



KOVETZ

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מוקדש

לכ"ק אדמו"ר גשיא דורנו

יה"ר שיראה נחת-רוח רב מבניו-התמימים בפרט

ומשלוחיו, חסידיו, וכלל ישראל בכלל

ונזכה לגאולה האמיתית והשלימה

תיכף ומיד ממש



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לאורך ימים ושנים טובות



נדפס ע"י ולזכות
הורי הכלה שיחיו

Foreword

With joy and gratitude to Hashem, we are pleased to present the next edition of the Kovetz “Heoros Hatmimim V’anash”, issue 2 (143), a scholarly journal with original insights in all areas of Torah, Nigleh and Chassidus, Halacha and the Rebbe’s Torah, put together by the Shluchim to Yeshivah Gedolah, Melbourne.

The Kovetz is being printed in conjunction with Chof Beis Shevat, The 28th Yahrtzeit of Rebbetzin Chaya Mushka, daughter of the Frierdiker Rebbe and wife of the Rebbe.

In the spirit of this year (5776) being a Hakhel Year, we have published two letters of the Rebbe pertaining to Hakhel, which also stress on its application in Chinuch, Jewish education, as this year marks 40 years since 5736, which the Rebbe labelled as “Shnas Hachinuch – the year of Jewish education”.

In the Sicha of Chof Beis Shevat 5752, the Rebbe stated that the numerical value of Chof Beis is 22, the same as the Hebrew word “B’cha”, used in the verse “B’cha Y’vareich Yisroel”, “through you shall Israel bless”. it is a blessed day, and all of Bnei Yisroel are blessed in all areas with it and through it. May we merit the fulfillment the ultimate Bracha, the true and complete redemption of all of Bnei Yisroel from Golus, with Moshiach Tzidkeinu leading us all to Eretz Yisroel, to the Beis Hamikdash Hashlishi, speedily in our days, now!

The Editors

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**The next issue of
the Kovetz Heoros
will iy”h be published
in honour of Purim.**

**Please submit Heoros no later than
Thursday, 7 Adar II**

Dvar Malchus

Lessons from Hakhel (II)

By the Grace of G-d

Erev Shabbos-Kodesh, 18 Elul

Sedra: “Come into the land”

Haftorah: “Arise, shine, for your
light is come”

“The Seventh Year, a Shabbos unto G-d,”

5740. [August 30, 1980] Brooklyn, N.Y.

To The Sons and Daughters of our
People Israel, Everywhere,
G-d bless you all,

Heartfelt Shalom and Blessing:

As the year 5740 draws to its conclusion, and in these last days of preparation for the New Year – may it bring goodness and blessing to us and all our Jewish people, it is fitting to reflect on a point which, though mentioned on previous occasions, is particularly timely and relevant now; relevant also in terms of action, which is the essential thing.

We are referring to the fact that the outgoing year is a year of *Shemittah*, and the incoming year is a year of *Hakhel*.

The Mitzvah of *Hakhel*, as ordained in the Torah, is that at the end of every seven years, immediately after the year of *Shemittah*, when Jews make their pilgrimage to the Beis Hamikdash, during the festival of Sukkos, all Jews had to be gathered (*Hakhel*) – the men, and the women, and the

children, even babies, and the king read to them sections from the Torah, selected for their content to stimulate Jews in the observance of Mitzvos and strengthen them in their faith and in Yiddishkeit; and it made a profound impression on them, as if they heard it from G-d Himself.

One of the reasons why the mitzvah of *Hakhel* has been reserved for this particular time is the following: Inasmuch as the year of *Shemittah* is a “Shabbos unto G-d,” when the time that was released from work in the field and orchard (the principal occupation in those days) was dedicated to increased Torah study, and to prayer and Mitzvos, in the fullest measure, it was the proper and fitting preparation to make their pilgrimage, all as *one nation*, and to make the people most receptive to the Torah reading, “as if they heard it from G-d,” so that it evoked in them a profound soulful experience, as when the Torah was given at Sinai; and the impression was so deeply engraved upon their hearts and minds that it was subsequently reflected in the everyday life throughout all the years ahead.

Although the Mitzvah of *Hakhel*, in its concrete and plain form, is connected with the time of the Beis Hamikdash, there is the well-known principle that all matters that are connected with the Beis Hamikdash, such as sacrifices and the like, are in their *spiritual* content relevant at all times. This is why the daily prayers, which have been enacted in the place of the sacrifices, substitute for them. A Jew prays with all his heart, offers himself completely in submission to his Creator, and is ready to sacrifice the best of his possessions and his most passionate interests (the “fat and the blood”) to the will of G-d – and it is acceptable to G-d as a “burnt offering” in the Beis Hamikdash. Indeed, also during the times when Jews had a central Sanctuary and Mikdosh and actually offered sacrifices there, it was the Jewish heart that He desired most, in accordance with His imperative, request, and promise: “Let them make Me a Sanctuary, and I will dwell *within them*” – in their innermost Jewish hearts.

The same is true of *Shemittah*. For although the commandment to work the soil for six years and rest during the seventh year is confined to the Land of Israel (where the soil, too, is sacred) and not anywhere else, yet the spiritual content of *Shemittah* as a “Shabbos unto G-d,” in the sense of the *holiness* of Shabbos, is enduring and relevant everywhere and at all times, and is bound up with the holiness of the “Holy Nation”; and this holiness transcends the limitations of time and space.

In light of the above, and since we are at the threshold of the year of *Hakhel*, it behooves every one of us to reflect earnestly on the content and purpose of this Mitzvah, which is, as the Torah declares: “. . . in order that they may hear, and that they may learn, and fear G-d, your G-d, and observe to do all the words of this Torah; and that their children, who know not (as yet), should hear and learn to fear G-d, your G-d.”

*

It is also obvious how strongly the Mitzvah of *Hakhel* emphasizes the Torah-education of our children. It follows that also those who are grown in years but still “children” in Yiddishkeit; all those “who know not,” who, for one reason or another, did not get the proper Jewish education; and even those who belong to the category of “one who knows not to ask,” namely, those who do not know, and do not feel, that they miss something and should ask and seek help – these also must be assembled to let them hear and learn what Torah is, what a Mitzvah is, in a manner of learning that would imbue them with fear of G-d, and, most importantly, that they should “observe and do all the words of *this Torah*,” the Torah from Sinai that shall never be changed – all of the above with such impact, “as if they heard it from G-d Himself.”

*

May G-d grant that everyone, man, woman and child in the midst of all our people should act in all the above mentioned matters, to strengthen,

deepen, and disseminate Yiddishkeit in the everyday life, both in themselves and their families as well as in their surroundings, in the fullest measure, and this will bring still more blessings with the *Ksiva Vachasima Tova* in all respects, materially and spiritually.

And all Jews – the men, and the women, and the young children – should very soon indeed merit the true and complete *Geulah* through our righteous Moshiach, through realizing and acting accordingly and from now on while still in Golus: “We are Your people and sheep of Your pasture, we will thank You for ever; we will tell Your praise to generation and generation.”

With esteem and blessing for a
Kesimo vachasimo toivo for a
Good and Sweet Year, and for
Hatzlocho in all above,

Menachem Schneerson

* * *

By the Grace of G-d
Chol-hamo’ed Sukkos. Sedra: Brochoh, Year: Hakhel
5741. Brooklyn, N.Y.

To All Jewish Children of
pre-Bar/Bas Mitzvah Age
G-d bless you all!

Greeting and Blessing:

You surely know that we are now in a special year, called the year of *Hakhel* (Year of Assembly). During the time when the Beis Hamikdash in Jerusalem was in existence, it was in this year – and precisely in these

(first) days of Chol Hamoed Sukkos – that the special Mitzvah of *Hakhel* was carried out: All Jews, men, women, and children, even the very young ones, were assembled in the Beis Hamikdash, where the King read before them portions from the Torah, and everybody listened very attentively, and learned to keep and do all that is written in the Torah throughout their entire life.

You surely also know that the Torah requires us, all Jews, to observe the anniversaries of important happenings in the history of our Jewish people; and to think deeply about these events, and to relive them as though we were there in person, in order to learn from them the proper lessons and to apply them in our personal lives, in our daily life *here* and *now*.

For example: When our very first festival, Pesach – on the 15th of Nissan – comes around, the uppermost thought in our mind is how G-d took us out from the Golus and slavery of Egypt, and made us free to serve Him and fulfill His Mitzvos.

Similarly, when the days of *Hakhel* come around (once in seven years), every one of us, including the very small children, must become deeply mindful that our homes and every Jewish home, also the Jewish school that houses the children (and their classmates), should be pure and holy, like being in the Beis Hamikdash; and that in every Jew, young and old, there is a “king” that rules and directs his daily activities, this being our *Emunah* in G-d, with which we begin our everyday life, as all of us, including the tiny tots, say immediately upon rising in the morning: *Modeh ani* – “I give thanks to You, living and eternal *King*.” We must listen attentively, with obedience and devotion, to this “king” in us, in order to make sure that everything we do is in keeping with what is written in His Torah.

Everyone should also be involved in *Hakhel*: Starting now and continuing through the year – on suitable occasions, and particularly on Shabbos – to get

together for the purpose of learning a portion of Torah or a Torah subject, and encouraging each other in the doing of Mitzvos all the better.

In order that all this should be with still greater Hatzlocho, it would be a good idea for those who can participate more often in such gatherings, to form a *kohol*, a permanent group, or unit, under the same name everywhere “Tzivos Hashem” “G-d’s Army,” to which every Jew already belongs from childhood, all the better to carry out the Divine order: “Fill the earth and master it” – mastering all that is around him/her by filling the environment with true light, the light of Torah and Mitzvos, so that everyone will see and know that the whole world is G-d’s.

Wishing you much Hatzlocho in all above, and a joyful Yom Tov, and that the entire year should be a good and sweet year,

Editor’s note: Because of the holiness of the Festival, the Rebbe did not sign this letter.

Chassidus

Chassidus on Gravity (cont.)

Hatomim Aharon Menachem Mendel Kastel
Alumni of Yeshiva Gedolah

Introduction

Part 3-Particular Elements

1-Differing Descriptions

The Frierdicker Rebbe writes there¹ "The idea of nature is that Hashem gave each creation and formation its own particular nature. Like the four elements, Hashem gave fire the nature of ascent, air – lightness; fluidity and spreading out in water; and heaviness in earth and stones." The Rebbe Rashab similarly describes each element individually²: "Fire; its nature is to rise above and not to go down at all, air spreads sideways but does not rise, water descends from a height to a low point and earth, which is denser than all of them, descends downwards." It seems that gravity is not simply a spectrum of heavy to light, but rather that each element has a different nature – a way of reacting to gravity that warrants its own description and requires individual treatment.

1) A little earlier on the same page.

2) SH"M, 5661, pg. 176.

2- Fire and Gravity – Worlds Apart?

Fire is the most “spiritual”³ and otherworldly of the elements and thus seems to have the most complex and esoteric relationship with gravity. It has probably received the most attention in Chassidic literature with its nature of ascent discussed through the entire corpus, of Chassidus beginning with the Tanya⁴ itself. Its nature of ascent certainly seems incompatible with gravity and it would seem that we also don’t observe gravity effecting fire. Fire is also weightless^{5,i}. Furthermore, in many places⁶, Chassidus clearly differentiates between fire and the other elements, saying that fire has the nature of ascent and the others the nature of descent. This nature of ascent can’t even be explained away using the explanation of gravity’s effects on objects of different densities (weights) given above⁷ because fire’s ascent is different to those described there. Fire rises constantly and is always erect on the wick even when it is still and doesn’t actually move upwards. It certainly isn’t being displaced by downwards moving air or the like. Its natural ascent is a calm and still direction, not only a movement. All this gives rise to great difficulty in understanding the above-quoted texts⁸ which order all four elements – including fire – by weight, which determines the strength of gravity on it, implying that gravity does affect fire.

However, examining the Frierdikker Rebbe's words more carefully, it is noticed that he never actually said that fire is lighter, but rather

3) Ibid.

4) Ibid.

5) Sefer HaSichos 5749, pg. 283, citing Siddur im Dach pg. 273d and SH”M 5661, pg. 176. See endnote iii.

6) For example SH”M 5697, pg. 246 (cited in part 2 section 3) and SH”M 5679 pg. 227.

7) Part 2, Section 3.

8) Ibid. Footnote 42.

that it is "more spiritual".⁹ This may seem like a petty distinction but its significance becomes clear when compared with the maamarim upon which this one is (apparently) based¹⁰ where fire is completely omitted from this list. We can thus conclude that indeed, the Frierdikker Rebbe didn't mean that fire is affected by gravity.

this is only a partial solution- the Rambam¹¹ and Midrash Rabbah¹² clearly state that fire is merely lighter than the others, without mentioning anything about it being more spiritual and their language demands elucidation. A simple solution would be to say that being weightless is the lightest possible weight; therefore it can be referred to as lighter, just as zero can be termed less than one.¹³

Perhaps a better and deeper interpretation could be proposed to satisfy the wording that fire is "lighter" than the rest. As stated above, fire is not like the rest of the elements- it is insubstantial and intangible, comprised of only light and heat. Therefore, it doesn't displace the air in its place, on the contrary, it expresses itself through that air- heating it up, giving it a colour, ionising it etc. In fact, fire could be said to be a phenomenon that changes the air's properties such as colour and temperature. Now, this air in which the fire is expressed is affected by gravity¹⁴, has weight and is tangible and substantial enough to be displaced by other air (causing ascent as described above). The

9) Even though the same term is used about air as well, there it is in conjunction with being called light. Similarly, even though earth is only described as more physical, water is described as lighter than it, including it in the weight-based system. Whereas fire is solely described as spiritual.

10) For example: Toras Shmuel, 5629, pg. 129; 5631, vol. 1, pg. 232, SH"M 5656, pg. 339.

11) Ibid.

12) Ibid.

13) Even though it would then be a somewhat imprecise wording (since it has unintended connotations) it is known that "Torah speaks in human language" (Brochos 31b) and concisely (Pesachim 3b) even at the cost of precise implication.

14) See below in section 5.

Alter Rebbe seems to describe this: "It is the air which rises upwards and sideways constantly which pulls the fire in any direction whether upwards or sideways..."¹⁵. It seems that even if the fire itself is not affected by gravity and cannot be described as "lighter", the air from which it is by definition inseparable *is and can* and by virtue of this air, it is appropriate to term fire "lighter".

A slight variation on this explanation (of the relationship between fire and air to apply gravity to it) is given by the Rebbe Rashab¹⁶, "The idea is that the ascent and descent of fire is specifically through air. As we see that without air, fire does not ignite nor illuminate and therefore it is forbidden to cover a flame with a vessel on Shabbos, since the lack of air will extinguish the flame... [The fire's] ascent- that it rises steadily [as opposed to just leaping back to its source] - is caused by the air...". He is describing a different air to that described above, which is one that forms the flame- this air is that which fuels the reaction which in turn fuels the flame¹⁷. Otherwise this seems to be the same concept as above.

3-Fire is Subject to Gravity

A completely new and wildly revolutionary approach is suggested by the Rebbe¹⁸: "Fire has a dual nature:

1. In one aspect, it is one of the four elements which were created together with *the Earth*¹⁹. By virtue of this, also the fire, which

15) SH"M, 5565, vol. 2, pg. 642.

16) SH"M Hemshech Yom Tov shel Rosh HaShanah 5666, pg. 153 (115 in older editions).

17) The two may seem spatially close enough to be indistinguishable but, aside from the conceptual difference, relative to the size of the molecules involved they're worlds apart.

18) SH"S 5749, pg. 284, footnote 34. See also the marginal notes on that footnote and footnote 33.

19) Italics in the original.

is grasped by the wick etc. (by its own nature) doesn't leap off the face of the Earth, similar to the other elements which don't leave the Earth, but rather are drawn downwards. One of the reasons for this is that "everything came from the earth"²⁰(*all four elements*)²¹ and everything is drawn to its source²², therefore all of the four elements pull towards the Earth [similar to the idea of "throw a stick into the air, it will land on its root-side" (BeReishis Rabbah, the end of parshah 53). And see the beginning of S.V. VaYigash 5666²³], because of the attracting force in the Earth. (However there is a difference in the strength of the attraction proportionate to the weight of the elements: earth (the heaviest of all of them) falls down, water descends, air spreads sideways (but does not fly off the Earth) and fire rises above (but doesn't disappear off the Earth).²⁴

2. The second aspect of fire is unique to fire- the way it is different and set apart from the other elements that are upon the Earth (see Or HaTorah, Korach, pg. 708; SH"M, 5630, S.V. Ki BaYom HaZeh; SH"M, 5660, Zeh HaYom; SH"M, 5697, S.V. Rishpehah). Regarding this aspect, [fire] has no form and rises (and without a hold [such as a wick] the fire would disappear) - because of

20) See the references given above in footnote 58.

21) Emphasis added. Rav Nachman (in both midrashim cited above in footnote) adds that even the sphere [orbit] of the sun was created from the earth*. If the sun's orbit (which is much more spiritual and refined than fire- see the references in footnote 139) came from the earth then fire certainly did. Rabi Chiyya bar Yosef (in Koheles Rabbah) uses another verse as a source (BeReishis 2,6) "A mist rose up from the land" and in Siddur im Dach (134a) it explains that mist (like everything else) is composed of all four elements thereby proving that even fire came from the earth.

22) For sources for this and discussion about its application here see endnote ii.

23) SH"M Hemshech Yom Tov shel Rosh HaShanah 5666, pg. 159 (119).

24) Note that this is consistent with Einstein's Theory of Relativity which states that even light is affected by gravity. Support for this theory has already been observed in the form of Einstein rings, one of its predicted consequences.

the spiritual aspect within it (the [relative] lack of existence [within it]) and it wants to reach a state of lack of existence (which, in this detail, it is not similar to the other elements). ... But the matter still requires further study."

The Rebbe describes two natures within fire: The first (taken in isolation) is termed a result of gravity ("the force of attraction present within the Earth") and described as the phenomenon that fire rises (but doesn't leap off the Earth) and willingly (so-to-speak) remains grasped by the wick. This in itself is a (somewhat) dual nature- its rise is not a result of (its own) gravity (at least) but it is limited and slowed by gravity. The Rebbe says that its nature to go down can be seen in its ascent – this means that if the force of gravity (acting on it) were to be very strong, it would actually pull fire down. If it were merely strong, it would keep it in its place and prevent it from going up (as in fact it does with the help of the wick) but since it is weak, it can only slow its ascent and prevent it from shooting up instantly- as it would if gravity had not influenced it at all. The second is simply that fire, being more spiritual than the other elements, shoots up instantaneously and quite unnaturally (physical movements usually take time). It seems that the aspect of instant ascent is observed only when there is nothing to hold the flame down and the gradual ascent only in the presence of a wick and fuel. However, it is clear that both aspects are present (in potential) in the same physical flame.

Another support for the Rebbe's approach in dividing fire into two phenomena is found in Siddur im Dach²⁵. It explains the Gemara's statement "Michoel [flies] in one [leap], Gavriel in two, Eliyahu in three and the angel of death in eight..."²⁶. It asks why the neshamah's speed is not listed here and answers that these **four** angels are limited by

25) 133b.

26) Brochos 4b.

their connection to this world which is composed of **four** elements²⁷. The neshamah has no such limitations. It seems clear that fire- as one of the four elements- should also have a limited speed²⁸. This is not quite in keeping with the language in Chassidus in many places²⁹ "nistalek" which denotes an instantaneous departure (similar, perhaps, to teleportation). Similarly, the rest of Chassidus compares the neshamah's ascent to the flame's, while here it makes them opposites. However, in light of the Rebbe's explanation that there are two different and opposite natures in fire, all is resolved and illuminated: there is the fire as it ascends instantly to its source (the Rebbe's second aspect) and this is a suitable analogy for the neshamah. This fire is not the fire mentioned in the Siddur; there it describes fire as one of the four elements – one of the distinctions the Rebbe uses to define the first aspect in contrast to the second which the Rebbe says is in a class of its own (not one of the four). The Siddur is talking about the first aspect of fire which rises only slightly- as a result of gravity's effects on it- and is classified as one of the four elements.

4- Fire's identity crisis- does it go down or not?

The Rebbe makes it clear that both aspects are present in the same physical flame. How then can these two contradictory natures (to go up and to go down) coexist?

One possible model is found in the Frierdikker Rebbe's maamarim³⁰, where he explains that a stone has two opposite natures: its primary nature³¹ - its weight, and its secondary nature³²- rest. Its

27) See also the Maharsha on the Gemara there who explains each angel's speed by relating them to their element.

28) Especially according to the Maharsha *ibid.* who relates Gavriel to fire.

29) Not in Tanya (*Ibid.*) but in most of the other places cited in section 1 and 2.

30) SH"M 5693, pg. 532.

31) In that it is stronger and more general- shared across a large category- all things formed of the element of earth.

weight causes movement- falling and very gradually sinking into the earth in its place- overwhelming its nature of rest. Here too the fire's two natures could overwhelm each other- each one taking its turn to manifest in accordance with external circumstances³³. Perhaps the nature of ascent is generally dominant and only with the help of the wick and the air does the other nature (to be affected by gravity and remain below) surface.

Alternatively, it's possible to differentiate between the darker fire around the wick and the outer lighter fire. This approach seems implicit in *Toras Chayim*³⁴: "There is also another phenomenon seen in the fire of a candle, a flame or a blaze; that it specifically descends and is drawn down and grasped below in a state of descent. This is in order to consume that which grasps it [wood or a wick] or to draw of the oil which is in the wick. This is only the black fire which is close to the wick, but the black fire doesn't flicker as much as the white fire, which doesn't rest and flickers upwards and downwards to rest on the wick ... (meaning that when the fire which burns [and consumes the fuel i.e. the black fire] finishes [its fuel], then the white light [fire?] ascends in flame. When [the black fire] rests on the wick, the white fire descends and rests below ... as is known)."³⁵ This would mean that the lighter 'white' fire only rises by nature (it dips down only because of the air and the wick (and the 'black' fire)) and the darker 'black' fire naturally stays down because gravity pulls it down. Further support for this:

32) Weaker and unique to it.

33) Perhaps a further similarity could be suggested: the fire's nature of instant ascent (and only ascent) is particular to it. It should be its secondary nature and its nature of limited and restrained ascent, which will readily descend and stay down in response to external stimuli (wick etc.) is common to all the elements, so this should be its primary (dominant) nature. This would seem to be an opposite conclusion to that in the body of the article here.

34) *Shmos*, 394b.

35) See also *Hemshech* 5666 pg. 153 (115).

Sha'arei Orah³⁶ compares the white fire to the Nefesh Elohis (G-Dly Soul) and the black fire to the Nefesh HaBehamis (Animalistic Soul) and it is known that "the spirit of the beast is the one that descends down into the earth"^{37,38}

5- Air- Updrafts and Downdrafts.

Air is affected by gravity and drawn down.³⁹ On the other hand it is described as rising.⁴⁰ In Sefer Maamarim 5679,⁴¹ it is written that fire alone has the nature of ascent, because it is more spiritual than the other three. Air, the Rebbe Rashab distinguishes, both ascends and descends.⁴² Perhaps the explanation is that, in general, density (which regulates weight) is dependent on temperature, so that heat causes things to expand, and cold causes things to contract. Similarly, hot air is more spread out (and therefore lighter) than cold air. The cold air's descent (due to gravity) causes the hot air to ascend as described above.

Support for this explanation from within Chassidus can be found in Toras Chayim⁴³ where it explains that air both ascends and descends

36) Pg. 69-70.

37) Koheles 3,2. Linked to Nefesh HaBehamis and Nefesh Elohis in SH"M 5646-50, pg. 489 at the end (also printed in SH"M 5709, pg. 16 (100) at the beginning).

38) See also Likkutei Sichos, Vol. 6, pg. 112, footnote 35 which may imply a possible third approach.

39) As explained above in part 2 section 3 citing SH"M, 5697, S.V. Rishpehah.

40) For example see Rambam ibid. 4,2 and SH"M of the Mittler Rebbe, BaMidbar vol. 2, pg. 788.

41) Pg. 227.

42) More literally translated he says there is air that rises and air that descends, but his intention cannot be that these are two types of air. If that were the case, the air which rises would be no different to fire (based on this explanation, though perhaps other differences could be suggested). His whole purpose here is to explain the unique quality of fire. Rather, air in general can either ascend or descend.

43) BeReishis 39d, Shmos 394a. See also Hemshech 5666, pg. 149 (111).

because it is composed of both fire and water (meaning its nature contains aspects of both⁴⁴). There is room to interpret this as a statement of my explanation since the element of fire is defined as hot (and dry and light) and water is defined as cold (and wet)⁴⁵.

The Rebbe⁴⁶ adds that even when the air is rising, it is still subject to gravity, in that it doesn't (rise quickly and forcefully enough to) leave (the atmosphere and) the Earth.⁴⁷

6- Water- Ascent as Part of Descent

Water is described variously as flowing and spreading out⁴⁸ or "water leaves from a high place and goes to a low place"⁴⁹ (not that it descends), and even that "water's nature is to be drawn down"⁵⁰. Why does it flow and why can't it be described as simply descending or falling? Surely its movements are also governed by and caused by gravity!

All this is, of course, due to the liquid nature of water, which is described at length by the Rebbe Rashab⁵¹: "The Ocean is a collection of

44) See above footnote 21. Otherwise, if it meant both are physically present, it couldn't be its own element (not because it is divisible- indivisibility is not a defining feature of the Four Elements (as stated there) but because it would have no distinct feature that could not be described in terms of its component elements). This is also implicit in Hemshech 5666 there, see there.

45) Rambam *ibid.* 4,2. See also *Toras Chayim*, Shmos, pg. 28a which seems to relate air's dual nature to fire's heat and water's cold (and similarly *BeReishis* pg. 39d that clearly links it to fire's dryness and water's wetness).

46) In that footnote in SH" S.

47) See above, in part 3 section 3, for a lengthier explanation of this point regarding fire.

48) SH" M 5708 pg. 204 quoted above in section 1.

49) Ta'anis 7a. Variously abbreviated in *Chassidus* see SH" M 5661 pg. 176 for an example. See also Rambam *ibid.*

50) *Toras Chayim*, Shmos, 394a.

51) SH" M 5659, pg. 213 (197). Copied almost letter-by-letter from SH" M of the Mittler Rebbe, *BaMidbar* vol. 2, pg. 361.

many water[particle]s contained within it. [These particles are] in a state of ultimate mutual inclusion, as one entity, without any division whatsoever in its flow. Rather, they are all absolutely unified by their inclusion and constituency to the point that, in general, they form one entity [and substance]. Nonetheless, they are [particles of?] water, and there is a [certain] diffusion of the water within the ocean [in the form of] movements [currents?] to and fro, but it will not leave the boundary and territory that the ocean has.⁵² Meaning that the water [particles] are not drawn [in different directions] independently as distinct [or separate] individual part[icle]s, rather in [the water] itself, there is [a certain] movement [and flow]. "⁵³ He seems to be describing the two somewhat contradictory aspects that define a liquid; on the one hand, it is not a solid, with all its molecules in a rigid structure- it is flexible and flowing. On the other hand, it is not a gas either, which diffuses and disperses at the slightest opportunity. It is a cohesive singular entity and behaves as such. Its molecules are distant enough to move 'independently', but too close to leave the collective whole. The result is a single amorphous body that can spread in any number of directions at once without having to divide. This accounts for the abovementioned descriptions of "flowing" and "spreading" and is also the beginnings of an understanding of the expression that "water leaves a high place and goes to a low place".

The effects of gravity on water (as influenced by its liquid nature) are distinguishable in a few ways: it need not stop everything, turn around and fall (so-to-speak) – as a solid stone would. It can flow there gradually, even where a stone might get stuck rolling down the hill. Another is that water will generally just flow right on. Lastly and most significantly, there's what is called the Siphon Effect- water can go up first in order to eventually reach a lower place. The Siphon Effect is the

52) This seems to be a somewhat similar concept to surface tension.

53) This sentence was added by the Rebbe Rashab.

most likely interpretation of the Gemara's different description. It can't be described as simply falling or descending, since it could go up as well- and as part of the same journey downwards- so it is instead said to 'leave a high place and go to a low place'. A possible explanation of this phenomenon (and its relationship with gravity) is: when part of the water is in a low place, and part suspended at an even lower point (as a result of suction for example), the second part gets drawn down. Now, the two parts are really one body (which resists division)- as has just been described- so when the second part descends, it pulls the other part along with it, resulting in an ascent.

Clearly then, even this ascent is a result of gravity. Therefore, to describe the nature of water (or even gravity's effects on it) as simple descent or fall would have been entirely inaccurate. It “goes from a high place to a low place” even if it has to go up to get there.

Summary of Parts 2 and 3

1 that Chassidus doesn't reject gravity and discusses a similar force, the question was asked: is science's view on gravity and Torah's version the same? The first possible difference to be explored was that Chassidus seems to describe gravity as effective only on the element of earth (and substances in which it's dominant) while physics posits that any mass is affected. Based on a maamar of the Friedicker Rebbe it was explained that other elements are also affected and rise only because they are displaced by heavier falling objects- not because gravity doesn't affect them. Each element was discussed in turn justifying their varying descriptions and exploring each one's relationship with gravity. Fire seemed to be an exception- only rising and not because of displacement- not affected by gravity. The Rebbe explains that this is only one side of the coin: fire is also affected by gravity. It was explained that air's rise is also a result of displacement and it both rises and falls depending on its temperature which controls its density (and weight). Water is described as moving from a higher

place to a lower place instead of falling or going down because it can go up on its way to the lower place as a result of the interaction between gravity and its liquid nature.

Part 4-Gravity Generalised

1- Gravity- Dictatorship, Democracy or Anarchy

Thus far, gravity has been discussed as a cause for falling on Earth. The topic waiting to be broached is physics' definition, that it applies between any two bodies with mass. Does Torah agree that two stones also attract each other (even if so weakly as to be irrelevant in practice)? Can it tolerate even the suggestion that the various objects drawn to the Earth also draw the Earth and perhaps move it, however slightly?

The first obstacle⁵⁴ to be faced in this direction is that all that has been cited thus far refers to the Earth- as the source- drawing all stones and people etc. back to their source because "everything is drawn to its source". One stone cannot claim to be the source of the second (especially different minerals or people and stones etc.). So, it would seem clear that two random objects such as stones (or even planets) should not have a mutual gravity. However, the Rebbe writes⁵⁵ that this is only "one of the reasons" why all four elements "are drawn downwards". One obstacle successfully surmounted.

Furthermore, the Rebbe writes there that all the elements "*pull* towards the Earth", using the active form of the verb in place of the passive ('are pulled').⁵⁶ This points to the drawn objects having an

54) The next is the beginning of the next section.

55) Ibid. Quoted in full above part 3 section 3.

56) Compare the wording of the Mittler Rebbe (quoted above part 1 section 2) that "each element *goes* to its source".

'active role' and being 'contributing participants' in their being drawn. Meaning, the situation is not that the Earth pulls them against 'their nature', kicking and screaming, nor even that their nature is merely particularly suited to being drawn. Rather, they take an active role in being drawn, i.e. they are drawing themselves towards the drawer just as much as it is drawing them (in concept not in quantity and strength of the force). If so, it is but one small step further to say that just as they are able to be actively drawn, so too they can draw others.

In the same footnote, the Rebbe writes, "by virtue of the attracting force *within the Earth*"- implying that only the Earth attracts and the object is drawn passively. This would seem to contradict the earlier implication that it's active. However, perhaps gravity is ascribed to the Earth only because its mass is so much larger that the force emanating from it is incomparably stronger than that of the object it draws.⁵⁷

Moving away from semantics a little; there are other phrases in Chassidus which indicate that the drawn object (in general, not specifically gravity) is drawn by virtue of its own nature- not only the Earth's. The Mittler Rebbe writes,⁵⁸ "everything is drawn towards its source automatically and of its own accord", "... on its own without any choice"^{59,60}

Comparing gravity to other (significantly different) instances of this law, "everything is drawn to its source" yields some clearer support for the assertion that gravity is mutual and between any two masses. In

57) The Rebbe uses a similar approach in SH" S, *ibid*, marginal note *: "And what is written in *Toras Chaim* and *Hemshech 5666* *ibid*. that this [staying of the flame on the wick] is contrary to its nature. ... This is because if not for the gripped object [the wick] and the air, the fire would rise and disappear above. But [the matter] still requires further study". The description is based on the human perception.

58) SH" M BaMidbar, vol. 1, pg. 53.

59) *Ibid*. pg. 78.

60) See also *Hemshech 5666*, pg. 423 (319).

Ner Mitzvah VeTorah Or⁶¹ it is written: "When there are two opposites, upper and lower, there is a force, a third [entity] which is higher than them which joins them.⁶² The idea is that since each thing is divided and its composition includes its opposite, therefore it desires to be also included together with its opposite [in a composite]. Like fire and water; since fire has within it part[icle]s of water and each element is drawn to its source and draws by itself, thus this fire; even though water is its opposite but the water within the fire is drawn to the element of water. Similarly the fire within the water is drawn to the element of fire. Therefore, it's possible for there to be a desire in fire and water for composition ...". This is clearly referring to particles of the elements, not the elements themselves, especially since the elements themselves are pure by definition.⁶³ Thus, this is an example of the law "everything is drawn to its source" in action between two individual particles, instead of the collective source⁶⁴- analogous to gravity between two stones, rather than a stone and the Earth. Even though this 'desire' is clearly not gravity, since it is another instance of the same law,⁶⁵ it seems logical to compare them⁶⁶.

61) Sha'ar HaEmunah, pg. 73a-b.

62) This implies that gravity is neither a property of the source nor of the drawn object but rather a third independent force

63) See Toras Chayim BeReishis 12d (at the end on the column) until 13a and in many other places, some of which are cited in the endnotes there.

64) Although, presumably, one still has to act as the 'source' and the other as the 'derivative'- the water within the fire is drawn to the water (which serves as the 'source' in this instance) - not vice versa. This is dissimilar to gravity, where both are the same. On the other hand, practically, the fire is drawn to the water equally as much as the water is drawn to the fire (since the fire within the water is drawn to the fire as much as the water within the fire is drawn to the water) - similar to gravity. Perhaps, here too, the Rebbe's approach quoted in footnote 124 could be applied.

65) In slightly different words- "each element" instead of "everything".

66) Just like all these maamarim compare this to different examples drawn from music, gastronomy, sefiros and avodah.

2- Gravity and the Still Earth

A perhaps more serious hurdle presents itself: if gravity is mutual, as physics suggests, the Earth, in moving its inhabitants, must itself move (however imperceptibly). This would be in direct contradiction to Torah's position that the Earth is utterly still⁶⁷. Worse still, the Earth pulls objects as large as the sun⁶⁸ which should cause huge motion!

It would be tempting to answer simply and say that gravity is merely a property of the Earth.⁶⁹ However, Chassidus clearly states,⁷⁰ "Any mover must itself be moved"⁷¹. Even taking this superficially would already seem to prove that the Earth must move, reinstating our original question.⁷² A deeper look⁷³ hints that perhaps gravity is indeed mutual (as above).

67) See Rambam *ibid.* 3,4 (especially clear in Rabbi Kapach's commentary) and BeReishis Rabbah 4,2 (see also Eitz Yosef and Nechmad LeMaareh *ad loc.*).

68) "Approximately 167 times as large as Earth" –Tanya (part 2, chapter 7, pg. 167), "about 170 times" –Rambam (*ibid.* 3,8) or "166 3/8" –Rambam (Commentary on Mishnayos, Introduction, paragraph beginning "VeHineni Nosein Lecha") and all these are referring to the diameter not the volume (Likkutei Sichos, vol. 10, pg. 180 and also see there for comparison with current scientific theory).

69) Effectively uprooting the conclusion of the previous section.

70) See SH"M 5663, vol. 1, pg. 3 (Vol. 2, pg. 9; 5708 pg. 8) from Moreh Nevuchim, part 2, introduction 9. This idea is also cited in another forty places including the writings of each of the seven Rebbeim!

71) This would seem to parallel Newton's Third Law: "For every action, there is an equal and opposite reaction.". Consult the references in the previous footnote.

72) To say that gravity is an exception to this rule is extremely difficult. Especially since the Rebbe Rashab (*ibid.*) and the Rambam (Moreh Nevuchim *ibid.* Chapter 1) give an example of the orbits which are the least understood and most supernatural of physical phenomena. They are said to be intelligent (Rambam, Mishneh Torah, *ibid.* 3,9), composed of a profoundly different substance to the four Earthly elements (*ibid.* 2,3; 3,10) and their motion is caused directly by Hashem (*ibid.* 1,5; 3,1). The Rambam writes (Moreh Nevuchim, part 2, chapter 24 at its end) that to them (and astronomy in general) applies the verse (Tehillim 115,16): "The heavens, the heavens belong to G-D and the land He gave to the sons of man.". However, many commentaries on Moreh Nevuchim do make an exception of magnets, but this seems contrary to empirical evidence (experienced by many

Perhaps it is possible to answer in light of the Theory of Relativity,⁷⁴ which states that everything depends on the frame of reference. If the Earth is the frame of reference, it is still and everything else moves relative to it. If a person or the sun is taken as the frame of reference, they are still and it is the earth which moves relative to them. If an observer (a third body) is the frame of reference, then both the Earth and the people move in relation to each other (and the observer is still). So Torah saying the Earth is still, is from the earth's frame of reference. The law that "any mover must itself move"⁷⁵ is stated in the observer's frame of reference. The matter would seem to be resolved. However, greater minds than the author have struggled with this problem, which arouses the thought that simple answers to complex questions can also stem from ignorance.

In view of this answer (that Earth could move as a result of gravity, according to Torah, but only in certain frames of reference), it is fascinating to note that there is such an implication in Chassidus. The Mittler Rebbe, in one of his maamarim,⁷⁶ repeats the content of many others,⁷⁷ describing the simple faith basic to all Jews that exists independently of any efforts etc. simply because of their souls' essential nature: This is by virtue of the fact that Knesses Yisroel [the collective entity of the people of Yisroel] are drawn to their essential source from whence they were taken. Just like a son is drawn after his

children with their toys) and there are other strange assertions in their words there. In general, it seems an open question whether these commentaries form a part of the unquestionable Torah- see SH" M Likkut, vol. 2, pg. 283 about Ephodi.

73) I.e. if it is in fact synonymous with Newton's Third Law (as suggested in footnote 138).

74) Which the Rebbe famously uses to resolve the more general issue of geocentricity. For example see Igros Kodesh, vol. 18, letter 6877 (pg. 393), also printed in Likkutei Sichos, vol. 10, pg. 181.

75) And Newton's Third Law.

76) VaYikra, vol. 1, pg. 294.

77) See the references in the beginning of endnote iii.

father without his choice or consciousness being at all involved. This is the meaning of the verse, "I have remembered you for the kindness of your youth,"-specifically youth- "your following after me..." like a toddler is drawn after [and follows]⁷⁸ after his father and won't turn right or left nor follow [another]⁷⁹ man other than [his father]⁸⁰.

Here, however, he adds something not stated anywhere else (that the author has seen)⁸¹: "Being that this faith is a result of his essence and born nature like a son is drawn after his father, because he is drawn to his source- as explained above- *so too the father is drawn after the son* in a natural and childlike way- mindlessly..."⁸². It seems clear that the law "everything is drawn to its source"⁸³ is mutual; the source is attracted to its derivative just as its derivative is attracted to it. It seems quite reasonable to extrapolate this (from one example of this law) to gravity (another application of the same law)⁸⁴. If so, Chassidus itself hints to the Earth moving as a result of its drawing various objects (in the observer's frame of reference).

3- Gravity in the Solar System

section proved that Earth is subject to gravity, what about between the sun and the Earth? At first glance the answer would seem to be negative; only the four elements are affected by gravity . The Rambam says ⁸⁵ that the stars (i.e. Heavenly bodies including planets and

78) Publishers addition there from manuscript.

79) Publishers addition there from manuscript.

80) Author's addition here.

81) Pg. 296.

82) Emphasis added.

83) Even if here this phrase is not clearly stated, many other maamarim (cited in endnote ii) that discuss precisely this example do state it clearly.

84) Even though there is much ground to distinguish between the two (see endnote ii).

85) Ibid. 2,3; 3,11.

moons⁸⁶) are not composed of the four elements but rather a substance which is completely different in both matter and form⁸⁷. However, in Sefer HaSichos,⁸⁸ the Rebbe explains gravity as a result of the law that "everything is drawn to its source" and "everything came from the earth". In Midrash Rabbah,⁸⁹ it adds that even the orbit of the sun came from the earth. So it would seem that the sun is also subject to gravity.⁹⁰

However, the orbits in the Torah (Ptolemaic) system are not a result of gravity. The Rambam writes clearly⁹¹ that the ninth orbit is turned by Hashem Himself and this ninth orbit turns the other eight^{92,93}. In general, these orbits and the whole system are little understood and await explanation. In any event, gravity does apply to stars and planets but this is not the cause of their orbits.⁹⁴

86) See the wording *ibid.* 3,2.

87) This is difficult to understand- moon rocks have been brought back to Earth and analysed. It would seem to be indisputable fact that they are rocks of similar chemical composition to those on Earth- certainly not radically different in form and matter. Further study is required. However, it is worth noting that the Rebbe writes (*Likkutei Sichos*, vol. 30, pg. 271 as explained in *Chumash with the commentary Ohr Menachem*, Parshas BeReishis, pg. 129) that Etz Chaim (and, by implication, Chassidus as well) disagrees with this Rambam. The Rambam holds that two hyles were created for the heavens and the Earth respectively. Etz Chaim holds that both the heavens and the Earth were created from one hyle.

88) Quoted in part 3 section 3 in full.

89) Cited in footnote 58.

90) The higher orbits and the 'stars' within them- from a literal reading- it would seem, are not affected by gravity, but perhaps this is just the only example which has a clear source in the verse (which is brought there) and Rav Nachman means all the stars. It remains to be seen whether "the *orbit* of the sun" is literal or just means the sun. It is very hard to imagine the orbit itself is subject to gravity.

91) *Ibid.* 1,5.

92) *Ibid.* 3,1.

93) This adds further explanation to why the Earth needn't orbit around the sun, despite the size difference. (The main explanation is relativity - see footnote 141.)

94) This is extremely difficult to understand since gravity and the galgalim are two independent and contradictory alternatives to explain the orbits.

Part 5- Conclusion

Part 1

The HaYom Yom writes that the astronomers asked why Americans standing on the bottom of the earth don't simply fall off. Their answer, it continues, is incorrect. The correct answer, it states, is that the heavenly spheres are sourced in iggulim- spiritual spheres that have no top or bottom (neither internal nor external)- so too Earth has no top or bottom and up and down are defined as towards and away from its centre. Many assume 'their answer' was gravity, which HaYom Yom rejects and replaces with 'iggulim'. This is very problematic and makes for an unsatisfactory theory, whose connection to the issue gravity resolves is vague and little understood. Examining the sources, their answer was not phrased as gravity, but the nature of each element to be drawn to its source. Chassidus also explains the phenomenon of things falling using such terminology?! Some claim Chassidus means that certain objects (in which earth is the dominant element) have a nature to fall rather than to be drawn, but aside from the inherent logical difficulties, there are clear sources in Chassidus that elements are drawn to their source and that this causes things to fall. The correct explanation of HaYom Yom is that the astronomers thought up and down are independent of Earth, and therefore everything falls from up to down regardless of the direction relative to Earth. Their 'gravity' was a "Band-Aid solution" to save Americans from falling off the Earth, rather than an explanation as to why Europeans and Americans alike *do* fall- towards the Earth. This is obviously wrong and therefore HaYom Yom rejects it. The consequences of gravity and the 'falling force' together are comical- a further reason to reject their model. Torah doesn't reject gravity, and has a parallel concept, but is it the same?

Parts 2 and 3

Gravity applies to all elements, despite the description of earth being drawn to its source- Earth. This is because Earth is the source of all the elements. The Rebbe even introduces gravity to fire (which in Chassidus is generally said to have only a rising nature). Air is sometimes said to rise and sometimes to fall and there are some sources that mention both. It would seem to depend on the temperature of the air (which controls its density). Water warrants a unique description – it "goes from a high place to a low place"- (which is lengthy and omits to mention descent) because its reaction to gravity can include going up on its way down (like a siphon). So there is no difference between Torah and science regarding which elements gravity applies to.

Part 4

Chassidus in terms of elements going to their source, it would seem that only Earth has gravity, not the objects it draws, and they certainly couldn't draw each other. However, there is support in Chassidus for the notion that each object has its own gravity. If so, these objects should also move Earth. Torah says that the Earth is utterly still. The problem is strengthened by the law cited extensively in Chassidus that any mover must itself move. Perhaps the answer is the Theory of Relativity: this law and mutual gravity belong in the observer's frame of reference and the Earth's motionlessness in its own frame of reference. There is even implication in Chassidus that the Earth does move due to its 'efforts' to attract objects (in the observer's frame of reference). The sun and other heavenly bodies aren't made of the same four elements but the Midrash makes it clear that this doesn't make a difference. They do have gravity but this doesn't cause their orbits. Hashem Himself sets their orbits in motion.

The Point

Torah's gravity seems almost exactly the same as physics'. Both apply to any mass; no matter which element it's made out of, and even if it's a heavenly body made of a fifth substance. There are reasonable grounds to suggest that Torah also sees gravity as mutual and between any two bodies- not necessarily the Earth. The only difference seems to be gravity's significance in astronomy- Torah doesn't see the orbits as a result of gravity.

The Last Word

As always, the last word goes to the Rebbe. Presented here is an excerpt from a letter heavy with implications. The Rebbe uses the same terms one might expect to find in a physics textbook- stripped of the descriptions found elsewhere about the element of earth and the Earth. He discusses gravity without mentioning the earth at all, seemingly referring to any two objects⁹⁵ and states that gravity is dependent on the mass of both bodies. Both these details point undeniably at gravity being a mutual force.

". . Gravity is dependent on the mass⁹⁶ of the attractor and the attracted. Nonetheless, if the distance between them would decrease by a factor of 7 (but their mass would not change), the force of gravity would increase by a factor of 49 [7²] and not 343 [7³], as is known . ."⁹⁷

95) Otherwise, the attractor's mass would be a constant, not a variable as it's described here.

96) "Kamus" in the original- literally quantity. Perhaps could be translated as volume.

97) Taken from the same letter as was excerpted in the introduction (in the spirit of the proverb "the beginning is wedged into the end").

Endnotes

ⁱ Both these sources clearly specify "the elemental fire" (SH" M) or (in slightly different terms) "the source of the element of fire" (Siddur) and say that this otherworldly fire (utterly unlike ours below) is weightless (in contradistinction to air). So perhaps it is the Rebbe's chiddush and these citations constitute mere support, rather than actual sources.

However, these two sources seem to imply that specifically and only elemental fire has no weight, but air, which is lower (i.e. more coarse and physical), does and certainly common fire, which is yet lower, should definitely have weight. [However, by this logic, fire should have more weight than air, which is very difficult to believe.] A possible contrary implication could be suggested from the omission of this being clearly stated in a passage which differentiates between the three. Another shaky implication that common fire has no weight is that the maamar (in SH" M) continues (after discussing elemental fire's weightlessness) by saying that common fire is more spiritual and refined than air, in that air is tangible enough to form a forceful wind, while fire is not. This implies (somewhat) that just as this is a quality of common fire, so too is the preceding quality of weightlessness. Overall, it seems from these sources that fire does have a weight. Indeed, according to what the Rebbe writes in footnote 34 (quoted in full in part 3 section 3), that fire is affected by gravity, it would seem that fire does in fact have a weight.

As for the statement that "fire is weightless" in the body there (on pg. 283) perhaps the Rebbe is referring to this too when he writes (in footnote 34) that the body of the sichah is (true only) in reference to the other (second) aspect of fire which has no gravity. This would fit nicely - one aspect of fire has no weight, and therefore no gravity, and the other has both. The only difficulty would be resolving how weight could be present in only one aspect. This is really no problem once we differentiate between mass and weight; mass being a physical quality of the substance, like volume and weight being the way mass is perceived as it results in gravity. In other words, weight is more of a behavior than a property, so it could be present in only one aspect.

However, this is still not a full resolution since, if so, the second ('normal') aspect of fire (the one the Rebbe didn't introduce, which is the one discussed in all the earlier sources including these two) is still weightless and not mentioned in the sources and the Rebbe himself is originating it. The full import of this is realised in light of the fact that it is this second aspect that is discussed in Chassidus before the Rebbe, since the first aspect is the Rebbe's chiddush. Meaning that those two sources are almost certainly referring to this second aspect in their implication that fire has weight and not the first aspect.

Perhaps it would be possible to resolve this difficulty by saying that the fire referred to in those sources is not only the second aspect. One way of viewing the Rebbe's innovation is that before, only the second aspect was known (or revealed)

and the Rebbe introduced the first. There is, however, an alternative; before, Chassidus had not distinguished between the two aspects, seeing them as one nature of fire and the Rebbe split them into two. If so, the implication in these sources, that fire has weight, is referring to fire's combined nature, which includes the first aspect and its weight (along with the second weightless aspect). The Rebbe has a source for the first aspect having weight, but none for the second aspect being weightless (but there is no implication to the contrary either). Similarly, the nature of ascent described the net result of both aspects, even though it was the result of the second alone.