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FROM THE PYTHAGOREAN VOID TO CRESCAS' GOD AS THE PLACE OF THE WORLD

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In this paper I intend to contribute to identifying the sources of an important passage in *Or ha-Shem* (Light of the Lord), the chief work of the Jewish critic of medieval Aristotelianism, Hasdai Crescas (1340–1410/11). The passage in question is a somewhat enigmatic appendix to the second of four series of arguments, in which Crescas attempts to refute the Aristotelian thesis that an infinite corporeal magnitude is impossible (see *Physics* III,5).¹ The second series aims at refuting the claim that a ‘corporeal infinite magnitude’ (190) is impossible. In the appendix Crescas offers, among others, an interpretation of the famous rabbinic dictum, according to which God is ‘the place of the world’ (GenR 68:9 et al.). After arguing that place, correctly conceived, is void, Crescas points out that ‘many among the ancients’ identified a thing’s place with its form. Although this identification is incompatible with his ontology, he uses it to equate God metaphorically with the infinite void and hence with ‘the place of the world’, which—on account of the identification of place and form held by ‘many among the ancients’—constitutes the world’s form. Metaphorically, therefore, God can be described as an active infinite extension that produces, individuates, and determines the bodies of things in the same way as God literally, according to Crescas’ ontology, produces, individuates, and determines their forms.

My main goal in this paper is to show that Crescas’ reference to the doctrine held by ‘many among the ancients’ is most probably a reference to a Pythagorean conception of the void as summarized by Aristotle in *Physics* IV,6. Crescas presumably became familiar with

¹ Or I,2, ch. 1. References to Crescas’ text are to Harry A. Wolfson’s partial edition in Wolfson, *Crescas’ Critique of Aristotle* (Cambridge, MA 1929) [henceforth: *Crescas’ Critique*]. Wolfson discusses Crescas’ argument in his notes *ad locum* and in his introduction. For general background to the main concepts involved, see E. Grant, *Much Ado About Nothing: Theories of Space and Vacuum from the Middle Ages to the Scientific Revolution* (Cambridge 1981).

this conception through the Hebrew translation of Averroes' Long Commentary on the *Physics* (containing both Aristotle's text and Averroes' explanation), and from the paraphrase of Aristotle's account in Averroes' Middle Commentary on the *Physics*.² Clarifying Crescas' source will also help to better understand the reasons that led him to metaphorically identify God and place.

Let me begin by quoting the relevant parts of the passage in question:

Consequently it is in accordance with the truth, which bears witness to itself and agrees [with itself] in every respect, that the true place is the void [המקום האמתי הוא הפנוי]. That this should be the case can also be derived from the fact that place must be equal to the place of the whole and its parts. Hence the argument which [Aristotle] has framed [for the impossibility of an infinite corporeal magnitude] does not prove the thesis in question. This is what we intended to show in this second speculation.

Because this meaning of place was generally accepted, there were many among the ancients who held that the true place of a thing is its form [היו רואים כי מקום הדבר האמתי צורתו], because the form determines and individuates the thing as a whole and its parts [בשהיא תנבילהו ותיחדהו כולו] [והלקי].

Thus our rabbis, peace be upon them, used the term [place] metaphorically for the form and essence of a thing [צורת הדבר ועצמותו], as when they say: 'It is proved from its own place' [bShevu 7b]; 'From the place from which you come' [Mekh, Ki tissa' 1], that is to say: from the very thing itself [. . .].

For this reason, because God, may He be blessed, is the form of reality as a whole [הוא הצורה לכלל המציאות], having produced, individuated and determined it [כי הוא מחדשו ומיחדו ומנבילהו], He is metaphorically called Place, as in their frequent saying 'Blessed be the Place' [bAZ 40b]; [. . .] 'He is the Place of the World' [e.g. GenR 68:9]. This last metaphor is admirable, for as the dimensions of the void permeate through the dimensions of the body and its fullness, so His glory, blessed be He, is present in all parts of the world and the fullness thereof כאשר רחקי הפנוי נכנסים ברחקי הגשם ומלאו, כן כבודו יתברך בכל חלקי] [העולם ומלאו], as is said: 'Holy, holy, holy is the Lord of Hosts, the whole earth is full of His glory,' the meaning of which may be stated as follows: though God is holy and separated by a threefold holiness, alluding thereby to His separation from three worlds, still the whole

² For Crescas' knowledge of these texts, see Wolfson, *Crescas' Critique*, 8–9.

earth is full of His glory, which is an allusion to the principle of impregnation [יִסוֹד הַעֲבוֹר] which is among the principles of His glory. (198–203)

Crescas first identifies 'true place' and 'void' and then suggests that this understanding of place accounts for the fact that 'many among the ancients' take the 'true place of a thing' to be its form, i.e., identify the form of a thing with the void. Wolfson did not identify the 'ancients' to whom Crescas is referring. The most plausible assumption in my view is that he has Aristotle's account of the void's role in Pythagorean cosmology in mind.³ Wolfson missed this connection because he appears to have misunderstood Aristotle's account of the Pythagorean notion of the void:

In the *Physics* Aristotle enumerates two theories which were held by early philosophers with regard to a vacuum. First, the vacuum is inseparable from the corporeal objects of the world, it is everywhere dispersed throughout the pores of the bodies, thus breaking up the continuity of the world. Second, there is no vacuum within the world, the world itself being continuous, but there is a vacuum beyond the world. The first of these views is ascribed to the Atomists, the second to the Pythagoreans.⁴

On the basis of this description, Wolfson erroneously takes several statements of Crescas concerning the void outside the world to be references to the Pythagorean doctrine.⁵ In fact, Aristotle's account suggests a quite different conception of the Pythagorean void:

The Pythagoreans, too, held that void [κενόν] exists and that breath [πνεῦμα] and void enter from the infinite [τοῦ ἀπείρου] into the universe [or heaven: οὐρανῶ⁶] itself [αὐτῷ] which, as it were, inhales [ὥς ἀναπνέοντι]. The void determines [or separates: διορίζει] the natures

³ Note that also in other contexts, Crescas attributes Aristotle's account of the views of earlier philosophers generically to 'the ancients.' See, e.g., Proposition X, part I, 257 and Wolfson's notes 3–5 on this proposition, 569–570. Aristotle discusses the identification of place and form (εἶδος or μορφή) in *Physics* IV,2, and the identification of place and void in *Physics* IV,7. But he offers these as two different interpretations of place. Crescas' point is that 'the ancients' in question identify place *which they take to be the void* and form. He can thus not have the above-mentioned passages of Aristotle in mind. To the best of my knowledge, the only text available to Crescas that suggests such an identification is Aristotle's account of the Pythagorean notion of the void.

⁴ Wolfson, *Crescas' Critique* 54.

⁵ See 343f. n. 48; 400f. n. 7; 403 n. 11; 414 n. 24.

⁶ Simplicius has: κόσμος. Simplicius, *In Aristotelis Physicorum Libros Quattuor Priores Commentaria*, ed. H. Diels (Berlin 1882 = *CAG*, vol. IX) 651.

of things [τὰς φύσει] like a kind of separation and determination between things in a series [ὥς . . . χωρισμοῦ τινος τῶν ἐφεξῆς καὶ τῆς διορίσεως]. This occurs first in the case of numbers; for the void determines their natures. (*Physics* IV,4, 213b22ff.)

The passage contains some textual and conceptual difficulties, in particular with regard to the πνεῦμα that the universe is said to inhale with the void. Ross's edition of the *Physics* has αὐτὸ instead of αὐτῷ and πνεύματος instead of πνεῦμα in the main text, i.e., 'it [the void] enters into the universe from the infinite breath'.⁷ Simplicius, on the other hand, takes πνεῦμα to be a metaphor for the void that is related to the notion of inhalation: 'The void enters the universe, which, as it were, inhales or breathes it in like breath [ὥσπερ πνεῦμα], from that which surrounds it'.⁸ The Hebrew version made from the Arabic, which Crescas in all probability knew through Averroes' Long Commentary on the *Physics*, has 'infinite breath' as in Ross's text, but, like Simplicius, seems to take it as a metaphor for the 'void':

וכבר היתה סיעת פיתגוריש אומרת שהריקות נמצא ושהוא בהתנשמות יכנס לשמים כי העולם ימשכחו כמו מה שימשכחו כאשר יתנשם מן הרוח אשר אין לו תכלית והריקות היא אשר יבדיל בין השמים לפי שהריקות הוא הפרדת מה שבין הסמוכים והנבלתם. אמרו וזה תחלה נמצא במספרים לפי שהריקות אצלם הוא אשר הבדיל מבעיהם.

The Pythagoreans were claiming that the void exists and that it enters the heavens through breathing, for the universe draws it in like that which it would draw in when it breathes from the infinite breath. And the void is that which distinguishes the natures of things, for the void is a kind of separation between adjacent things and their determination. They claimed that this occurs first with regard to numbers, for the void, according to them, is that which separates their natures.⁹

Averroes explicitly states that 'breathing [נשום]' must be understood 'metaphorically [על צד ההשאלה]' and that 'infinite breath means void [הרוח אשר אין תכלית לו ירצה בו הריקות]'. In the Middle Commentary on the *Physics*, moreover, which Crescas knew as well, he does not

⁷ Aristotle's *Physics*, ed. W.D. Ross (Oxford 1936) 213b23–24.

⁸ Simplicius, *ibidem*.

⁹ MS Oxford Bodleian Library, Bodl. Or. 155 (1388 Catalogue Neubauer). On the Hebrew translation, see M. Steinschneider, *Die hebräischen Übersetzungen des Mittelalters und die Juden als Dolmetscher* (Berlin 1893) 122ff. [henceforth: *Die hebräischen Übersetzungen*].

mention the 'infinite breath' at all.¹⁰ It is thus plausible to assume that Crescas understood Aristotle in this passage as attributing a notion of 'infinite void' to the Pythagoreans. In any case, there is no doubt in my view that Crescas must have taken the Pythagoreans to be holding not only that the universe is surrounded by infinite void, but that the natures of the things making up the universe are separated and determined by the void which the universe 'inhales' as it were. The causal role of the void in separating and determining the nature of things is stressed by Averroes: according to the Pythagoreans, Averroes explains, the void 'is the cause of the separation of adjacent things and the cause of their determination [אצלם סבת הפרדת הסמוכים וסבת ההנבלה להם]'. If I am right that in his reference to 'many among the ancients' Crescas has primarily the Pythagoreans in mind, it would be this function that in his view led them to identify a thing's 'true place', i.e., the void, with the thing's form: for like the void, the form 'individuates' and 'determines' (or, as the Hebrew version of the *Physics* has it: 'separates'¹¹ and 'determines') things. True, Aristotle does not explicitly say that the Pythagoreans identify void and form and from a historical point of view the notions of matter and form are Aristotelian, not Pythagorean. But elsewhere he makes an attempt to interpret the Pythagorean principles in light of his own account of causes, proposing that in one sense the Pythagoreans take numbers to be the 'matter' of things.¹² In the passage under discussion it certainly is plausible to read Aristotle as implying that they take the void to be the form of things, in particular when he speaks of the things' 'natures', for the primary sense of 'nature', according to Aristotle, is the 'essential form [σὺσία]' of a natural thing, i.e., that through which it is what

¹⁰ MS Paris Bibliothèque Nationale 938. This is the Hebrew translation by Kalonymus ben Kalonymus which, according to Wolfson (*Crescas' Critique*, 9), is the one Crescas used. On the Hebrew translations, see Steinschneider, *Die hebräischen Übersetzungen*, 111–115. I have also consulted the Supercommentary on the *Intermediate Physics* by Levi ben Gershom (MS Oxford Bodleian Library, Mich. 488 [1389 Catalogue Neubauer]) and the one attributed to Moses Narboni (MS Paris Bibliothèque Nationale 967), which Crescas knew according to Wolfson (*Crescas' Critique*, 9f.). They were, however, not illuminating with respect to the passage in question.

¹¹ To 'individuate' and to 'separate' should presumably be understood as two descriptions of the same process: a thing is individuated by being separated from other things.

¹² *Metaphysics* I,6 986a15ff. In a second sense mentioned by Aristotle, they take them to be the principle of the 'modifications' and 'permanent states' of things.

it is.¹³ It is not possible to determine precisely how Crescas understood the role played by the void in Pythagorean cosmology. I will, however, venture a tentative summary of the basic idea in light of the extant accounts—in particular those of Aristotle and the Peripatetic tradition of which we can assume Crescas had a certain knowledge. I am, of course, aware that there is no scholarly consensus on the meaning of the doctrine in question. I intend, therefore, no more than to present a possible interpretation that is compatible with the reading I attribute to Crescas.¹⁴ Assuming the identity of numbers, geometric points, and atoms the Pythagoreans see the genesis of the universe as proceeding from the first number (1) that draws in (or ‘inhales’) from the infinite surrounding void and grows until it splits, thus giving rise to the second number (2). The latter is not only a number, but also two geometric points and two atoms, separated by an interval of void, which define a line, i.e., the first determined extension. The inhalation of more void causes a further split that gives rise to the third number (3) and geometrically to the first plane: the triangle. With the next number (4) the first solid comes to be: the tetrahedron. The features of the universe as a whole are assumed to follow from the continuation of this process. On this account, the fundamental components of the universe are thus void and number.¹⁵

The Pythagorean universe is, in fact, in some respects similar to that of Crescas. For after having eliminated Aristotle’s *materia prima*, Crescas retains as the substratum of a thing’s ‘specific form [צורה]’ the ‘corporeal form [צורה נשמית]’ as it was understood by Averroes.¹⁶ This corporeal form, according to Averroes, is nothing but indeterminate three-dimensionality or extension. Considered in

¹³ *Metaphysics* V,4 1015a13–15; cf. *De partibus animalium* I,1 641a25–28.

¹⁴ See in particular the collections of passages in H. Diels and W. Kranz, eds, *Die Fragmente der Vorsokratiker* (Zürich/Hildesheim 1989¹³) vol. 1, 448–462 and in G.S. Kirk and J.E. Raven, eds, *The Presocratic Philosophers* (Cambridge 1966⁶) ch. 9. For two recent interpretations of Pythagoras and the Pythagorean school, see Ch. Kahn, *Pythagoras and the Pythagoreans: A Brief History* (Indianapolis, IN 2001); Ch. Riedweg, *Pythagoras: His Life, Teaching, and Influence*, Eng. trans. (from the original German version published in 2002) S. Rendall (Ithaca, NY 2005).

¹⁵ Cf. the view attributed to Ekphantos in Aetios, according to which the two principles of ‘all things’ are ‘void’ and ‘indivisible bodies’ (DK 51 A 2).

¹⁶ See his critique of Maimonides’ tenth proposition, 270–273, and Wolfson’s notes *ad locum*, especially n. 19 (579–590) that traces the history of the concept of ‘corporeal form’. For Averroes’ view, see e.g. the Hebrew translation of A. Hyman, ed., *De Substantia Orbis* (Cambridge MA/Jerusalem 1986) ch. 1. Note that due to

itself it would thus not seem to be distinct from the void. If this is the case, the fundamental components of Crescas' universe turn out to be void and form. In contrast to the Pythagoreans, however, Crescas' void does not 'determine' and 'individuate' things and their parts in the strict sense. This is the function of the form. But the void as a thing's 'true place' does 'determine' and 'individuate' it spatially given that each thing has its particular place, which is different from the place of every other thing (and the same holds for parts of things). The Pythagoreans thus were led to their doctrine through a confusion of spatial and formal determination according to Crescas. But even though he rejects what he takes to be their identification of void and form, Crescas can still describe the void as a thing's form by way of metaphor.

We have seen one way of explicating how the void of the Pythagoreans 'determines and individuates the thing as a whole and its parts'—a function which explains for Crescas why they identify void and form. But even with respect to the metaphorical identification that Crescas adopts, he departs from the Pythagoreans on one important point: for him the active factor in the process is the infinite void, not the world 'inhaling' it as it were. This is the implication of the comparison of the infinite void to God: God 'is metaphorically called Place' because he 'produced, individuated and determined' the world. It is, of course, not the world that 'inhales' God. The void thus does not 'individuate' and 'determine' things as the consequence of a process of 'inhalation', but is itself conceived as the source of activity.

To sum up: according to Crescas, place, correctly understood, is void which he takes to be the reason why 'many among the ancients' identified a thing's place with its form. This doctrine of 'many among the ancients' is best explained as referring to the concept of the void in Pythagorean cosmology as summarized by Aristotle in *Physics* IV,6. According to the Pythagoreans, the universe 'inhales' void, which separates things and determines their natures. Crescas himself rejects the role attributed to the void by the Pythagoreans. They have, in his view, confused spatial and formal determination. He does, however, adopt their identification by way of metaphor, going so far as to

the elimination of prime matter the sublunar and superlunar realms for Crescas are no longer distinct with respect to matter.

metaphorically equate God and the infinite void. This in turn points to an additional difference between Crescas and the Pythagoreans: whereas for Crescas the infinite void actively individuates and determines things, for the Pythagoreans it is passive; individuation and determination occur because the void is ‘inhaled’ by the universe.