On Divine Omnipotence and its Limitations

By: YITZHAK GROSSMAN

Introduction

Divine omnipotence is an integral tenet of Jewish monotheism. In contrast to the ancient pagan religions whose gods were little more (and often much less) than glorified humans, possessed of the same corporeal, psychological, and conceptual limitations as humans, Judaism's innovation was its insistence on a transcendental G-d, fundamentally different from anything within the human sphere of experience. Omnipotence is one of the inextricably linked attributes that comprise this conception, along with incorporeality, oneness, and omniscience.

The American Heritage Dictionary defines omnipotence as "having unlimited or universal power, authority, or force; all-powerful." This essay explores the position of the medieval Jewish rationalists that a simplistic understanding of G-d's omnipotence in this sense is a substantial oversimplification; the concept requires careful and subtle qualification before it may be accurately applied to G-d. Additionally, we shall analyze some of the comments of the Rishonim in this area from the perspective of modern mathematics and science.

Maimonides writes:

לנמנע טבע קיים קיום עומד, אינו מפעולת פועל, אי אפשר השתנותו כלל, ומפני זה לא יתואר השם ביכולת עליו, ואין חולק על זה אחד מאנשי העיון כלל, ולא יסכל זה אלא מי שלא יבין המושכלות. (מורה הנבוכים ג:טו)!

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That which is impossible has a permanent and constant property ... and consequently we do not ascribe to G-d the power of doing what is impossible. No thinking man denies the truth of this maxim; none ignore it, but such as have no idea of logic.

R. Yedayah Hapenini² (a staunch admirer and follower of Maimonides) echoes him:

ומתועלותיה הנפלאים גם כן באמונתינו ובחזוק דתנו מה שהודיעתנו והיישירתנו להניח טבע קיים לקצת הנמנעות ביחוד מבין זולתם בקצת ענינים שהרחקתם הכרחית בתורתנו והם שרש ועקר שהכל תלוי בו והם כמו שיעשה האל כמוהו או שיגשים עצמו או שישנה בעצמו שום שנוי שאנחנו לא נאמין שהאל יתברך יתואר ביכלת על זה כמו שזכר הרב הגדול ז"ל. (תשובות הרשב"א א:תיח)

Also among the wonderful benefits [of philosophical study] for our faith and for the strengthening of our doctrine is that it informs us and guides us to declare a specific subset of impossibilities to be absolute, in certain areas where our Torah requires this, and this is a fundamental principle on which all depends. Examples of such impossibilities are G-d creating an entity like Himself, or assuming corporeal form, or undergoing any alteration; we do not believe that G-d can be described as possessing these abilities, as the great rabbi [Maimonides] has mentioned.³

All Hebrew citations from the *Guide* are from Ibn Tibbon's translation; English citations are from M. Friedlander's translation.

² Author of *Bechinos Olam*. Lived in Bezier, Provence. Also known as R. Yedayah Bedarsi. The citations in this essay are from his eloquent, magnificent *Letter of Apology* defending the study of philosophy and the rationalistic Judaism that flourished in fourteenth century Provence.

³ All translations other than those of Maimonides are my own and are not wholly precise.

Rashba⁴ writes:

ואצלי שני חלקים בנמנע. האחד, ההכרחי וישר מצד עצמו, להיות צלע המרובע גדול באלכסונו [צ"ל כאלכסונו או מאלכסונו] או מה שהיה שלא היה והרבה כיוצא בזה, וזה נמנע גמור מצד עצמו לא ישוער בו האפשרות. והשני, לא מצד עצמו אלא מצדנו, וממניעת החכמה מצד הנמשך בטבע, שלא מצינו סלע מוציא מים, והים יקרע לשעה וישוב לשעה, ושיעמדו השמש והירח לא יסובבו ולא יזוזו ממקומם, או ישוב השמש לאחורנית, והרבה כיוצא באלו, ותחיית המתים בכללם. ואמנם אין כל זה נמנע אצלינו אלא מצד מיעוט חכמת הנבראים כולם ולאות כחם לשנות המוטבע בחותם הטבע, אבל בחוק הבורא יתברך אינו נמנע אלא מחויב בחכמתו יתברך, שאין להתייחס לו כלום חסרון ולאות בכח חכמתו, שהוא וחכמתו אחד ולא ידענו חכמתו עד שנדע מהותו. (תשובות הרשב"א ד:רלד)

To me there are two types of impossibilities. The first, which is inherently necessary and logical, such as the side of a square equaling [or exceeding] its diagonal, or an event that has both occurred and not occurred and many other similar examples. These things are inherently, absolutely impossible, and not conceivably possible. The second, however, is not inherently impossible, but is only so from our perspective, due to our limited wisdom. We have not seen a rock exude water, or the sea temporarily split and subsequently return to its normal state, or the sun and the moon remain stationary and cease orbiting, or the sun regress in its path, and many other such things including the resuscitation of the dead. These things, however, are only impossible from our perspective due to the limited wisdom of all creatures and their impotence with respect to altering the natural order, but for G-d they are not impossible. He is indeed certainly able to do such things,

⁴ Rashba was certainly not a rationalist; he was, after all, the most prominent opponent of secular study in the great controversy of the early fourteenth century. Indeed, the thrust of the cited responsum is a rejection of the philosophical assumptions of the questioner concerning the nature of prophecy (an issue which we shall discuss later in this essay). Rashba was, however, well versed in contemporary philosophical thought, as is evident from our citation as well as from other comments of his (his *Commentary on Aggadah* in particular).

for we may not ascribe any deficiency or lassitude to His strength and wisdom, since He and His wisdom are one and we cannot understand His wisdom until we understand His essence.

Thus, these *Rishonim* clearly state that G-d can do those things, and only those things, which are "inherently possible" in some appropriate sense. It is therefore important to clarify what sorts of "events" are considered "inherently impossible" in an objective sense, such that even an omnipotent G-d cannot be said to be able to effect them.

Three general categories of impossibilities are discussed by the *Rishonim*: contraventions of logic, mathematics, and philosophy. A word of caution is in order here. This classification is from a modern perspective; in the medieval mind there was considerable blurring of the lines of demarcation between what we now consider to be logic and mathematics, mathematics and physics, physics and philosophy, and philosophy and theology. Nevertheless, to the great thinkers even of eight centuries ago these basic categories were distinguishable, and it is therefore meaningful, even in such a context, to engage in such categorization.

1. Logical Impossibilities

For medieval thinkers logical impossibilities are violations of the rules of logic. Maimonides' example is (ibid.):

והמשל בו התקבץ שני ההפכים ברגע אחד בנושא אחד ... כל זה מכת הנמנע אצל כל אחד מאנשי העיון.

All philosophers consider that is impossible for one substratum to have at the same moment two opposite properties.

R. Yedayah HaPenini elaborates:

Many modern thinkers, most famously Gottlob Frege and Bertrand Russell, have attempted to show that mathematics is just logic (and set theory,) thus blurring the lines between the two.

והיותר מפורסם ממנו זה הנמנע תחלה לקבוץ שני ההפכים בנושא אחד בזמן אחד מצד אחד וכל שכן שני הסותרים שהענין בם יותר מבואר הנמנע מההפכים והם החיוב והשלילה משל בסותרים כאמרנו בראובן שהוא רוכב ובלתי רוכב יחד בנקודה אחת נרמזת מהזמן או כותב ולא כותב יחד כי הסותרים בשום פנים לא יתקבצו ועל כן יחלקו האמת והשקר תמיד והמשל בהפכים כאמרנו בהמצאת מספר שיהיה זוג ונפרד יחד או כאמרנו בהמצאת זמן עבר ועתיד יחד מצד אחד ואיך כי העבר כאמרנו בהמצאת זמן עבר ועתיד יחד מצד אחד ואיך כי העבר הוא שלא נשאר חלק ממנו שלא נפסד והעתיד הוא שלא התחיל חלק ממנו להתחדש ואיך ימצא יום שיקרא אתמול ומחר יחד שלא על שתי הבחינות זה בודאי מאמר סותר עצמו והוא מבואר המניעה שלא תשתנה.

⁶ *Ibid.* We can make several observations about R. Yedayah's assertions from the modern worldview:

¹⁾ R. Yedayah's basic claim is that an assertion about the physical world can not be both true and untrue simultaneously. Although quantum theory (with empirical confirmation) maintains that the state of a system can be (and generally is) a linear combination of mutually contradictory "pure states", this doesn't violate propositional logic. We aren't claiming that a particle is both in a state of spin up and not in a state of spin up, for example; we claim rather that neither of the above is true, and that the reality of the system consists only of the superposition of both states. However, while there is technically no logical inconsistency, from a practical viewpoint this does somewhat resemble the אום בולח מהומן שהוא רוכב ובלחי רוכב יחד בנקודה אחת נרמזת מהומן archetypal example of a logical impossibility given by R. Yedayah.

²⁾ R. Yedayah rejects the possibility of characterizing a given moment in time as being both in the past and in the future as absurd and paradoxical, a clear violation of logic. The theory of General Relativity, however, which maintains that space-time is curved, throws some doubt upon the obviousness of the above. In fact, the mathematician Kurt Godel famously constructed a solution to the equations of General Relativity that contains closed (circular) time-like loops; in such loops *every* point is both prior to and subsequent to *every* other point (including, of course, itself)! [This possibility is sometimes referred to as "Godelian time travel."] It is unclear, however, whether our actual universe contains such closed time-like loops.

³⁾ R. Yedayah implies that the existence of a number that is both odd and even is a logical impossibility; one might argue that it is merely a mathematical impossibility. If we define "even" as "divisible by two"

The most widely known instance of this type of impossibility is that of an entity having two opposite properties simultaneously, and a fortiori two contradictory ones, since contradictory properties, i.e. a property and its negation, are even more obviously incapable of simultaneous coexistence. example An involving contradictory properties is the assertion that Reuven is riding and that he is not riding at the same point in time, or that he is writing and not writing, since under no circumstance may contradictory properties coexist, and that is why truth and falsehood are always nonoverlapping. An example involving opposite properties is the assertion of the existence of a number that is both even and odd, or the assertion of the existence of a point in time that is both in the past and in the future, which cannot be since the past is that portion of time which has totally elapsed, and the future is that portion of time of which none has yet occurred, so there cannot be a day which can be called both "yesterday" and "tomorrow" in the same sense; this is certainly an oxymoron and clearly an impossibility that is unalterable.

2. Mathematical Impossibilities

Examples of mathematical impossibilities offered by *Rishonim* include various geometrical constructions with incompatible properties, such as a square whose side equals or exceeds its diagonal, or a triangle with an angular total other than 180 degrees.

and "odd" as "not divisible by two," than we have a logical impossibility; if, however, we define "odd" as "divisible by two leaving a remainder," than it is more of a mathematical impossibility. Cf. note 5.

Maimonides, ibid and Rashba, ibid.

⁸ Gersonides, *Commentary on the Bible*, Joshua, end of Chapter 4. As far as I know, Gersonides' position on the absolute inviolability of any impossibilities isn't explicit, and in his Commentary at least part of the discussion concerns the sort of miracles that G-d merely doesn't do although He clearly can. Nevertheless, I believe that he too considers the contravention of certain impossibilities to be beyond even G-d's power, as he strongly implies in Wars of the Lord Book VI, Section 2, Chapter 12.

Until Lobachevskian and Riemannian geometries were accepted in the 18th century to be equally as legitimate from a mathematical perspective as the standard Euclidean system, any deviation from Euclid's axioms was considered to be inherently wrong. Today, Euclid's geometry isn't considered to have any *a priori* superiority over its non-Euclidean counterparts. Moreover, a consequence of Einstein's General Theory of Relativity is that the *actual* geometry of the universe isn't Euclidean, but rather Riemannian! It is therefore untrue that G-d cannot create triangles with angular totals other than 180 degrees (He did and he does!); the most that can be said is that G-d cannot do so *within a system* in which Euclid's parallel postulate holds.

In the more general case, in the post Cantor-Godel-Turing mathematical world, a philosophical schism exists between the so-called mathematical "formalists" and "Platonists" about the essential meaning of mathematics. The former consider mathematics to be simply the study of the consequences (i.e., formally derivable propositions) of various systems of axioms and rules of inference, without regard to questions of "meaning" and "truth", while the latter understand it to be an endeavor to determine objective, preexisting truth considered to have an existence independent of the mathematician and even of the entire physical world in general. To a Platonist, then, there exists an objective mathematical truth that we may consider unalterable even by G-d, while a formalists' stance would be somewhat less clear.

At least locally, and even globally, it is not precisely Euclidean, as far as I understand.

Gersonides (*Wars ibid* Chapter 6) states that unlike the properties of a physical construction, which always have some purpose (in the technical Aristotelian sense) since the construction is the product of some agent, the properties of a mathematical construction have none; it is meaningless to ask why the angles of a triangle always equal 180 degrees, since no one has made it so, it just inherently is that way. This has a whiff of mathematical Platonism.

3. Philosophical Impossibilities

Philosophical impossibilities are those based on assumptions about the fundamental rules governing the universe. The Rishonim mention theological impossibilities such as:

> היות השם ממציא כמותו, או משיב עצמו להעדר, או שיתגשם, או שישתנה, כל זה מכת הנמנע. (מורה הנבוכים ג:טו)

> G-d creating an entity like Himself, or nullifying His existence, or assuming corporeal form, or undergoing any alteration – all this is impossible.

and

כאמרנו באל שיחלק כמותו הנכבד או שיגשים עצמו או שישנה עצמו בשום שינוי או שיברא כמותו מכל צד או דומה לו בשום דבר שיאמר על שניהם באמת שלא על דרך השתוף הגמור שאלו הענינים החמשה לא נאמין בשום פנים שיתואר האל ביכולת על אחד מהם.¹¹

The assertion of G-d that He can divide Himself, or assume corporeal form, or undergo any alteration, or create a being totally like Himself, or similar to Himself in any way such that the similarity is genuine rather than totally homonymical¹² – we absolutely do not believe that G-d can be described as able to do any of these five things.

The existence of non-theological philosophical impossibilities (those involving fundamental assumptions about the universe but not directly related to G-d) is less clear. Rashba lists none. Maimonides mentions a position that creation *ex nihilo* is impossible even for

¹¹ R. Yedayah HaPenini ibid.

[&]quot;homonymical" is a rather clumsy neologism. R. Yedayah alludes to the subtle and profound Maimonidean doctrine of negative attributes; see *Guide* Part I Chapter 53 – 59 and Part III Chapter 20. Incidentally, Gersonides (*Wars* Book III Chapter 3) strongly disputes Maimonides' position.

Whether creation *ex nihilo* is consistent with modern physics is an interesting question. On the one hand, the law of conservation of

G-d, and although he disagrees, he considers the view philosophically legitimate.¹⁴ Gersonides believed that violations of gravity are contradictory to the essential nature of matter, and he therefore constructed elaborate explanations of the splitting of the Yam Suf¹⁵ and the Yarden.¹⁶ While discussing the latter, he compares G-d's inability¹⁷ to suspend matter without physical support to His inability to construct triangles with improper angular totals.¹⁸

matter and energy states that the total quantity of matter plus energy remains constant, implying that something cannot emerge from nothing; on the other hand, quantum theory says that particles do randomly appear (at least temporarily) out of nothing, and there is indeed some speculation that our entire universe could be just such a quantum fluctuation. I am not sufficiently familiar with quantum theory to discuss the matter further. In any case, modern science only discusses the universe as it is and does not presume to dictate to a transcendent G-d what He can and cannot do, as we shall argue later in this essay.

¹⁴ Guide Part II Chapter 13:

הדעת השני, הוא דעת כל מי ששמענו ענינו וראינו דבריו מן הפילוסופים, וזה שהם אומרים כי מן השקר שימציא השם דבר לא מדבר, ואי אפשר גם כן אצלם שיפסיד דבר אל לא דבר, ר"ל שאי אפשר שיתהוה נמצא אחד בעל חומר וצורה מהעדר החמר ההוא העדר גמור, ולא יפסד אל העדר החמר ההוא העדר גמור, ותאר השם אצלם בשהוא יכול על זה, כתוארו בשהוא יכול לקבץ בין שני ההפכים בעתה אחת בנושא אחד, או יברא כמותו יתעלה, או יתגשם, או יברא מרובע קטרו שוה לצלעו ומה שידומה לזה מן הנמנעות, והמובן מדבריהם שהם אומרים כמו שאין ליאות בחקו להיותו בלתי ממציא הנמנעות, כי לנמנע טבע קיים אינו מפעולת פועל, ולזה אי אפשר לשנותו, כן אין ליאות בחקו בשלא יכול להמציא דבר מלא דבר, שזה מכת הנמנעות כלם, ולזה יאמינו שיש חומר אחד נמצא קדמון כקדמות האלוה, לא ימצא הוא זולת החמר ולא החמר ימצא זולתו, ולא יאמינו שהחמר כמעלתו יתעלה במציאות, אבל הוא סבת מציאותו, והוא לו על דרך משל כחמר ליוצר או הברזל לנפח, והוא אשר יברא בו מה שירצה, פעם יצייר ממנו שמים וארץ, ופעם יצייר ממנו זולת זה ... ואפלטון גם כן זו היא האמנתו.

Incidentally, Gersonides (Wars, ibid, chapter 17) actually accepts this position.

¹⁵ Commentary on the Bible, Exodus, Chapter 14.

¹⁶ Commentary on the Bible, Joshua, end of Chapter 4.

See footnote 9.

During the early 14th century controversy in Spain, France, and Provence over the propriety and legitimacy of secular study, Rashba (see *Minhas Kenaos* letters 14 – 17) strongly opposed one Levi for his philosophical writing and teaching, and apparently suspected him of being an insidious, albeit subtle, heretic. In a later letter (42), Rashba justifies his stance as follows:

Another example of a non-theological¹⁹ philosophical impossibility may be found in the struggles of various medieval thinkers with perceived difficulties with the narrative of *Matan Torah*. Gersonides asserts that prophecy is absolutely impossible for the improperly prepared individual, and therefore concludes that the masses didn't experience prophetic vision, but rather ordinary, sensory perception of a (divinely generated, miraculous) acoustic phenomenon.²⁰ Maimonides' (Guide, 2:33) position is extremely unclear. Regarding prophecy in general, though, he strongly implies that even G-d cannot grant it to the unqualified individual.²¹ Rashba

גם החכם הנכבד ר' שמואל נושא הצנה לפניו, ואיש שלומו, וטוען הכל במקומו, אמר שמאמין ספורים, כי לא מצא לו בכל אשר כתב בחבורים, רק דבר אחד יחידי, והוא שכתב כי מה שאמרו חז"ל: מ"ם וסמ"ך בנס היו עומדים, שזה אינו אפשר, אלא מעט שכתב כי מה שמעמידתם, ואם כן כתב, הרואה אתה שזה חטא יחידי, ויקרא קהלה לכל הקהלות כי מה השאיר אחרי זאת ברכה, לא במופתים שאין הטבע גוזר ולא בחדוש העולם, רק בדעת ארסטו וחבריו, ולא הניח בכל התורה אפילו קב חומטיו

Given that nothing else objectionable was found among his writings, it appears quite probable that he did believe in miracles in general, and simply had Gersonides' opposition to "gravitic violations." After all, if one rejects the miraculous, one would necessarily reject a great deal of both the Written Torah as well as the Oral Torah, as the Rashba himself points out, so why would Levi have singled out this particular, relatively obscure, *midrashic* comment for rationalization, as opposed to, say, the splitting of the Red Sea or the Ten Plagues! Incidentally, modern scholarship has identified Levi with Levi ben Avraham ben Haim, author of Livyas Hen; see for example A. Geiger, החלוץ, מחברת 12 שניה, "מאמר על ר' לוי בר' אברהם בר' חיים וקצת מבני דורו" עמוד 2. See also A. S. Halkin "Why was Levi ben Hayyim Hounded?" in Proceedings of the American Academy of Jewish Research, 34 (1966), pp. 65-76. Livyas Hen has never been published in its entirety, and the extant manuscripts are incomplete. Several fragments have been published, though, most recently the Maaseh Bereishis section by Howard (Haim) Kreisel in 2004.

While the modern reader may balk at the characterization of prophecy as non-theological, one must recall that to the medieval rationalists it was a purely scientific phenomenon, consequent to the nature of the soul and various other incorporeal entities (c.f. *Wars of the Lord* and *Guide to the Perplexed*), and as such did not necessarily directly involve G-d.

²⁰ Commentary on the Bible, Exodus, chapter 19.

²¹ *Ibid*, chapter 32. He first cites the opinion of the philosophers,

(ibid) also appears to allude to such a position by his careful enunciation of his opinion that the granting of prophecy to the unfit at Sinai was no different from any other miracle performed by G-d. This may also have been the position of R. Shmuel Ha-Salmi,²² the correspondent to whom the Rashba is replying.

Perhaps the most important implication of the assumption of G-d's inability to do the inherently impossible is its contribution toward the resolution of the problem of theodicy. We can argue that

והדעת השני דעת הפילוסופים והוא שהנבואה שלמות אחד בטבע האדם, והשלמות ההוא לא יגיע לאיש מבני אדם אלא אחר למוד יוציא מה שבכח המין לפעל, אם לא ימנע מזה מונע מזגי או סבה אחת מחוץ, כמשפט כל שלמות שאפשר מציאותו במין אחד, כי לא יתכן מציאות השלימות ההוא עד תכליתו וסופו בכל איש מאישי המין ההוא אבל באיש אחד, ואי אפשר מבלתי זה בהכרח, ואם היה השלימות ההוא ממה שיצטרך בהגעתו למוציא, אי אפשר מבלתי מוציא, ולפי זה הדעת אי אפשר שינבא סכל, ולא יהיה האדם מלין בלתי נביא ומשכים נביא כמו שימצא מציאה, אבל הענין כן, והוא שהאיש המעולה השלם בשכליותיו ובמדותיו, כשיהיה המדמה על מה שאפשר להיות מן השלימות, ויזמין עצמו ההזמנה ההיא אשר תשמענה, הוא יתנבא בהכרח, שזה השלימות הוא לנו בטבע, ולא יתכן לפי זה הדעת שיהיה איש ראוי לנבואה ויכין עצמו לזה ולא יתנבא. כמו שאי אפשר שיזון איש בריא המזג במזון טוב ולא יולד מן המזון ההוא דם טוב ומה שדומה לזה .

He then states his own position:

והדעת השלישי והוא דעת תורתינו ויסוד דתינו הוא כמו זה הדעת הפילוסופי בעצמו, אלא בדבר אחד, וזה שאנחנו נאמין שהראוי לנבואה המכין עצמו לה, אפשר שלא ינבא וזה ברצון אלהי, וזה אצלי הוא כדמות הנפלאות כלם ונמשך כמנהגם, שהענין הטבעי שכל מי שהוא ראוי לפי בריאתו ויתלמד לפי גדולו ולמודו שיתנבא, והנמנע מזה אמנם הוא כמי שנמנע מהניע ידו כירבעם, או נמנע הראות כמחנה מלך ארם בענין אלישע ... אבל הפתיים מעמי הארץ אי אפשר זה אצלינו, ר"ל שינבא אחד מהם אלא כאפשרות הנבא חמור או צפרדע, זה יסודנו, שאי אפשר מבלתי ההתלמדות והשלמות, ואז יהיה האפשרות הנתלת בו גזרת השם יתברך.

Maimonides is differing only by saying that since he, unlike the philosophers, believes G-d to be supernaturally capable, He may therefore prevent a suitable individual from experiencing prophecy, while adding no such qualifying clause asserting a Divine ability to grant it to an unsuitable one, and indeed reiterating that it is utterly impossible for the unqualified to prophesy.

Incidentally, R. Shmuel Ha-Salmi was apparently a friend of the Rashba, who held him in some regard. He had originally been the patron of the controversial Levi (see footnote 18) until he deferred to the Rashba's warnings about the potentially pernicious influence of Levi and heeded his injunction to disassociate himself from him. See Minhas Kenaos loc. cit.

almost any attempt to justify the existence of evil ultimately involves the idea that its existence is, for one reason or another, necessary and unavoidable. Such claims directly imply that even G-d cannot do impossible things. For example, Ibn Ezra writes:

לא יעשה ה' אלהים דבר כי אם טוב כי הכל לעולם הוא טוב, וכן כתוב וירא אלהים את כל אשר עשה והנה טוב מאד, ואם היה שם רע היה בקצהו, כי בעבור רע מעט אין בדרך החכמה העליונה למנוע טוב רב, ושורש הרע מחסרון המקבל.²³

The Lord G-d does nothing but good, for the totality is always good, and so it says "And the Lord saw everything that He had done and behold it was very good", and if there was any evil, it was only a minority, since the supernal wisdom does not consider a minimal amount of evil a reason to withhold much good, and the root of evil is the deficiency of the recipient.

i.e., the evil included in the world's creation did not justify forgoing the good produced thereby. This argument requires that the option of creating an absolutely good universe be unavailable to G-d. As Liebniz said, "Our world is the best of all *possible* worlds," and we assume additionally that G-d can't create *impossible* worlds!

Modern Science

Modern science has nothing to say about G-d; it is therefore futile to consider its position on inviolable theological impossibilities. In a broader sense, science as understood today is the study of the natural order, while G-d is ontologically prior to that order, so science is not therefore relevant to the theological and philosophical issues raised by the Rishonim. While modern science can indeed refute the categorical denial of the possibility of certain philosophical or physical constructions by producing counterexamples, as we have suggested above, it can certainly not dictate to a transcendental G-d what He can and cannot do.

The Rishonim who declared the existence of various physical and philosophical invariants were operating within the pre-modern

²³ Introduction to his commentary on Ecclesiastes.

scientific worldview of the Greeks, which ascribed tremendous power to reason, philosophy and aesthetics to dictate to the world what it must be like. Modern science, however, even while retaining a (mysteriously justified) partiality toward (mathematical and conceptual) beauty as a guide to truth, places an extremely heavy emphasis on empirical evidence, and tries to avoid preconceptions of how things must be. An archetypal example of this paradigm shift is the displacement of the Greek dogma that all celestial motion is circular (since a circle is the perfect form) by the modern understanding that orbits are generally elliptical, as *observed* by Kepler. Additionally, the weird and wonderful concepts of the great physical theories (quantum and relativity) of the twentieth century are so

profoundly counterintuitive that any modern thinker should be extremely reluctant to make dogmatic assertions curtailing the power of G-d; we now know that, to paraphrase the Bard, "There are more things on Heaven and Earth than are dreamt of in our philosophy."

Conclusion

In summary, the great medieval thinkers were well aware of the logical difficulties entailed by the acceptance of the naive, unrestricted postulate "G-d can do anything"²⁴ and adopted instead the weaker but more sophisticated assumption that "G-d can do anything *inherently possible*." But as Maimonides himself explains, this does not imply any deficiency in G-d's perfection:

This is similar to Bertrand Russell's comment to Gottlob Frege that a set-theoretical system containing the seemingly intuitive and powerful axiom of abstraction ("for any conceivable property, there exists the set of those, and only those, entities possessing the stated property") is perforce inconsistent, which may be seen by considering the set of all objects possessing the property of not containing themselves as elements. In formal set theory (e.g. Zermelo-Fraenkel) we need to replace the axiom of abstraction by a still powerful, but weaker and therefore consistent, system of axioms. In the theological case, the replacement of "G-d can do anything" by "G-d can do anything inherently possible" leaves the precise definition of "inherently possible" unspecified.

שאין ליאות בחקו להיותו בלתי ממציא הנמנעות, כי לנמנע טבע קיים אינו מפעולת פועל, ולזה אי אפשר לשנותו. (מורה הנבוכים ב:יג)

... it is no defect in the Supreme Being that He does not produce impossibilities...

In other words, it is no imperfection of G-d that he cannot do that which inherently cannot be done!