the heavens*. The idea is that the birds fly in the space between earth and the *raqi'a*, i.e., against the "backdrop" of the *raqi'a*, but not beyond it. This becomes an additional liminal space, still above the earth, but below the *raqi'a*. In several passages it is referred to as the space "between earth and heaven" (1 Chr 21:16; Zech 5:9; Ezek 8:3: "the Spirit lifted me up between earth and heaven") or "between heaven and earth" (2 Sam 18:9; EpJer 6:54 "they are like crows, between heaven and earth"). 2 Sam 18:9 shows that this space begins not far from the earth's surface. When the mule upon which Absalom was riding went under the thick branches of an oak tree, Absalom's head got caught in the tree and the mule rode off without the rider. (Absalom was known for his excessively heavy hair, 2 Sam 14:26). The account states that Absalom was thus "placed between heaven and earth." Depending on the size of the mule, one can imagine Absalom hanging with feet perhaps only inches from the ground.

time: "day to day" and "night to night" (a virtual double merism) though not in actual "words" (according to one rendering; the Hebrew text is difficult).

But how does the *raqi'a* communicate if not in actual words? It does so, for instance, in the regularity of the sun's circuit "from one end of the heavens...to the other end of them" (19:6). This regularity speaks a message about God and his works. Moreover, the sun is quite "happy" to fulfill this regularity without wavering, as it is personified as both "bridegroom" and runner (or, winner) of a foot-race (a strong man who rejoices to run his course) (19:5).

These two personifications reflect liminal concepts: (1) The "bridegroom coming out of his chamber" is in the midst of a wedding feast that takes place during the in-between social states of "not-married" and "married." (2) The runner's race takes place between "pre-race" and "post-race" temporal zones.

At first glance, the second part of Psalm 19 (verses 7–14) appears to have little connection with the first part; some have suggested that the two parts were originally separate Psalms. The parts may be organically connected by the word "rejoices" in v. 5. As the heavenly bodies "rejoice" in keeping their established laws of motion and function, so also the keeping of laws designed for humans "rejoices the heart," v. 8 (the words "rejoice" in vv. 5 and 8 are from different roots in Hebrew, but the idea is the same). We prefer to categorize and separate "natural laws" from "divine/moral/ethical laws," but it is by no means clear that the Israelites made such a distinction. What appears to us to be an abrupt joining of two completely separate themes in Psalm 19 may rather reflect a conception of unity in the mind of the psalmist. This unity of law that governs both nature and humans, and the connection of that dual-aspect law with "the glory of God," is carried into early Christian thought by Paul:

For the God who said, "Out of darkness light will shine," is the one who has shone in our hearts unto enlightenment of the knowledge of the glory of God in the face of Christ. (2 Corinthians 4:6; my own translation—G.M.)

Psalm 19 thus furnishes a link between two aspects of *raqi'a* as (1) the place where heavenly bodies are located and regulated (as in Genesis 1) and (2) the place where laws governing humans originate. The way is now paved for a conceptual transition to *raqi'a* as the place of God's dwelling.

In Psalm 150 we learn of an important aspect of *position-location* of the *raqi'a*: It is identified (by the synonymous parallelism) with God's "sanctuary." The import of the preposition "in" is just as ambiguous in Hebrew as it is in English: it can here refer: (1) to the place in which the praise is to occur, or (2) the place in which the God who is to be praised is found. Thus, it presents two options for interpretation:

- (1) Praise God when you are in his sanctuary or his mighty *raqi'a*; or:
- (2) Praise the God who is in his sanctuary or his mighty *raqi'a*.

The first understanding would imply a view of the temple in Israel that mirrors the dwelling of God in the *raqi'a* above the earth. The second understanding simply states that God's own dwelling is located in the *raqi'a*. In either case, there is some tension in Hebrew texts with regard to localizing God in a too rigid manner. At the prayer of dedication of the temple, Solomon, in a remarkable aside, says: "But will God truly dwell on the earth? See, the heavens and the heavens of the heavens cannot contain you, how much less this house that I have built!" (1 Kgs 8:27). Most probably the answer to the question of whether view (1) or (2) is correct, is: both (1) and (2). There is a conceptual link between the heavens above and their representation below. The one who praises YHWH is thereby elevated—in some way—to the place of God's sanctuary; the liminal boundary of the *raqi'a* is—in some way—thereby crossed, from below to above.

We can here see an additional distinction in the two realms separated from each other by the *raqi'a*. In Genesis 1 the *raqi'a* separated waters above the *raqi'a* from waters below it. In Psalm 150 we can also infer a distinction that is explicitly stated in Psa 115:16:

The heavens are heavens *belonging* to YHWH,
and (but) the earth he has given to the sons of men.

The *raqi'a* thus serves the *function* of dividing the realms of YHWH and humans; it is a veritable line separating "sacred" from "profane" zones.

3. *Raqi'a* in Ezekiel.

All but one of the remaining occurrences of *raqi'a* occur in Ezekiel, four in Ezekiel 1, one in Ezekiel 10. In the vision of Ezekiel 1 there appear a storm wind from the "north" (ominous in itself, but additional comment must wait for another treatment), and a great fire-flashing cloud within which are strange-looking figures called "living beings." They are true inhabitants of liminal spaces; they do not follow established rules of formation; they are hybrids, outside the bounds of ordered space. They have a human form (however that can be reconciled with what follows) with four faces and four wings. They have straight legs and hoofs like a calf. They shine like polished bronze. They have hands under their wings. They each have the same combination of faces: human, lion, bull, eagle. They inhabit dangerous territory—in their midst fire like torches darts back and forth. They each possess a wheel, rather, a wheel within a wheel, each with a rim full of eyes.

Now there is "a form" (or "likeness") *over* the heads of these "living beings" — "a *raqi'a*" which is further described as having "an awe-inspiring gleam of crystal" (the last word can also mean "ice" or "frost") (1:22). *Under* the *raqi'a* the wings of the living creatures are stretched toward each other's wings (1:23). Ezekiel hears a voice coming from *above* the *raqi'a* (1:25). In addition, *above* the *raqi'a* he sees the likeness of a throne, with an appearance like lapis lazuli, and upon the likeness of the throne was the likeness of a human (1:26). After additional description, Ezekiel summarizes this part of his vision: "This was the appearance of the likeness of the glory of YHWH, and I saw, and I fell on my face, and I heard a voice speaking." The occurrence of *raqi'a* in Ezek 10:1 is a vision similar to that of Ezekiel 1.

It is important to note the frequent usage of the word "likeness" or "form" in the Ezekiel passages. What he sees are not really the things themselves; they are *like* them. Taking that differentiation into account, the passage still informs us more about the nature of the *raqi'a* in

that it tells us what it is *like*. We receive here our first clue as to the *substance* of which the *raqi'a* consists: it is something *like* crystal (or ice, or frost). In Ezekiel the *raqi'a*, like in Genesis 1, serves as a divider or separator, though not of two regions of waters. The *raqi'a* appears to be both visible as well as transparent. Ezekiel sees both the *raqi'a* as well as *beyond* (*above*) it. We might liken it to looking out of a window: We know the window is there, but we can still see through it; and we can identify objects on this side, and on that side, of the window.

There is also a point of similarity between Ezekiel and Psalm 150: *raqi'a* is a place where God (Yah, or YHWH) resides, in a sanctuary (Psalm 150), on a throne (Ezekiel 1). But *where* is Ezekiel looking? Ezekiel is getting a glimpse into the liminal space of heaven, just as the beginning of the book says: "the heavens were opened, and I saw visions of God" (1:1). His vision into the liminal space itself combines familiar with unfamiliar elements in a manner similar to the description of ritual by Eliade:

But the irruption of the sacred does not only project a fixed point into the formless fluidity of profane space, a center into chaos; it also effects a break in plane, that is, it opens communication between the cosmic planes (between earth and heaven) and makes possible ontological passage from one mode of being to another.⁹

Ezekiel sees new and chaotic images as well as the familiar elements of the "profane space" associated with the *raqi'a* — (1) there is "earth"—one wheel was "on the earth" (1:15) and the living beings rise up "from the earth" (1:19); (2) there are "waters," or rather wings "like the sound of abundant waters" (1:24); and (3) there is an appearance of "the rainbow in the clouds on a rainy day" (1:28). The sacred and the profane are merged in the liminal space afforded by the vision. But spatial dimensions have become surrealistic: The opening of the heavens, or *raqi'a*, reveals another *raqi'a-like* object; like the "wheel within a wheel," we appear to have here a *raqi'a* within a *raqi'a*. Is Ezekiel really "inside" the *raqi'a*, or is he both on this side and on that side, in an undefined, ambiguous space like the ambiguous temporal space of Edward Gorey's "the day after Tuesday and the day before Wednesday"? Is he a "threshold person?"¹⁰

⁹ Mircea Eliade, *The Sacred and the Profane*, 63.

¹⁰ See quotation from Turner's *Ritual Process* at the bottom of page 2.

4. *Raqi'a* in Daniel.

The final occurrence of *raqi'a* in the Hebrew Bible is Daniel 12:3:

And those who have insight will be radiant like the radiance of the *raqi'a*;
and those who lead the many to righteousness, like the stars forever and ever.

This passage comes close to connecting humans with the *raqi'a*, but it falls short of indicating that humans will be enabled to “pass through” the *raqi'a* and enter the realm of upper waters, or more invitingly, God’s sanctuary. It says only that certain ones—those with insight and who lead many to righteousness—will be *like* the *raqi'a* or the stars, and that they will live forever.

5. Progression of aspects of *raqi'a*.

In following this order of passages in which the term *raqi'a* occurs—Genesis, Psalms, Ezekiel, Daniel (which represents the chronological order from the internal view of the texts)—we can chart the progression of aspects of *raqi'a* as follows:

Passage	Form/Substance	Aspect
Genesis 1	Celestial object	Spatial and temporal functions in the material universe
Psalms 19, 150	Celestial object <i>and</i> place of God’s residence (divine space, either celestial heavens or earthly temple)	Communicative and directive functions in the material and moral universe
Ezekiel 1, 10	Divine space	Liminal space where “profane” and “sacred” are merged
Daniel 12	Comparative space	Representative image of eternal destiny of righteous humans

C. Other Words Related to *Raqi'a*

Although we have now completed an overview of Biblical Hebrew texts in which the specific word *raqi'a* is found, we have not exhausted what might still be deduced about the word, since the underlying root of *raqi'a* is found in other words, some of which occur in passages with relevant cosmological meaning. The words and passages are given in the Appendix.

In summary, the semantic fields of words based on the root *rq'* can be divided into two groups: (1) If the middle root letter is not doubled (Qal, Hiphil verbal forms), the meanings are *spread out* (involving hands, cp. Isa 45:12: "It was my hands that stretched out the heavens"); and *stamp, trample* (involving feet); and (2) If the middle root letter is doubled (Piel, Pual verbal forms plus one noun form), the meanings are all related to turning metals (gold, silver, copper) into thin sheets, or applying thin metal sheets to an object. The word *raqi'a* belongs structurally to the first category (middle root letter not doubled). While the second category of words is *limited* to thin metals, the first category may also *include* thin metals, as in Job 37:18.

Cosmologically-related passages are Isa 42:5; 44:24; Psa 136:6, and Job 37:18. The first three refer to spreading out the earth,¹¹ with the additional point of spreading it out *over water* in Psa 136:6. Job 37:18 gives us additional information as to *substance*: the heavens are made of shiny (mirror-quality) molten metal. This is in contrast to Ezekiel's *crystal-like* description, but on the other hand similar to it in that both represent *bright, shiny* and probably also *thin* (see below) substances.

¹¹ The Dead Sea Scroll document *Thanksgiving Hymns* 1QH 3:31 also has "the expanse (*raqi'a*) of the dry land" where "dry land" is parallel with "earth" in the preceding line.

D. Other Cosmological Passages Relating to *Raqi'a*

There are a few additional passages we can relate to the *raqi'a* and its properties.

1. Heavens are like a clear pavement of lapis lazuli.

The description of the throne in Ezekiel 1:26 as like lapis lazuli reminds of the appearance of God in Exod 24:10 to Moses, Aaron, Nadab, Abihu, and the seventy elders of Israel, who "saw the God of Israel; and under his feet *it was* like the appearance of a stone-pavement of lapis lazuli, like the very heavens for clearness (purity)."

2. Heavens are likened to thin materials that can be worn, stretched, spread, rolled, and withered.

a. Garment. In Psa 102:24–26 both the earth and the heavens are compared to a garment that wears out and must be replaced ("changed").

b. Scroll, leaf. In Isa 34:4 the heavens will be rolled up as a scroll (*sepher*), and all the host of heaven withers as a leaf from the vine.

c. Gauze (or veil?), tent. In Isa 40:22 the heavens are stretched out like gauze, and are spread out like a tent. For the tent imagery, see also Psa 19:4; 18:11; 104:2; Job 36:29.

Especially interesting is the interplay of the various terms for God's residence in Psa 27:4–6 that parallels our earlier discussion of Psalm 150.

3. Windows in the heavens.

The waters of the flood in Noah's day came from two sources: (1) the fountains of the great deep (same word as in Gen 1:2) and (2) the "windows" (hatches, holes) of the heaven(s), Gen 7:11; 8:2, from which presumably the "waters that were above the *raqi'a*" (Genesis 1) fell through to the earth. The flood did not deplete the waters above the *raqi'a*; they remain as a source for future downpours (2 Kgs 7:2, 19; cp. Psa 148:4). Whatever the *raqi'a* is made of—crystal, lapis lazuli, molten metal (like a mirror)—or to whatever it may be compared—clothing, tent fabric, scroll material, gauze, leaf—its relative *thinness* allows one to easily conceive of openings in it.

Here we find that the *raqi'a* as *līmes* or boundary contains *līmina* or portals that, when opened, can have a direct effect on human life. We first note that in all such cases the directionality is only from above to below: from above the *raqi'a*, down through it, and to the earth below to the realm of mankind. What happens when the portals are opened can be for the good of humans, or to their harm and detriment. In the case of the flood of Noah, opening the windows of heaven (along with the opening of the floodgates of the deep) contributed to the near extinction of animate life on earth. Similarly, when Isaiah (24:18) says "The windows from on high are opened" the people are not to think of something pleasant. Backing up to Isa 24:17 the passage reads:

Terror and trench [pit] and trap, upon you O inhabitant of the earth. And it will be that he who flees from the sound [or, report, lit. voice] of terror will fall into the trench [pit]. And he who goes up from the midst of trench [pit] will be caught in the trap. For the windows from on high are opened, and the foundations of the earth shake. The earth is breaking...

On the other hand, opening the portals of the *raqi'a* can be beneficial to humans. Mal 3:10–12 promises:

Bring the whole tithe into the storehouse, and let there be food [prey, what is torn] in my house, and put me thereby to the test, says YHWH of hosts. I will certainly open to you the windows of the heavens, and I will pour out [or, empty out] for you a blessing until there is no more need...All the nations will count you happy...

The liminality of the *raqi'a* thus entails aspects of danger-chaos and benefit-blessing. It can be both feared and praised.

E. The Greek Understanding of the Hebrew *raqi'a*: Evidence from the Septuagint

Additional evidence for the Israelite view of *raqi'a* can be found by examining the Greek term used by the 3rd century B.C.E. Alexandrian Jews who began the work of translating the Hebrew Bible into their vernacular (or Koine) Greek. The word they consistently chose to translate Hebrew *raqi'a* is στερέωμα (*sterēōma*), which in its earliest usage in Greek literature has no connection with Greek cosmological models. In fact, στερέωμα is a relatively rare word. A search for all of its forms on the TLG CD-ROM (Version E) yields no hits in the 8th–7th centuries B.C.E., one hit for the 6th cent., one hit for the 5th, two hits for the 4th, none for the 3rd, six for the 2nd, and six for the 1st cent. B.C.E. That is only a total of 16 occurrences in millions of words of extant Greek texts over a period of eight centuries (excluding the LXX itself).

The single 5th century occurrence is in the pseudo-Hippocratic work "Breaths" (*peri physōn* or *De flatibus*):

For the wind when it condenses flows as water, and going through the channels passes on to the surface, just as steam rising from boiling water, should it meet a **solid object** [στερέωμα] that it must strike, thickens and condenses, and drops fall away from the lids on which the steam strikes.¹²

There is some clear overlap between the use of στερέωμα here and the Biblical Hebrew *raqi'a*: (1) both are solid objects, and both (2) cover something. Whether there is any further parallel of water evaporating from seas, striking the *raqi'a* as a lid, causing drops to fall in the form of rain, seems doubtful.

For the 4th cent. B.C.E. the two occurrences are as follows:

Aristotle, *Parts of Animals*, 655a:

In the creatures which though blooded are not viviparous Nature has made a series of graduated changes: for example, birds have bones, but they are weaker than the bones of the Vivipara. The oviparous fishes have fish-spine, not bone; and the serpents have bone whose nature is that of fish-spine; except the very large species, and they have bones,

¹² Loeb edition, pp. 238–241; the Greek word is found on p. 238 at viii, line 38.

because (just like the Vivipara) if their bodies are to be strong the **solid framework** [στερέωμα] of them must be stronger.¹³

Theophrastus, *Enquiry into Plants*, 5.7.3.6:

The work of brentwood for vessels is made of mulberry manna-ash elm or plane; for it must be tough and strong. That made of plane-wood is the worst, since it decays. For triremes some make such parts of Aleppo pine because of its lightness. The **cutwater**¹⁴ [στερέωμα], to which the sheathing is attached, and the catheads are made of manna-ash mulberry and elm: for these parts must be strong. Such then is the timber used in ship-building.¹⁵

In both of these 4th century occurrences the main idea of στερέωμα is "strong, solid support."

As we enter the 3rd century B.C.E. we find no occurrences of the word, except for its use in Genesis as a translation of *raqi'a*.

In a later interesting passage from the 1st–2nd century C.E. work *Testament of Abraham*, we have:

And after Abraham saw the place of judgment, the cloud took him down to the firmament [στερέωμα] below. And when Abraham looked down upon the earth, he saw a man committing adultery with a married woman...¹⁶

The στερέωμα is here conceptualized as something upon which one can position oneself (stand) from above, and yet still see through it to the earth below. This is just like the concept found in Ezekiel 1, except from the reverse direction: it is a clear, but solid object.

¹³ Loeb edition, pp. 166–167; the Greek word is found on p. 166 at line 23.

¹⁴ Translator's footnote: "apparently the fore part of the keel"

¹⁵ Loeb edition, pp. 456–459; the Greek word is found on p. 456, section 3, line 6.

¹⁶ James H. Charlesworth, ed., *The Old Testament Pseudepigrapha*, 1: 901 (12:2, Recension B)

F. Parallels from the Ancient Near East

There are numerous parallels in the literature of the ancient Near East outside of Israel that could provide additional insight into the conception of the *raqi'a* among the Israelites. Three representative samples are given below. A more detailed analysis would surely yield interesting results, but such a treatment goes beyond the scope of this paper.

1. Ugarit/Syria.

There are clear Ugaritic parallels between Mighty Ba^lu's "latticed window...opening a rift in the clouds"¹⁷ and the Hebrew "windows of heaven."

2. Mesopotamia.

In *Enuma Elish* Marduk splits Tiamat in two and:

Half of her he set up and made as a cover, heaven.
He stretched out the hide and assigned the watchmen,
And ordered them not to let her water escape.
He crossed heaven and inspected (its) firmament.¹⁸

3. Egypt.

In Egypt there are parallels with the goddess Nut, the celestial woman on whose belly the heavenly luminaries run their course. Yet whereas the Israelites (and only then in the late text of Daniel 12) envision the possibility of becoming *like* the brightness of the firmament, at least some Egyptians "believed in a life after death and in the possibility of ascending into the celestial realms."¹⁹

¹⁷ *The Context of Scripture*, 1:262, see lines vii 13–25.

¹⁸ *The Context of Scripture*, 1:398, see lines 137–141.

¹⁹ Edward Wright, *Early History of Heaven*, 19.

Summary

In summary, what we have been able to identify about *raqi'a* (with reference to our original set of questions) is as follows:

1. *Raqi'a* appears to be thin, but not dimensionless. If the Ezekiel 1 passage is interpreted as an "opening up" of the *raqi'a* itself, then of course it has virtual thickness in which much takes place, all strange, dangerous and wonderful. However, since the passage is also identified as a "vision" it may simply represent the opening up of a parallel world, such as the one Elisha enabled his servant to see via his famous prayer: "open his eyes that he may see" (2 Ki 6:17). But perhaps the parallel world *is* the *raqi'a*, the "space between."

2. The *substance* of the *raqi'a* is not constant throughout the texts. It is also mostly described as "like" something, so it is difficult to be specific. Job 37:18 does say it is "strong." Hence, the Latin-derived "firmament" ("support, prop, stay") is not far off the mark.

3. As to its *form* we are not definitely informed. Koehler–Baumgartner give etymological links to Phoenician and Akkadian words for "bowl" or "metal kettle" which may combine the ideas of thin metal sheets and a curved dome-like shape.²⁰ Whether or not the curved bowl shape is *inherent* also in the Hebrew *raqi'a* needs demonstration. A parallel term, *'ug*, used in Job 22:14 and often translated "vault" ("And he treads the *'ug* of the heavens") has the meaning "circle" or "disk" without any idea of projection beyond a plane in both verbal and substantive forms: Job 26:10, "He has inscribed a circle on the face of the waters at the boundary of light and darkness"; Prov. 8:27, "When he established *the* heavens, I was there; when he inscribed a circle on the face of the deep"; Isa 40:22, "He is the one sitting over the circle of the earth." However, in Sirach 43:12 *'ug* does mean "arc" as it is likened to the rainbow. The likening of the heavens to a "tent" (e.g., Isa 40:22) may be the strongest evidence for the idea of vault-like form of *raqi'a*.

4. Its *position* is (1) above the range of flight of birds, out where (2) the heavenly luminaries are located.

²⁰ *The Hebrew and Aramaic Lexicon of the Old Testament*, Study Edition, 1:1292.

5. *Regions demarcated* by it are: (1) a subordinate liminal space ("between heaven and earth"), (2) waters above it, (3) God's abode—sanctuary, throne, tent.

6. Its *functions* are: (1) as *līmes* it keeps the waters above it from constantly inundating the earth, but does allow through *līmina* (2) rain to fall that can put an end to a famine, and (3) blessings that come from God. Access to it or its environs can be granted either in the form of (1) a vision, or (2) via a religious experience (praising God, Psa 150), or (3) via fearless affirmation of trust in God (Psa 27). Insightful people who lead others to righteousness may look forward to becoming like it and like the stars embedded in it (Dan 12).

7. The analysis of *raqi'a* in this paper shows it to be far more than a mere designation of a celestial object. It also has clear religious significance. It not only separates celestial from terrestrial waters, it separates the "sacred" domain of YHWH from the "profane" domain of humans. Yet humans, under conditions, are able to cross the liminal threshold of the *raqi'a* separating these domains. The possible connection of such a "crossing," or "rite of passage," with the temple and its services shows that *raqi'a* also possesses a ritual function. This brings us back to van Gennep, whose concluding paragraph raises the question to what extent there may be found additional connections between *raqi'a* and ritual:

Finally, the series of human transitions has, among some peoples, been linked to the celestial passages, the revolutions of the planets, and the phases of the moon. It is indeed a cosmic conception that relates the stages of human existence to those of plant and animal life and, by a sort of pre-scientific divination, joins them to the great rhythms of the universe.²¹

²¹ *Rites of Passage*, p. 194.

Appendix: Biblical Hebrew Words Based on the Root *rq^c*

1. Verb *rq^c*: Qal Stem (Common Active)

a. "spread out"

- (1) Isa 42:5: "Thus says the EL (God), YHWH, creator of the heavens and the one who stretches them out, the **one spreading out** [$\sqrt{rq^c}$] the earth and the things emerging from it [its products]."
- (2) Isa 44:24: "Thus says YHWH, your Redeemer; I am YHWH who makes everything, who stretches out the heavens by myself, who **spreads out** [$\sqrt{rq^c}$] the earth with (only) myself [or: who (was) with me?]"
- (3) Psa 136:6: [Begin at vs. 1:] "Praise YHWH...who **spreads out** [$\sqrt{rq^c}$] the earth over the waters..."

b. "trample (enemies)"

- (4) 2 Sam 22:43: "And I crushed them like the dust of the earth, like dirt in the streets I pulverized them, I **trampled** [$\sqrt{rq^c}$] them."

c. "stamp with the feet"

- (5) Ezek 6:11: [God speaks to Ezekiel] "Thus says the Lord YHWH: 'Strike with your hand, and **stamp** [$\sqrt{rq^c}$] with your foot, and say: "Aha" (in regard to) all the evil abominations of the house of Israel...'"
- (6) Ezek 25:6: [God speaks to the Ammonites] "Thus says the Lord YHWH: 'Because of your clapping the hand and your **stamping** [$\sqrt{rq^c}$] with the foot, and (because) you rejoiced with all your disdain in (your) very being over the land of Israel...'"

2. Verb: *rq^c*: Piel Stem (Intensive Active)

a. "beat out; hammer out"

- (7) Exod 39:3: [Making of the ephod] "And they **hammered out** [$\sqrt{rq^c}$] sheets of gold..."

- (8) Num 17:4 [Engl. 16:39]: "And Eleazar the priest took the copper censers...and they **hammered** [$\sqrt{rq^c}$] them (into) plating for the altar."
- b. "overlay, cover (with leaf, foil, sheeting)"
- (9) Isa 40:19: "The idol: A craftsman cast it; and a smith **overlaid** [$\sqrt{rq^c}$] it with gold."
3. Verb: rq^c : Pual Stem (Intensive Passive)
- a. "be hammered out"
- (10) Jer 10:9: "Silver **hammered out** [$\sqrt{rq^c}$], brought from Tarshish, and gold from Uphaz"
4. Verb: rq^c : Hiphil Stem (Causative Active)
- a. "spread out"
- (11) Job 37:18: "Can you, with him, **spread out** [$\sqrt{rq^c}$] the (cloudy-)heavens, strong as a molten mirror?"
5. Noun: $riqqu^ca$ [with doubling of the middle root letter, as in Piel/Pual verbal forms].
- a. "something hammered, beaten flat"
- (12) Num 17:3 [Engl. 16:38] [cp. Num 17:4, (8) above]: "As for the censers of these men who sinned against (or: at the cost of) their (own) lives, let them be made into **hammered** [$\sqrt{rq^c}$] sheets *as* a plating for the altar."

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Additional Notes Relating to Ancient Israel and Modern Science

(Not included in original paper)

A. The "Great and Small Lights" of Genesis 1

It is interesting to note that the terms "great" and "small" referring to the "lights" or luminaries in Gen 1:16 hold true only in respect to relative luminosity and *absolute* size, but not apparent size from the point of view of an observer on earth. Even though we now know that the sun is also absolutely *very much larger* than the moon, ca. 400x larger in diameter, the moon is *very much closer* to the earth than the sun, interestingly enough ca. 400x closer, so the angle subtended by each to a human observer on earth is roughly equal at ca. 0.5°. The moon's subtended angle fluctuates more than that of the sun due to its closer distance to and greater eccentricity of orbit around the earth, as compared to the earth's distance from and eccentricity of orbit around the sun. The equal relative size of sun and moon as observed from earth is demonstrated by the fact that during some total solar eclipses, the moon more than covers the entire solar disk, whereas in others, the very edge of the sun remains visible as a thin ring (known as an annular eclipse). On average, they are for all practical purposes therefore equal in angle subtended, or relative size.

B. The "Science" of the Israelites

The Hebrew conception of *raqi'a* appears to be a single, solid, celestial component with the various heavenly luminaries embedded in it. If this view is correct, the question can be raised: "How then did the Israelites account for the variable motions of sun, moon, stars, and especially the planets, with respect to each other if they are all embedded in a single, solid framework?"

One answer to the question may simply be: the Hebrews weren't interested in pursuing the subject any further than a "first approximation." The important elements from *their perspective* were covered. Everything else was immaterial.

Although this is mere speculation, there may be an element of truth to idea that the ancient Israelites were less scientifically and mathematically minded than, say, the ancient Mesopotamians, Egyptians, or Greeks.

Israel, unlike Mesopotamia and Egypt, was not among the great political powers of the ancient world. Nor did Israel excel in architecture, sculpture, painting, and the minor arts. But its genius in religion, ethics, literature, and historiography gave it an importance out of all proportion to its small population and land.²²

A possible mathematical case in point concerns the number pi (p).

The Babylonians and the Egyptians knew more about p than its mere existence. They had also found its approximate value. By about 2,000 B.C., the Babylonians had arrived at the value $p = 3\frac{1}{8}$, [=3.125, or ca. 0.5% lower than the actual approximate value of 3.1416; G.M.] and the Egyptians at the value $p = 4(\frac{8}{9})^2$ [= 3.160, or ca. 0.6% higher than the actual approximate value; G.M.].

...in the Old Testament (I Kings vii.23, and 2 Chronicles iv.2)...the molten sea, we are told, is round; it measures 30 cubits round about (in circumference) and 10 cubits from brim to brim (in diameter); thus the biblical value of p is $30/10 = 3$ [= ca 5% lower than the actual approximate value; G.M.].²³

C. Thoughts on Modern Science

Modern science is fascinated with, and embroiled in, liminal issues. Current theoretical research on "superstring theory" is the attempt to find the *unified field theory*, or T.O.E. ("theory of everything") which seeks to bridge the huge and annoying "interstitial space" between quantum mechanics and general relativity, known as "the central problem" of modern physics. Now that we know that protons consist of two up-quarks and a down-quark, and a neutron consists of two down-quarks and an up-quark (and electrons are still just electrons), and now that we can

²² Gordon/Rendsburg, *The Bible and the Ancient Near East*, p. 17.

²³ Beckmann, *A History of p (pi)*, pp. 12-15.

postulate that the fundamental nature of these fundamental particles is "string-like" instead of "point-particle-like", tremendous progress is being made at bridging the theoretical and experimental gaps and finding universal laws that apply equally in the macro-universe, the micro-universe, and *all* the spaces in-between. Science doesn't like spaces with different sets of rules.²⁴

There is one boundary in the universe that seems completely impenetrable (called by one physicist "God's fence")—the speed of light. Nothing in the known universe can travel faster than the speed of light. As "objects" approach the speed of light, their "clocks" slow down. At the speed of light, time ceases to have meaning.

Thus light does not get old; a photon that emerged from the big bang is the same age today as it was then. There is no passage of time at light speed.²⁵

Reality becomes surreal at relativistic speeds. Black holes with their "event horizons" are also naturally occurring liminal spaces where current rules must bend. From there we go to anti-matter and inverse universes. What's science here? And what's just science-fiction? The lines are not always clear to the non-specialist; they aren't always clear to the specialists either. What is clear is that we live indeed, not only in an "elegant" universe, but a very strange one too.

Perhaps in thinking about how much we *still* don't know about the universe in which we live, we can come to appreciate, rather than look condescendingly on, the attempts of ancient cultures to grasp their universe.

²⁴ For an excellent, readable treatment of modern physics and superstring theory, see Brian Greene, *The Elegant Universe*, 1999.

²⁵ Greene, p. 51.