

Equilibrated: Life, the Universe, and Everything*

By

Sharon L. McLennan-Otis

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Felicia Martinez, Advisor

Saint Mary's College of California

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Look around you. Look at your neighbor, at this room, at the green grass and the tall trees outside. Watch the clouds, the blue sky, and the sun. Think of this school, the grounds, the buildings, and the essence. Imagine your favorite music; live its intricate melodies and harmonies. Think of a person you love. Think of God. Think of yourself. Notice who you are in your patterned complexities and in the stillness of your being. Know that none of it exists – none of it – without a universal foundation on the principle of equilibrium.

One day long ago, I was sitting in Freshman Laboratory. We had just completed Archimedes' Proposition 6 in *On the Equilibrium of Planes* and were discussing its significance as a class. I was not particularly interested in what was going on. I was not a mechanic. I did not like math. Biology was over, and I was sad. My science education was all downhill from there. But, in listening to the conversation, something inexplicable happened. In a single pin prick of a moment, I saw my life, the universe, and everything in existence – the infinite and the infinitesimal – all mysteriously woven together into the same cord. My whole world grew larger.

It struck me that we were in some sort of cosmic balance with one another, with our environment, and with the very substance of the universe. We were actively equilibrating, just like the weights and lengths of Archimedes' lever. We were, in effect, making a whole, an active *being*, in the sense of a verb, which was greater than the sum of our individual existences. We are not each LEGO blocks with our separate but side-by-side lives. Instead, we are clay. We are all clay formed together of the same substance and as much a part of each other's very existence as the rock is of the earth. I cannot hope to describe to you that feeling. I can only tell you that in that single luminous moment I saw equilibrium pervading everything. It guides and shapes our interactions as steadily and continuously as the rise and fall of the tides. We see it in mathematics and mechanics; we experience it in the biological and the spiritual, and we speak its symbolic

language in our everyday lives. In fact, equilibrium is so ubiquitous to our existence that the lines between reality and metaphor and analogy grow nebulous.

Although it is the most meaningful for me, Archimedes' Proposition 6 is but one example of equilibrium. Isaac Newton, for instance, following in the footsteps of all the great scientists who came before him, describes in his *Principia* the equilibrating system that keeps the planets in orbit about our sun. Philosophers of all and every type look for the balance in our lives – they ask, “what balance is necessary in our actions for us to be good people?” Religion does the same with the added element of a relationship to a personal God. Political systems are designed with balances of power in mind. Everywhere you turn, if there is a relationship or a system, some type of equilibrium or continued equilibration is in play.

This is not to say that systems do not fail. They fail and falter every single day. After all, what is death, but a failing of the living organism to maintain self-sustainable existence? The body breaks down. The government is overthrown. The system is no longer. It happens. But that ceasing of one system simply returns the composite parts to a more generalized sphere where they are subject to some other form of equilibration. The failure of the system to thrive, to be alive and maintain itself, cannot and does not undermine what is obvious to the eyes: everywhere that there is maintenance of a working state, there is equilibrium of some type at work – even if it is tending towards the end of the system.

There are far too many examples to demonstrate all of them here, so I have chosen those few that best show how the idea of equilibrium present in Archimedes' Proposition 6 applies not only to the physical and mathematical, but also filters into our understanding of personal relationships with each other and with God. Scientifically, philosophically, and religiously, one cannot help but discover equilibrium. It is my intention, then, to demonstrate, in part, the various

modes of equilibrium that make up our existence. Starting with the simply demonstrated equilibrium of Archimedes' Proposition 6, I will continue on to Newton's more dynamic equilibration of the orbits of the planets. I will then use the *Timaeus* by Plato to demonstrate the undercurrent of equilibrium flowing through Greek philosophic thought and touching upon everything from the physical creation of the universe to the just balance of our actual and metaphorical cities and souls. Finally, I point to the biblical relationship between God and humanity to show that even in our worship we are dancing to the divine music of equilibrium.

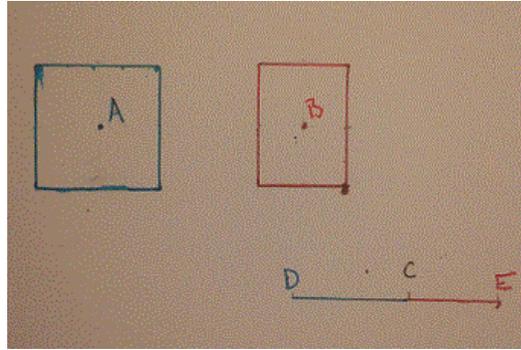
Archimedes' Proposition 6 in *On the Equilibrium of Planes* is most famously known as a mechanical principle: the so-called "Law of the Lever." But Archimedes does not present this proposition as one of the mechanical tool itself. Instead, it is found in his work *On the Equilibrium of Planes*. Thus, the demonstrations are those of the underlying principles; the *how* is that which is treated with importance, not the mechanical instrument itself. So, what is equilibrium in the context of Proposition 6? What does it mean? What does Proposition 6 tell us about equilibrium?

Archimedes' Proposition 6 from *On the Equilibrium of Planes*

Two commensurable magnitudes balance at distances reciprocally proportional to the magnitudes (Archimedes 192).

Given: Magnitude A with point A being the center of gravity, commensurable with Magnitude B having point B as its center of gravity. Straight Line DE divided at C so that $A : B :: DC : CE$.

Prove: If A is placed at E, and B at D, C is the center of gravity of the two magnitudes (A and B) taken together.



The first thing to notice in this proposition is that it treats planar shapes and lines as if they have weight of their own and thus have centers of gravity. Proposition 6 starts in the mathematical and ends in the mechanical, or the physical. In order to accept this proof as valid, we must accept that, at least in some respects, treating of the physical world is equivalent to treating of the mathematical world and can be approached with the same understanding of patterns and systems. Thus, when we find a mathematical equilibrium point in Proposition 6 we can also find a corresponding physical equilibrium point when we perform the mechanical experiment.

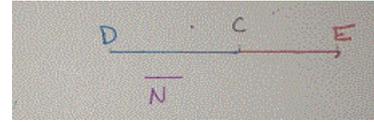
1. Since A and B are commensurable, so are DC and CE.

We are immediately dealing with magnitudes of different kind: weight and length. But, additionally, we are saying that a weight can be to a weight as a length to a length. This treatment of commensurability then seems to follow the Euclidean stipulation that only magnitudes of the same kind can be compared to each other in accordance with Euclid's *Elements* Book V, Def. 3: "A ratio is a sort of relation in respect of size between two magnitudes of the same kind," (2: 114). However, Def. 6 ("Let magnitudes which have the same ratio be called proportional") of the same book declares that magnitudes which are in the same ratio are called *proportional* (2: 114). So, while like must be compared to like, ratios can exist between sets of unlike magnitudes and those ratios can be compared against each other as proportions. As

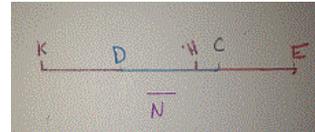
we learned in Freshman Math, as long as magnitudes of a kind stay on the same side of the proportion with each other then there is nothing un-Euclidean about Archimedes' proposition.

This will come into more focus as we go through the proposition.

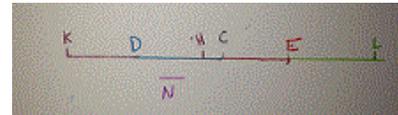
- Let N be a common measure of DC and CE .



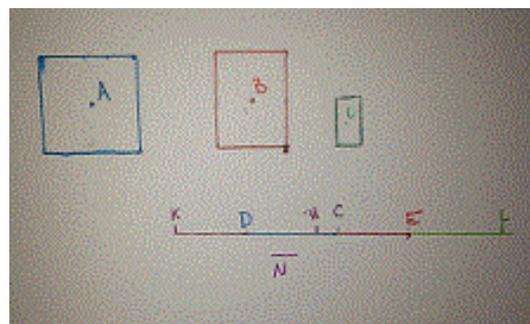
3. Make DH and DK each equal to CE .



4. Make EL equal to CD .



5. Now $EH = CD$ since $DH = CE$. Therefore LH is bisected at E , since HK is bisected at D .
6. Therefore, LH and HK must both contain N an even # of times.
7. Now, take a magnitude O so that O is contained in A as many times as N is contained in LH .



8. So, $A : O :: LH : N$. But $B : A :: CE : DC :: HK : LH$. Hence, *ex aequali*, $B : O :: HK : N$.

In other words, O is contained in B as many times as N is contained in HK . Thus O is a common measure of both A and B . The weights and lengths are, therefore, proportional, according to Euclid's Book V. Def. 6, as mentioned above (2: 114).

9. Dividing LH and HK each into parts equal to N, and dividing A and B into parts each equal to O, the parts O in A will be equal in number to those of N in LH; and the same will be true for B and HK.
10. Place the parts of A at the middle point of each of the parts of N on line LH (which was constructed on the original shorter CE), and the parts of B at the middle point of each of the parts of N on HK (which was constructed from the longer segment CD). Then, the center of gravity for the parts of A at equal distances on LH will be at E, the middle point of LH. The center of gravity of the parts of B will be at D, the middle point of HK.

Multiple things are happening in this last move. It is as if the centers of the bodies are suspended from, or are balancing on top of, points D and E, the original ends of the given line. We can thus see that when treating of bodies, we can treat their centers as being or representing the whole of the body. Further, this is where the move from the mathematical realm to the mechanical realm, and therefore to the physical, becomes explicit. In the givens, the mathematical and the physical rested side by side. Up to this point, we compared between them, but we still treated them as mathematically separated by the Euclidean notion of comparing like magnitudes to like.

This move, on the other hand, steps outside the bounds of that limitation into a world where all physical objects are in some respect of the same kind. Weight can be placed on length and made to balance another weight with another length. In opposition to the limitations of Euclid's ratios, magnitudes of different kind: magnitude (weight) A and magnitude (length) CE, are placed together on one side – the same side – of the balancing point, and magnitude (weight) B along with magnitude (length) CD are on the other. This is a physical, real-life, mixing of

ratios. Hence, we get the reciprocal proportion immediately below by alternation of magnitudes of unlike kinds.

11. Thus, A is applied at E, and B is applied at D, so that the two magnitudes, A and B, balance at distances reciprocally proportional to the magnitudes.

This physical equilibrium point of the mechanical experiment, point C, is the center of gravity of the formed system, as evident in Proposition 6. Finding equilibrium according to this proposition can thus be treated as finding the center of a system and making a unity out of previously independent bodies. But, since we can find the center of that physical system, we can also find the center of anything to which we can assign numeric value. This ability stems from Archimedes' physical and mathematical givens for Proposition 6. Euclid supports this relationship between magnitudes and the numerical as well. Book X.5 of the *Elements* demonstrates for us that “commensurable magnitudes have to one another the ratio of a number to a number” (Euclid 3: 24) and this in turn is built on Euclid's Definition 20 from Book VII: “Numbers are proportional when the first is in the same multiple, or the same part, or the same parts, of the second that the third is of the fourth” (2: 278).

Thus, measurement is intrinsically linked to our ability to assign numbers to those magnitudes which we measure. For Proposition 6, we can express this as Length 1 : Length 2 : Number 1 : Number 2 :: Weight 1 : Weight 2. By comparing the magnitudes to the same number relationship, we can then compare the relationship between magnitudes of one kind to magnitudes of another kind. It is obvious, then, that Archimedes is using the inherent relationship between measurement and number in his own proposition to great advantage in demonstrating the proportionality between magnitudes of different kinds.

This interchangeability also allows for greater flexibility with time, mass, length, and anything else we can treat with units of measurement. Further, all of the relationships drawn between the former three are those relationships that we perceive as making up our physical reality, such as velocity, density, volume, area, weight, and distance. Thus, from Archimedes' mechanical and mathematical experiment with the placement of length and weight together, we get a concept of compound units that can then be used to describe other functional relationships.

Finding equilibrium in those relationships then becomes finding the center of them, or finding balance. Proposition 6 shows that in any relationship between these various properties, an equilibrium is achieved by using the reciprocal, or inverse, proportion of one of the terms to the other. For example, a three-lb. weight on a one-ft. length will balance a one-lb. weight on a three-ft. length. When we take the reciprocal of anything to which we assign a numeric value, such as the above example, for instance, in treating them strictly as number: $3/1$ multiplied by $1/3$, the result is invariably one. Thus, we have shown that finding equilibrium is not only a way of finding equal forces acting upon bodies, or finding the center of two or more bodies but, quite literally, finding equilibrium is finding where the many become one.

What is astounding to me is that the necessity of equilibrium to the existence of all things was described in the modern day equivalent of one single book page by a man living over 2,000 years ago. People have made many adaptations since then, both to make work more efficient and to better explain specific systems, but they have no improvements to that original proposition. It is just as valid now as it was during the time of Archimedes' experiment. And from that experiment, it is readily apparent that everything in physical existence must be in some state of equilibrium, if not always so simple as the equilibrium of the lever, in order to continue to hold together as being. This is because the essence of a being resides in its singularity, its *unity*.

Hence, equilibrium is, and must be, built into the blueprint of our very existence. Equilibrium, of itself, is the form of which all other forms partake. It is that something which allows a thing, or a system, to maintain itself as what it is.

For Proposition 6, the equilibrium is relatively simple. The system equilibrates and can come to a perfectly balanced stand-still although it need not depending on the work performed. This is not the case with all equilibrating systems – such as the universe. If the universe can be considered a functional whole, holding together in all its parts, with all its parts affecting all of the others, then it should be possible to find a similar point of equilibrium, a center, about which everything moves in an ordered, if complicated, pattern. The key difference between this conjecture of universal equilibrium and Proposition 6, however, is that it is an equilibrating system rather than one at equilibrium. It is an *active* unity, a “*being-at-work-staying-itself*”, or *entelechy*, to borrow an Aristotelian term (81; par. 412a20-23). Everything found within that universal system can be said to be much the same.

Sir Isaac Newton provides us a readily accessible demonstration of the equilibrating principle in action via the planetary movements of the solar system. While superficially different in form, the equilibrium demonstrated by planetary orbit is not different in kind from the equilibrium of Proposition 6. Newton’s language even calls to mind that of Archimedes. His centripetal force is that force responsible for the drawing of a body from its rectilinear course into an elliptical orbit. It is the tendency of a body toward the center of another body (Newton 10). Hence, we are dealing with similar principles of centers as those present in the Lever Law. However, we now have the added complexity of both continued motion and equilibrium beyond the realm of a plane. Equilibrating systems thus become proportionately more complex.

In terms of the solar system, we have multiple bodies, the planets, equilibrating around the same central body, the sun. We can, however, essentially think of the planets as simple projectiles. Newton certainly does throughout the *Principia*. Thus, in their almost eternal motions, they are still obeying the same laws of motion as more terrestrial projectiles, such as the rock falling back to the earth from the mountain top. In other words, there are a number of physically describable forces acting upon the planets which cause their orbits to equilibrate in a specific manner. It is the continued equilibration of those forces, the *entelechy* of the planets' motions, over an extremely long period of time, which keeps them in orbit around the sun.

Considering just a single body, the first force we have is the rectilinear motion of the planet itself. That rectilinear motion is simply a quantity of motion characterized by velocity – a straight line distance traveled in one direction over a given period of time – and the mass of the body doing the moving, in accordance with Book I, Definition II in the *Principia* (9). Newton goes on to note in his first law that the motion of the body “*perseveres in its state... of uniform motion in a right line unless it is compelled to change that state by forces impressed thereon*” (19).

The second force operating on the planet is the continual gravitational draw of the sun. Newton tells us in Book I, Corollary I that circular motion is composed of rectilinear motions acting together: “*A body conjoined by two forces conjoined will describe the diagonal of a parallelogram, in the same time that it would describe the sides, by those forces apart*” (20), and continues the theme with Proposition 1. Theorem 1: “*The areas, which revolving bodies describe by radii drawn to an immovable centre of force do lie in the same immovable planes, and are proportional to the times in which they are described,*” (39) so that an orbit is actually the

continuation of a fall towards the idealized center, the sun.¹ The rectilinear force, spoken of above in Definition II of Book I, is thus modified by the gravitational force of the sun in accordance with Proposition II. Theorem II in Book I: *“Every body that moves in any curve line described in a plane, and by a radius, drawn to a point either immovable, or moving forward with an uniform rectilinear motion, describes about that point areas proportional to the times, is urged by a centripetal force directed to that point”* (41).

Newton’s proposition concurrently demonstrates the validity of Kepler’s second law that “the speed at perihelion and slowness at aphelion are very closely proportional to the lines drawn from the center of the world to the planet” (Kepler 52; ch. 32) in what is commonly thought of as the equal areas in equal times law. Newton’s demonstration of Kepler’s second law shows an equilibrium relationship already: the velocity of a body is inversely proportional to the radius from the center so that the closer a body is to the center the faster the body travels. The lever, in this case characterized by the sun’s gravitational force on one side, and the planet’s velocity (time that the planet takes to cut across a certain area) and distance (radius) from the sun on the other, has become more complex.

Analogously, if the sun is the fulcrum of the lever, the planet’s distance and speed are what are in proportion to keep the planet orbiting about the sun according to the equal areas in equal times law. In this case, however, the fulcrum has its own hand in the game via its gravitational force. This force, determined by the sun’s mass, is actually what is being equilibrated by the speed of the planet and its distance from the sun in order to maintain the planet’s orbit. Newton is able to show via Proposition 4. Theorem 4: *“The centripetal forces of bodies, which by equable motions describe different circles, tend to the centres of the same*

¹ We know that the sun is not the veritable center but, for Newton’s model and predictive purposes, treating it that way works much of the time.

circles; and are one to the other as the squares of the arcs described in equal times applied to the radii of the circles,” that the comparison of the force from the sun acting on two separate bodies is inversely proportional to the distance those bodies are to the sun squared (43). Written in Euclidean proportions, that statement looks thus: Force on Body 1 : Force on Body 2 :: Arc 1²/radius 1: Arc 2²/radius 2, so that force is directly related to the square of the arc of the planet and inversely related to radius of its orbit. He takes this a step further with Corollary 6 of the same proposition, in what is commonly known as the inverse square law: *“If the periodic times are in the sesquiplicate ratio of the radii, and therefore the velocities reciprocally in the subduplicate ratio of the radii, the centripetal forces will be in the duplicate ratio of the radii inversely”* (44). In other words, the force is reciprocally proportional to the radius squared.

That proportion is the result of the sun’s gravity extruding outwards in a sphere. The system is no longer planar but, rather, spherical because the attractive force is spherical. The result of this is that as the distance from the center increases the force decreases exponentially because it is spread over a surface area that increases exponentially (Newton 44). So, the attraction of a planet to the sun at double the distance of a closer planet is drawn on by only a quarter of the force. Thus, the strength of the gravitational force on the planet equilibrating with the always maintained ratio of the speed and distance of the planet determine the orbit.

This relationship has since been generalized to the equation: $T^2/R^3=4\pi^2/G(M \cdot m)$. T^2/R^3 comes to us from Kepler’s 3rd Law, discovered after the writing of *Astronomia Nova*. The 3rd Law dictates that the square of the orbital period (T) of a planet is proportional to the cube of the orbital radius (R). Newton used the 3rd Law to demonstrate the inverse square law in Proposition IV, Corollary VI and then showed its application to the ellipse in Proposition XV: *“The same things being supposed, I say, that the periodic times in ellipses are in the*

sesquiplicate ratio of their greater axes” (57). The general equation notes that T^2/R^3 equals a constant, namely $4\pi^2/G(M \cdot m)$. We have the sun’s force of gravity, along with the planet’s, both determined by their respective masses (M and m), in addition to the universal gravitational constant (G). The constant G is approximately $6.674 \times 10^{-11} \text{ N m}^2 \text{ kg}^{-2}$. This constant was not available to Newton at the time of the writing of the *Principia*, but the later addition of the constant only solidified Newton’s work in showing the equilibration of the forces responsible for keeping the planet in its respective orbit. In order to keep a planet in orbit about the sun, a body with a specific gravitational force, the velocity of the planet must change in proportion to its distance from the sun. That is, force is proportional to the compounded mass of the bodies drawn together and inversely proportional to the square of the distance between the bodies. This proportionality is just such to continually pull the planet from its rectilinear motion into a continued accelerated fall towards the central body.

The general equation itself functions as a sort of lever. The relation T^2/R^3 is a fixed one whatever the values of T and R . The Gravitational constant is a fixed value as is $4\pi^2$. The only things that are variable in the equation are the masses of the two bodies attracted towards one another. Thus, as the mass of those bodies changes, the values of T and R must change in kind to keep the T^2/R^3 proportional. Hence, the mass of the bodies, particularly the central body, no different than the centripetal force, are equilibrated by the distance of the planet from the sun and the inverse square of the time it takes the planet to go around the sun in order to keep the planet in its specific orbit. In this lever-like relationship, we therefore have the relation of *two sets* of forces being equilibrated for the result of a regular orbit.

The very same inverse square law that applies to gravitational force shows up in all sorts of physical, energetic, and electromagnetic relationships. Chemical equilibrium is a dynamic

equilibrium quantifiable by the reciprocal proportion. So is traveling sound, the brightness of light, magnetic attraction and radiation. Solid bodies in water equilibrate, as do mixed gases, and mixed liquids. And we cannot forget heat, thermodynamics, or the conservation of matter and energy. Anything and everything that you can think of, if it has a physical or energetic presence in this universe, is equilibrating or at equilibrium with its surrounding environment. You are no exception.

In fact, equilibrium is such a necessary condition of life that we humans were hypothesizing it even before we had the tools and the scientific understanding to demonstrate its effect on our existence. Before Archimedes and his Proposition 6 we had the Platonic Socrates and all the works of Aristotle. I hazard a guess that the concept had been around long before either of them, as well. In light of that longstanding Greek preoccupation with balance, I would like to take us in a more metaphorical and symbolic direction with our understanding of equilibrium, but always keeping in mind that this metaphorical understanding is intrinsically linked to the physical phenomena of balance and equilibration.

The Socratic dialogues, particularly the *Timaeus*, are simply full of equilibrium accounts of existence, and they do a wonderful job in bridging the understanding between purely physical equilibrium and a more metaphorical understanding. This is partly because, for the Greeks, the understanding was decidedly not metaphorical. When Plato and Aristotle wrote of the soul being in balance, they were quite literally stating that the soul must be in a specific, mathematical ratio. Aristotle's *Nicomachean Ethics* gives plenty of examples naming the golden mean as that between two extremes, and Plato's dialogues refer again and again to the correct balance in the governing of the soul and of cities. While many might be dismissive of equilibrium in literature and philosophy as only pertaining to relationships in a figurative sense, I would argue that literal

and figurative interpretations of equilibrium are not so different in these two disciplines. Indeed, the metaphorical simply provides additional demonstrations of equilibrium: different in form but the same in roots.

Exploring the *Timaeus*' universe creation account in detail, we find an explanation preoccupied with proportion and harmony. From the universe to the human soul, creation is governed by cascading sets of nested and equilibrating equilibrations. The equilibrium present becomes manifold and complicated, but that complexity is both rich and purposeful. It provides the notion that our different manners and levels of equilibrating depend on one another and are, to some extent, hierarchical.

The *Timaeus* starts as a dialectical payment to Socrates for his conversation about the just city from the day before. Socrates, inquiring what the just city would look like in action during times of peace and times of war, set the task of describing it to Critias, Timaeus, and Hermocrates. What, essentially, would be the unifying theme of the city's behavior based on its education, he asks? But, in order to do justice to the task and answer properly, the young men say, they must start at the beginnings of the universe and build up to the creation of man and beyond (Plato 58; par. 28A). It is of note that the unifying theme itself serves as one around which the just city equilibrates. In addition, the creation of the universe and the relationship of its parts to each other provides a pattern, a unifying theme, around which the relationship of man to man, and thus man to city, is built. Perhaps that is why the creation of the universe must be surmised by Timaeus in order to effectively treat of justice among mankind.

Timaeus would begin the dialogue with the "birth of the world and end with the nature of man" (Plato 57; par. 27a). But before Timaeus begins, Critias tells Socrates the story of the Athenian conquest of Atlantis. Critias declared it to be a tale told to Solon, the famous Athenian

lawmaker, by Egyptian priests, and passed down to his grandfather before finally being told to him. It is the story of a story and he suggests that the events of ancient Athens and the demise of Atlantis could be used as a stand-in for the actions of the just city under discussion. Socrates and the three debtors agree.

The dialogue momentarily diverges in the telling of the Atlantis tale, however, and the very priests that are supposedly telling the story to Solon also impart to him that any tale told, be it of Atlantis, or any other folklore story offered as explanation, is just a stand in to explain events and phenomena that are beyond the scope of the human mind to answer. Timaeus, in a parallel declaration at the start of his universe creation tale, emphasizes the aspect of stand-ins. His account of the creation of the universe, he declares, must be accepted if no other explanations of equal or better value are offered. But all the same, the account was still just a likely story, a stand-in explanation for events that could never be directly examined by humans. Timaeus admonished his listeners to remember this “likely story” status throughout its telling.

Timaeus’ story opens with given postulates, much like Euclid’s *Elements*. The first postulate is one that differentiates between being and becoming (Plato 58; par. 28A). As such, we must assume something of beginnings and endings and what those categorical boundaries imply about the *essence* of a thing. “The one is grasped by intellection accompanied by a rational account, since it’s always in the same condition,” Timaeus says (Plato 58; par. 28a). This, for Timaeus, is a definition of being. One can surmise, then, that as being (being as verb, as an always *is*) is unchangeable, it has no beginning nor ending. Unchanging, by its nature, suggests continuation without end. It always just *is* eternally. Hence, this real thing, whatever it may be, has no part in what is described as becoming: “but the other in its turn is opined by opinion accompanied by irrational sensation, since it comes to be and perishes and never genuinely *is*”

(Plato 58; par. 28a). That which is always becoming – and anything that has a becoming is always becoming – is never real. Our bodies, for example, or anything of any physicality, are categorically not real for Timaeus.

Timaeus' second postulate asserts that if something has a becoming, it must also have a creator, a something responsible for the creation of its coming to be. Timaeus states for his audience, “Again, everything that comes to be, of necessity comes to be by some cause; for apart from a cause, it's impossible for anything to have a coming to be” (Plato 58; par. 28a). This second postulate sets up a dependency between the relation of being and becoming. Becoming must always rely on that which is, *Being*, for its existence as such.

The third postulate finally names the cause of things coming to be as something with agency, the “craftsman,” as it were (Plato 58; par. 28b). This third postulate goes on to state that for created things, the creator can use as a model that which is real and unchanging or that which is unreal and always changing. Timaeus claims that the thing based on the real and unchanging will be good and that based on something unreal and changing will be bad (Plato 58; par. 28b). So, with these three postulates in his philosophic pocket, Timaeus asks a basic question of the universe: has it always been or did it come to be (Plato 59; par. 28c)?

On the evidence of touch-based sensation, he swiftly concludes that the universe has come to be and thus, necessarily, has a creator – a “poet and father” with agency and eternal being (Plato 59; par. 28c). Thus, Timaeus turns to examining the nature of this creator, the craftsman, for clues as to the nature of its work. In addressing the craftsman's nature another, fourth, postulate comes into play. As an eternal *Being* the creator must be good (Plato 59; par. 29a) and therefore must have made the universe, in accordance with that principle of goodness, on an eternal model, though the universe itself is impermanent. Hence, the cosmos, even as it is a

created, unreal thing, is as good as it can possibly be; it is the best possible because it is the most like the eternal craftsman (Plato 60; par. 30a).

In just this beginning, it is already apparent that not only is there a strict dichotomy between real and unreal in the things that are and the things that become, but also, and perhaps more importantly, these two ways of being must exist together in some sort of balance. The eternal craftsman, which has no becoming, must have a way of setting up a non-eternal creation based on an eternal model. In other words, Being and Becoming must be set in some sort of equilibrium.

Timaeus, the storyteller, provides an analogous proportion to demonstrate this needed balance, emphasizing both the nature of being and the nature of his philosophical creation myth: “As Being is to Becoming, so is truth to trust” (Plato 59; par. 29d). Again, there is the emphasis by Timaeus that the *Being* is reality, whereas that which becomes is unreal. *Being* is of the same type of infiniteness as truth, while becoming is characterized by trust, or belief, alone.² The proportion also makes apparent the idea of balance that sets the two, *Being* and becoming, together into a unified system. A kind of equilibrium resides here— a meeting of connective tissues where the two are not entirely separate or distinct from each other but come together so as to create one cohesive system.

It is just this system that Timaeus is describing when laying out the givens of his universe creation. He is making of two or more individual things, *Being* and becoming, one system via some explanation of equilibrium. This equilibrium can be thought of almost as a

²With this differentiation, Timaeus’ tale of Atlantis and the exhortation about remembering that everything is just a likely story finally makes sense. We, as created beings, only have belief. Via his Being : Becoming :: truth : trust we see that we can never have truth because we are things that become. The best we can do is conjecture and have “beliefs” about the way the world is. Thus, we must treat Timaeus’ story with the same understanding of our limitations. His story can only ever be a “likely story.”

mean proportion. If we can find the mean between being and becoming, between the eternal and the always changing in Timaeus' universe creation, then we can study the architecture of its very existence. Essentially, we are again looking for that Archimedean center that makes the lever function as one unit.

First, however, we must reconsider that the eternal craftsman holds everything. For the universe to start, according to Timaeus, there must have been something external to hold all of the pieces together until they were formed well enough to hold together themselves. Timaeus' universe requires this agency. The craftsman, then, can be seen as the externally provided source of equilibrium for the created universe. Thus, the first equilibrium in the universal system is that of the will of the creator. This creator, or craftsman, as already mentioned, is a given for Timaeus, and the universe relies on this craftsman for its existence due to the self-explanatory relationship between creator and created thing. But unlike a pot and a pottery maker, the relationship between creator and created is ongoing. In this way the universal craftsman holds and *is* the eternal balance by which the universe exists and has form.

In fact, this first external equilibrium is perfection. It is unchanging in that the Greek conception of perfection, of eternal *Being*, is one of a static sort of existence. It is eternal, ongoing, with no beginning and no end. It is eternal *Being*. There is no equilibrating into one system. The quality just *is* and as such has always been. It is *equilibrated*. The craftsman epitomizes this ideal. The divine craftsman posited by Timaeus is not subject to the dynamism that characterizes those things that become. Instead, its state of being would be such that the lever is always balanced. In fact, it is patently impossible for it to be unbalanced because its eternal system can never go in and out of existence unlike the state of the universe and mankind.

As such, a part of the universe's character fits the Greek, or at least the Platonic, ideal of eternal unchanging perfection. Otherwise, it could not have come to be.

So, the universe is held exteriorly by perfection, the Platonic ideal of perfect balance. However, as a created thing, this universe is composed of an imperfect, changeable body. To offset that imperfection, and as the best possible created thing, the universe was molded to be beautiful and as close to eternal as possible in all its aspects. As such, the craftsman endowed it with its own order: a self-sufficiency and self-regulation of being that carries on without the creator's constant input. "For since he wanted all things to be good and ... nothing to be shoddy, the god thus took over all that was visible, and, since it did not keep its peace but moved unmusically and without order, he brought it into order from disorder..." Timaeus informed his audience (Plato 60; par. 30A).

In essence, the Creator set up an Archimedean lever that balanced the opposing characteristics of the created world on opposite sides. On the one side, there is the material, always becoming substance from which the universe is composed, the body. This body is nebulous and unreal. It always changes and has no lasting form or existence. But in keeping with the given postulates, this created universe, this body becoming; but as a likeness of being, it must also be the best created thing; hence, it will also have the characteristics of *Being*. Just so, on the opposite side of the lever, the Creator has provided the universe with that which bestows eternal being upon an imperfect, non-lasting embodied thing (Plato 59; par. 29b). Thus Timaeus' universe is maintained by multi-layered equilibrium. One could call it a closed, self-equilibrating system – a universal ecosystem, in fact. It was precisely because of this self-contained equilibrium and self-regulation that the universe was made without the sensing faculties: "for the animal was artfully born so as to provide its own waste as food... and to do

everything within itself and by itself, since he who put it together considered that the animal would be much better by being self-sufficient than in need of other things” (Plato 63; par. 33d).

Hence, in our mean proportion between the eternal *Being*, this craftsman, and its created creatures, we are looking for something that puts into order the relationship of *Being* to becoming, while also able to change and equilibrate in a manner unlike that of eternal *Being*, so that order can continue self-sufficiently. The first mention of this thing which bestows being on that which is becoming, the equilibrating principle, has to do with intelligence. Timaeus states of his craftsman:

“He discovered that of all things visible by nature, nothing unintelligent will ever be a more beautiful work, comparing wholes with wholes, than what has intellect; and again, that it’s impossible for intellect apart from soul to become present in anything. Through this calculation, then, by constructing intellect within soul and soul within body, he joined together the all so that he had fashioned a work that would be most beautiful and best in accordance with nature. So then, in this way, in keeping with the likely account, it must be said that this cosmos here in truth was born an animal having soul and intellect through the forethought of the god” (Plato 60; par. 30B).

To quickly recap, the universe, being as best as it could be, was fashioned with intelligence. But in order for it to be intelligent, the craftsman had to give it a soul. And here, with little fanfare, Timaeus has granted us our mean proportional, the equilibrating principle of his whole universal system: the soul. The soul is that which provides the material, becoming, universe with that of the eternal, the intellect. We get a typically Greek duality: the body versus the intellect. The soul is required to unite them and is that which animates creatures of becoming with traits of *Being* in accordance with the proportion *Being* : Soul :: Soul : Becoming.

It is this soul which connects the eternal nature of the craftsman and his eternal model to the transient characteristics of the unreal, physical universe. It is this soul which provides the architecture on which Timaeus’ universe is built. It is the keystone, the hitching post, the

equilibrating principle, the *entelechy*. Indeed, in this philosophical creation myth, and in the larger Greek world of universe, life, and human creation, it is the soul which holds everything in existence together, all descending from the intelligence of this first and best created thing: the universe. The universe is an *ensouled* thing. But, as Timaeus reminds us, with a soul, one is considered alive. “So then, in this way, in keeping with the likely account, it must be said that this cosmos here in truth was born an animal having soul and intellect through the forethought of the god” (Plato 61; par. 30b).

Hence, the universe was created by the Eternal Creator as a living, intelligent, versatile being-in-itself. Timaeus states,

“Let us set down the following about the cosmos. Among all animals, it’s the one most similar to that of which the others, individually and according to kind, are parts. For that one, having embraced all the intelligible Animals, holds them within itself, just as this cosmos holds and embraces us and all the other nurslings constructed as visible. For since the god wanted to make it as similar as possible to the most beautiful of things intellected and in all ways complete, he constructed it as an animal visible and one, holding within itself all those animals that are akin to it according to nature” (Plato 61; par. 30c-d).

Implicit within this part of Timaeus’ creation account hides more than one related gem. As already stated, the universe itself has a body and a soul and must be considered alive and intelligent. But within that is the necessary consequence that the universe, being ensouled, and therefore intelligent, must now also have an existence unto itself separate from the conscious existence of the craftsman, even as its physical nature necessitates the unreal character of a becoming thing. That character of the universe must now be twofold with two distinguishable and distinct types of equilibrium operating in favor of its continued existence. First, in that it is created and has a becoming, the universe must be considered unreal. The existence of it is temporary and any equilibrium that existence has as a physical thing is not a lasting, eternal

equilibrium. Rather, it must always be equilibrating its physical parts with itself in order to stay as a unity. But, as an intelligent and ensouled thing within itself with the capacity for reasoning, there is also present in the universe the real and eternal by means of that equilibrating mean proportional, the soul.

The beauty of Timaeus' organization lives in its multi-layered and equilibrating nature. Like a coneflower with its infinite layers of unfolding papaya-colored petals, the remarkable hierarchical organization of physical becoming life, mediated by the presence of eternal soul, continues down from the cosmos, through the creation of the heavenly bodies, the more commonly known pantheon of Greek gods, and on to plants and animals, all of them having actual life and being originating in and dependent on the harmonic soul of the universe.

This is, in fact, a statement about the very natures of life, the universe, and everything. Their natures are all of the same order, if existing at different hierarchical levels. All of the levels are connected and exist in equilibrium with the next highest along with existing in harmony of self and with the next lower level. And again, their separate existences and unity of entelechy all derive from the life of the first created object – our cosmos. But more importantly, their lives, their equilibrium of being, are all derived from what gave the cosmos life; that is, the soul.

The preoccupation with our status as a created thing with a divine, omniscient, and conscious maker, is of course not limited to Plato alone. Even Newton, providing the structural “how” explanation in the *Principia*, still postulated an eternal creator as the why (440). That relationship between the creator and the created in the balance pervades, in a sense, all major religions with a creator God. Judaism and Christianity are but the two most ready examples. These two are also distinctly marked by having some conception that the relationship between

God and those created in God's image must also have its proper balance. The Old Testament even gives specific instructions on how to shift that relationship back to the right balance. And, when things are so far out of balance that humanity could not possibly have righted itself, a special type of equilibrium is made so as to fix the imbalance almost permanently. But I am getting ahead of myself.

“In the beginning God created the heaven and the earth” (*The Bible: Authorized King James Version with Apocrypha*, Gen. 1:1). This is the opening of the King James Bible detailing the creation of the universe, the world, and everything in them. Of note is that the beginning of creation starts with a Creator: God. Timaeus and this new story have their first postulates in common: they rely on an agent external to the created thing, and even Newton recognizes an external agent. There is here again static and unchanging equilibrium: a perfect being lending its creative powers and moving principle to a created other. So far, this is no different than *Being* and becoming.

In the Bible, each day that God builds the Creation is one of separation into parts such as Day and, its opposite, Night. These two pieces together make a whole of something. In the case of Day and Night, together they make up what we call a complete day. God makes the same relation between the earth and the Heaven; then again between dry land and water. All of this is done by their coming into a specific relationship, or ratio, one part to the other, with each other. From this implicit equilibrium springs life in the form of the grasses and fruit trees of the earth (Gen. 1:1-31).

God further made lights to further divide seasons and days and years. Again, there are relations and tensions between each other, one season flowing into the next, day flowing into night, the time of the sun into the time of the moon, one to another in constant flux. With the

creation of the animals on the fifth day, those of the air – the birds – and those of the seas – the fish and whales – are again both separated from each other and form a functional equilibrium because they relate parts of life on earth to each other. The sixth day saw the same type of division among the living things of the earth. The beasts and all crawling things were created. And then came humans. Humans were made in the image of God (Gen. 1:26). With the creation of humans we again see a parallel between the real and unreal worlds in the *Timaeus* and the relationship between God and humanity. God is what is real and eternal and unchanging. Humans are the copy, but the very best copy, formed as they are after a divine template. (Gen. 1:27).

The further division into male and female carries on the theme of creations being separate but also making up one whole system. To the copy, God gave dominion over all the earth, “Be fruitful, and multiply, and replenish the earth, and subdue it: and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth” (Gen. 1:28). But, for food, God gave the humans only “every herb bearing seed” (Gen. 1:29). It is of note that humans were not originally eaters of meat, but instead God gave instructions to only eat of the herbs and the trees bearing fruit which produced seed. To the cattle and other animals, God gave every green herb. There is a relation here, too. The story of the biblical creation is an explanation story for why things are the way they are; thus it takes equilibrium into account in that the equilibrium relationships that exist amongst all the parts of creation were first installed by an all-caring and Compassionate God just as in the *Timaeus*.

Thematically, the relationship of parts to parts is all over the biblical creation account. God formed man, that which was to be the most dominant, of the dust of the ground, the smallest and lightest of materials around. Dust equilibrated, by God’s design, into the life of humans

(Gen. 2:7). And in the dust is the first mention of the biblical soul. “And man became a living soul” (Gen. 2:7). But along with the soul came a caveat to the statement that man could eat of all the trees; mankind could eat of all the trees except that of the tree of knowledge of Good and Evil. In giving them souls, God set limits on relationships for the first humans. There were things they could do in the creation, and things they were forbidden. To do what was forbidden would be to step outside of the ratio God set up between himself and his creation.

Further instructions on the relationship of parts of humankind to itself also come to light in the Genesis tale, such as the relations of man and woman: “Therefore shall a man leave his father and his mother, and shall cleave unto his wife: and they shall be one flesh” (Gen. 2:24). This is an explicit equilibrium in that it is the creation, out of two separate beings, of one whole. This example takes on both a literal and a metaphorical sense. The union of man and woman produces, quite literally, a new creation. A whole results in the form of the child. Both parts of this lever are needed for the new system to come about. But metaphorically, and actually, the relationship between them is the culmination of human relationships. In respect of it, “a man shall leave his father and his mother, and shall cleave unto his wife: and they shall be one flesh” (Gen. 2:24). The balance and importance of that relationship is paramount. Together, they shall be as “one flesh.” There is scarcely another example as powerful and multitudinous in the Bible, with the notable exception of the relation of humankind to God himself. That relationship is continually characterized by the need to equilibrate.

However, we cannot forget that this relationship between creator and created stayed virtually the same until the Fall, when the serpent persuaded the woman to eat of the forbidden tree in opposition to God’s will. Since everything previously existed inside God’s will, as noted above, this excursion outside it represents both the independent existences of the creatures

created and also represents a tremendous disjunction in the symbolic equilibrium relationship that existed between God and mankind. The woman traded obedience for wisdom, for the snake said the fruit would make her wise and like God (Gen. 3:6), and thus broke with the relationship that existed between her and God up until that moment.

Some traditions will tell you that this is the first sin, the original sin visited upon all children thereafter, but nowhere in the Bible does this term, “original sin,” appear. Instead, what God decrees is that the disobedience of Adam and Eve must be made right and he takes immediate steps to right it, including the punishment of the serpent (“because thou hast done this thou art cursed above all cattle”), the woman (“in sorrow thou shalt bring forth children”) and Adam, (“cursed is the ground for thy sake; in sorrow shalt thou eat of it all the days of thy life”) (Gen. 3:14-17). But even beyond these punishments, the relationship between God and those made in his image changed irrevocably.

To remove the possibility of their living forever, he removes the pair from Eden. He makes coats of skins to clothe them. This is the first time other things must die for the sake of Adam and Eve, who is finally named as the mother of all living things. But in being so named, it is her disobedience and Adam’s that requires the death of other created things. Something must be done for them that was not done before. God makes a sacrifice of other living creatures for their sake and, from this point forward, sacrifice comes to be a major facet of the relationship between God and humans.

It is for the sake of the spurned fruits of the earth sacrifice that Cain kills Abel. And it is through these acts of violence that the violence of Noah’s time came to be. Because of the instability created by Cain in the violent murder of his brother, due to jealousy over his brother’s accepted sacrifice, and hence, balanced relationship with God, the earth became untenable to that

very God. It is for this lack of equilibrium that God flooded the earth. He destroyed that which became unbalanced in favor of a new world, characterized by a new relationship with God.

That new relationship is in very large part defined by sacrifice. One can no longer walk with God in the direct manner of Adam and Eve, for God no longer walks in the Garden among his creations. Even Noah, to whom God talks directly, must send up sacrifices to God when the flood ceases. He kills one of every clean beast to give thanks to God. And God smells the sweet savor of flesh and makes the promise that no more shall he curse the earth for man's sake (Gen. 8:21).

This is a marked change in the relationship between God and humanity. Never before had humans to do anything to appease God. Now, with sacrifice, a new mediator has been introduced with sacrifice. God also gives updated instructions to Noah with this new earth and new relationship. He says, "Every moving thing that liveth upon the earth shall be meat for you. But flesh with the life thereof, which is the blood thereof, shall ye not eat (Gen. 9:3-4). Man, then, in God's updated world, can now eat animals. Along with the relationship to God, the relationship of humanity to the earth has also changed.

But life, that life given by God, and represented in the blood, is not for humans to eat. Indeed, it is after the first sacrifices that God now requires sacrifices – or rather, the blood thereof: "And surely your blood of your lives will I require; at the hand of every beast will I require it, and at the hand of man; at the hand of every man's brother will require the life of man" (Gen. 9:5-6). This is a consequential relationship, and thus one of a certain type of leveraged equilibrium; that humans are now able to eat all of the animals and spill animal blood to God consequentially necessitates that God also requires human blood. The balance of the lever

is preserved in the “this for that” consequential relationship of man to God and the rest of God’s creation.

This idea of balance and equilibrium in the human relationship with God is then preserved throughout the rest of the Old Testament. Abraham’s relationship to God is put to the test through God’s command to sacrifice Isaac. Abraham did not attempt to modify that balance and was thus able to continue in God’s good graces. This is perhaps one of the most iconic and dramatic of portrayals of sacrifice in the Bible: “my son, God will provide himself a lamb for a burnt offering” (Gen. 22:8), but the clarity with which we are to view sacrifice, as a restoration of a balanced relationship with God, is probably more apparent in the instructions to Moses, found in Exodus and Leviticus. After the Passover, the Lord requires that all the firstborn both of animals and of humans, be consecrated to him. That is, they are to be sacrificed (Ex. 13:1-15).

The instruction of consecration is laid upon the people of Israel as recompense for the Passover, when God slaughtered all of the firstborn of the Egyptians and spared the Israelites due to the mark of blood that was on their houses. Thus, God now demands that those firstborn are his. He spoke this to Moses:

“...when thy son asketh thee in time to come, saying, What is this? That thou shalt say to unto him, “By strength of hand the Lord brought us out from Egypt, from the house of bondage: And it came to pass, when Pharaoh would hardly let us go, that the Lord slew all the firstborn in the land of Egypt, both the firstborn of man, and the firstborn of beast; therefore I sacrifice to the Lord all that openeth the matrix, being males; but all the firstborn of my children I redeem” (Ex. 13:15).

This redemption of firstborn children is a literal buying back from God. In place of the child, another, a lamb, might be offered. The redeeming and the original requirement for the redemption balances the task done by God for the Israelites. In payment for the Passover, all firstborn belong to God are thus to be sacrificed to him. Children must be redeemed so as to

continue to live. The debt must be paid. Thus through the balancing out of payment and debt, humans achieve a correct equilibrium and balance in their relationship with God.

The act of sacrifice as a method of balance, rapport, and approaching God becomes so important and integral to the Israelites way of life that a special altar is built on which the sacrifice is made. The altar sits at the front of the tabernacle, where lies the presence of God. When men come to give sacrifice, they approach the opening of the tabernacle and are therefore both literally and figuratively drawing near to God with their sacrifices (Ex. 40:6; Ex. 40:35-38).

God also gives specific instructions for humanity's relation to the divine and maintaining the proper equilibrium. The book of Leviticus details those instructions passed to Moses to be passed on to the people. By and large the first seven chapters demonstrate the correct way to sacrifice to God via offerings of various sorts. The sin offerings and those offered when a person has become unclean are for the express purposes of atonement. The animal or other offering becomes the fulcrum through which the offering person can approach God. The uncleanness passes from the person to the animal through touch and then in burning is sent up to God who accepts the sacrifice through the priest (Nagasawa).

This ceremony of atonement, of remaking or maintaining things aright, is carried out in the name of making a person clean again and worthy of a relationship with God. The blood, which is the life, of the offered animal is then holy and can be used to then cleanse both the body and other physical objects (Nagasawa). In offering atonement a person is therefore seeking to attain the right equilibrium with God again and has acknowledged their part in removing balance. The subsequent purity of the person and acceptance of the sacrifice by God are visible signs that the right balance in the relationship has been attained.

In the New Testament, the death of Jesus is a repetition of the sacrificial relationship. He is called “the Lamb of God, which taketh away the sin of the world” (St. John 1:29) and 1 Peter 3:18 reads: “For Christ also hath once suffered for sins, the just for the unjust, that he might bring us to God, being put to death in the flesh, but quickened by the Spirit.” Jesus literally serves as the pure sacrificial animal spoken of earlier as atonement for the sins of a human population so out of balance that they are in danger of irrevocably defiling their relationship with God. Jesus’ sacrifice, as the son of God, is such a willing and valuable sacrifice that it effectively atones for the sins of humanity for all of time (1 John 2:2). Accepting that sacrifice as made on their behalf returns humans to a state of equilibrium with God, or at least to a state where they are able to work for their own equilibrium with prayer and through good action.

Even in the language of the Bible there is an emphasis on equilibrium and balance, usually through the lens of just action. Proverbs 11:1 expressly addresses the importance of balance to God: “A false balance is abomination to the Lord; but a just weight is his delight.” And again there is a repetition of literal and metaphorical ideas so present in our examination of equilibrium. Literally, this passage states that a balance, the tool used for weighing out goods, should not be false. One should treat others with integrity. Your balance should be just. But, in the larger context of the biblical message as a whole, to be righteous and to have integrity is to be balanced. To be just is to be balanced. To be out of balance, or to falsely pose as balanced, is an abomination. “The integrity of the upright shall guide them: but the perverseness of transgressors shall destroy them” (Prov. 11:3). In God’s eyes, the balance, the system, is destroyed due to injustice. In true form, the continued message of the bible is one of balance and justice.

Maintaining a just relationship with God and with your fellow humankind is the maintenance of an appropriate equilibrium just like the balancing out of weights on Archimedean

levers. We are to God in the relation of our sacrifice and our repentance of the actions that took us away from God. As beings, images, created by God, we are continually seeking this equilibrium, this acknowledgement of the appropriate relationship with God and with our fellow humans.

But we are, in fact, seeking equilibrium in all of its various forms - mathematical, physical, and spiritual - through our relationships with those around us. Even those associations which are strictly transactional are still held in and viewed within the light of maintaining appropriate balance in the give and take and exchange of goods. While relationships of a closer and more intimate nature are more complex to describe, they hinge on equilibrium and balance even more stringently. To fall out of that balance, or to deliberately let it go results in destruction. Whatever our religious beliefs, the larger overtone of the biblical message, maintaining a just society, treating others with compassion, and continuing to seek balance in our relationships, is a lesson for all of humanity, because equilibrium, in so many forms, pervades and makes possible our lives.

This paper is far from a complete treatment of the concept of equilibrium or even of this topic within the discussed works. It substitutes breadth for depth and moves along at a pace that barely does justice to its intended purpose. It moves from topic to topic, each with an apparently different focus, pulling at and towards seemingly different ends. Indeed, physics will tell you that the inverse proportion and the inverse square law come about out of the laws of conservation: Of momentum, of torque, of energy. Whatever it is under examination, that thing equilibrating is what is being conserved. Biology and chemistry will tell you the same with different words and a slightly different focus. Religion will point towards the relationship between you and your God, whatever that relationship might be, and tell you to make it right. If

that relationship is right, then you are as you should be. Politics and government will push a balance of power and then not care where you fall in that balance. But philosophy will encourage you to examine it all and how it comes together to make the One out of Many. And so we end where we begin: with the Archimedean proposition demonstrating that out of multiple parts comes a simple, single unity.

Look around you at this unity. Stop. Take a single, breathless moment to notice the exquisite interwoven thread of being of which you are part. Look around you. Take a moment to truly see the truth and beauty you have been searching for all your life. You are living it. You are being. You are the scales of justice. You are equilibration in action. You are this universe. Take a moment. Notice who you are.

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*See Douglas Adams' compilation *Hitchhiker's Guide to the Galaxy* including the story "Life, the Universe, and Everything." You really cannot go through life without reading this book.