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THE MANUFACTURE AND SALE
OF
SAINT EINSTEIN

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15 "THEORY OF RELATIVITY" OR "PSEUDORELATIVISM"?

The Theory of Relativity is in fact a theory of absolutism based on the absolute speed of light, the absolute laws of Physics, and an absolute "space-time". The relativity of space, time and motion was known thousands of years before Einstein was born. Einstein forever failed to grasp the real meaning of relativism.

> "Einstein's theory of relativity is a misnomer, it should be called a theory of absolutivity."—WALLACE KANTOR

15.1 Introduction

It is not surprising that advocates of the "theory of relativity" often exhibit adolescent behavior. The theory attracts people who are prone to hero worship, and who are willing to accept authority over logic, and cartoon-style Metaphysics over rigorous science. The theory of relativity contains numerous fallacies of *Petitio Principii*. It is difficult for many people to learn, because they realize that they are being taught unproven assertions, as if facts which compel a change in fundamental beliefs. Those who overcome these hurdles by deluding themselves believe that they have joined an elite club of initiates, who have the right and the duty to ridicule non-believers.

Consciously or subconsciously a large proportion of these zealot believers realize that they have been duped and are perpetuating a mythology. They relieve their sense of insecurity by condescendingly and cowardly lecturing those who disagree with them, knowing that rebuttals to their attacks will likely be censored from publication. One of their favorite methods of self-glorification is to pretend that Albert Einstein created the notion of relativism and removed absolutism from Physics.

They are wrong on both counts. There were many ancient relativistic theories. The "theory of relativity" is in fact an absolutist theory, and it is more absolutist than most of the theories of absolutism which preceded it.

15.2 The "Theory of Relativity" is an Absolutist Theory

In one sense, the so-called relativists'—they aren't truly "relativists", as Minkowski noted,

> "This hypothesis [length contraction resulting in light speed invariance] sounds extremely fantastical, for the contraction is not to be looked upon as a consequence of resistances [*sic*] in the ether, or anything of that kind, but simply as a gift from above [***] [T]he word *relativity-postulate* for the requirement of an invariance with the group G_c seems to me very feeble. [***] I prefer to call it the *postulate of the absolute world.* [***] Thus the essence of this postulate may be clothed mathematically in a very pregnant

manner in the mystic formula $3 \cdot 10^5\ km = \sqrt{-1}\ \text{secs.}$"[3317]

Samuel Alexander held that,

> "[I]t is clear that Space-Time takes for us the place of what is called the Absolute in idealistic systems. It is an experiential absolute."[3318]

Max Planck stated,

> "Einstein's recognition of the fact that our Newtonian-Kantian conception of space and time possesses in a certain sense only a relative value because of the arbitrary choice of the system of correlation and methods of measuring, affects the very root of our physical thought. But if space and time have been deprived of their absolute qualities, the absolute has not been disposed of finally, but has only been moved back a step to the measurement of four-dimensional multiplicity which results from the fact that space and time have been fused into one coherent continuum by means of the speed of light. This system of measurement represents something totally independent of any kind of arbitrariness and hence something absolute."[3319]

and

> "For everything that is relative presupposes the existence of something that is absolute, and is meaningful only when juxtaposed to something absolute. The often heard phrase, 'Everything is relative,' is both misleading and thoughtless. The Theory of Relativity, too, is based on something absolute, namely, the determination of the matrix of the space-time continuum; and it is an especially stimulating undertaking to discover the absolute which alone makes meaningful something given as relative. [***] Our task is to find in all these factors and data, the absolute, the universally valid, the invariant, that is hidden in them, [*sic*] This applies to the Theory of Relativity, too. I was attracted by the problem of deducing from its fundamental propositions that which served as their absolute immutable foundation. [***] [T]he Theory of Relativity confers an absolute meaning on a magnitude which in classical theory has only a relative significance: the velocity of light. The velocity of light is to the Theory of Relativity [***] its absolute core. The absolute showed itself to be even more deeply rooted in the order of natural laws than had been assumed for a long time."[3320]

Bertrand Russell wrote in his book *The ABC of Relativity*,

> "In fact, though few physicists in modern times have believed in absolute motion, the [*special* theory of relativity] still embodied Newton's belief in [absolute motion], and a revolution in method was required to obtain a technique free from this assumption. This revolution was accomplished in

> Einstein's *general* theory of relativity [1916]. [—*redacted*, *emphasis added*]"[3321]

Ebenezer Cunningham averred,

> "[I]t will be seen, the old philosophical difficulty as to *absolute direction* or *angular velocity* remains. [***] Thus we do not appear to be brought any nearer to the removal of the old-time difficulty that the physical laws which seem best to describe the phenomena of motion postulate an absolute standard of direction though not of position, while apart from the physical phenomena there is no independent means of identifying such a direction."[3322]

Charles Nordmann recognized that,

> "Up to this point the theory of Relativity well deserves its name. But now, in spite of it and its very name, there arises something which seems to have an independent and determined existence in the external world, an objectivity, an *absolute* reality. This is the 'Interval' of events, which remains constant and invariable through all the fluctuations of things, however infinitely varied may be the points of view and standards of reference. From this datum, which, speaking philosophically, strangely shares the intrinsic qualities with which the older absolute time and absolute space were so much reproached, the whole constructive part of Relativity, the part which leads to the splendid verifications we described, is derived. Thus the theory of Relativity seems to deny its origin, even its very name, in all that makes it a useful monument of science, a constructive tool, an instrument of discovery. It is a theory of a new absolute: the interval represented by the geodetics of the quadri-dimensional universe. It is a new absolute theory."[3323]

Melchior Palágyi, from whom Minkowski took much, stated,

> "The term introduced by Einstein: 'theory of relativity' is, of course, a most unfortunate choice; we retain it, however, like any arbitrary standard designation, which you can't get rid of, because people have grown accustomed to using it. We restrict the meaning of the theory of relativity to: the new system of the world that arises from the monotheism of space and time and from the unification of mechanics and electrodynamics."
>
> "Die durch Einstein eingeführte Benennung: 'Relativitätstheorie' ist zwar höchst unglücklich gewählt; wir behalten sie aber bei wie irgendeinen beliebigen Eigennamen, den man nicht abändern mag, weil man sich an ihn gewöhnt hat. Relativitätstheorie bedeutet uns immer nur so viel als: das neue Weltsystem, das aus der Einheitslehre von Raum und Zeit und das der Vereinheitlichung von Mechanik und Elektrodynamik entspringt."[3324]

Albert Einstein told Ernst Gehrcke in 1914 that accelerated movements are absolute,

> "The clock B, which was moved, runs more slowly because it has sustained accelerations in contrast to the clock A. Certainly, these accelerations are unimportant for the amount of the time difference of both clocks, however, their existence causes the slow running just of the clock B, and not of the clock A. Accelerated movements are absolute in the theory of relativity."
>
> "Die Uhr B, welche bewegt wurde, geht deshalb nach, weil sie im Gegensatz zu der Uhr A Beschleunigungen erlitten hat. Diese Beschleunigungen sind zwar für den Betrag der Zeitdifferenz beider Uhren belanglos, ihr Vorhandsein bedingt jedoch das Nachgehen gerade der Uhr B, und nicht der Uhr A. Beschleunigte Bewegungen sind in der Relativitätstheorie absolute."[3325]

Gehrcke recounted that,

> "Mr. Einstein recently admitted to me orally that accelerations are absolute in Einstein's theory of relativity, up to now, however, he has not acknowledged that speeds in his theory are absolute. It is noteworthy in this context that in Newtonian Mechanics both translation-speeds and accelerations are *relative*, on the other hand rotational-speeds and -accelerations are absolute; I am of course in agreement with Mr. Einstein on this point (regarding Newtonian mechanics) and have proven that the often heard, contrary opinion, according to which all accelerations in Newtonian mechanics are absolute and 'inertial systems' are left to be defined mechanically, is erroneous. [***] Minkowski's theory of relativity places, like Einstein's, the reference system, to which all events are referred (therefore the absolutely resting system), in the subjective standpoint of an observer. Therefore, the theory can be characterized as a subjective theory of absolutism: subjective because the point of view of the *observer* is distinguished, absolute, because all events are referred to this standpoint and no other."
>
> "Daß in der Relativitätstheorie EINSTEINs die Beschleunigungen absolute sind, hat mir Herr EINSTEIN neuerdings auch mündlich zugegeben, er hat jedoch bisher nicht anerkannt, daß die Geschwindigkeiten in seiner Theorie absolute sind. Im Anschluß hieran sei bemerkt, daß in der NEWTONschen Mechanik sowohl Translations-Geschwindigkeiten wie -Beschleunigungen *relative* sind, dagegen sind die Rotations-Geschwindigkeiten und -Beschleunigungen absolute; ich bin in diesem Punkte (hinsichtlich der NEWTONschen Mechanik) wohl in Übereinstimmung mit Herrn EINSTEIN, und habe bewiesen, daß die oft gehörte, gegenteilige Ansicht, nach der alle Beschleunigungen in der NEWTONschen Mechanik absolute seien und sich „Inertialsysteme" mechanisch definieren ließen, irrtümlich ist. [***] Die

> Relativitätstheorie von MINKOWSKI legt, wie die von EINSTEIN, das Bezugssystem, auf welches alles Geschehen zu beziehen ist (also das absolut ruhende System), in den subjektiven Standpunkt eines Beobachters. Daher läßt sich die Theorie als *subjektive Absoluttheorie* charakterisieren: subjektiv, weil der Standpunkt des *Beobachters* ausgezeichnet wird, absolut, weil alles Geschehen auf *diesen* Standpunkt und keinen anderen bezogen wird."[3326]

Einstein professed, after the general theory was established, that,

> "There is no absolute (independent of the space of reference) relation in space, and no absolute relation in time between two events, but there is an absolute (independent of the space of reference) relation in space and time"[3327]

and,

> "The four-dimensional space of the special theory of relativity is just as rigid and absolute as Newton's space."[3328]

and,

> "The space-time phenomenon of the special theory of relativity was something absolute in itself, inasmuch as it was independent of the particular state of motions considered in that theory."[3329]

Einstein gave a lecture at King's College in June of 1921. *The London Times* quoted Einstein, on 14 June 1921, on page 8,

> "The theory of relativity endeavours to define more concisely the relationship between general scientific conceptions and facts experienced. In the realm of the special theory of relativity the space coordinates and time are still of an absolute nature in so far as they appear to be measurable by rigid bodies, rods, and by clocks. They are, however, relative in so far as they are dependent upon the motion peculiar to the inertial system that happens to have been chosen. According to the special theory of relativity the four-dimensional *continuum*, formed by the amalgamation of time and space, retains that absolute character which, according to the previous theories, was attributed to space as well as to time, each individually. The interpretation of the spatial coordinates and of time as the result of measurements then leads to the following conclusions: motion (relative to the system of coordinates) influences the shape of bodies and the working of clocks; energy and inertial mass are equivalent."

In accord with Gehrcke, Wiechert and Kretschmann,[3330] Stjepan Mohorovičić averred,

> "By its very nature, Einstein's theory of relativity is a spatiotemporal theory of absolutism, which requires a four-dimensional space-time manifold for the description of natural phenomena."
>
> "Ihrem Wesen nach ist die Einsteinsche Relativitätstheorie eine raumzeitliche Absoluttheorie, welche bei der Beschreibung der Naturerscheinungen eine vierdimensionale Raumzeitmannigfaltigkeit nötig hat."[3331]

J. E. Turner stated in 1921,

> "Indeed, the principle, in spite of its name, does not even imply that we are wholly deprived of absolute standards; it merely means that we are free to determine these as we please, provided we accept *all* the results of our choice; it follows further that a proper selection will greatly simplify argument and calculation. Thus the 'proper time' (*Eigenzeit*) of a system with reference to which a body is 'at rest,' as measured by observers moving with the body,[7] is unvarying and in that sense absolute; and Professor Eddington maintains that 'One part of the World differs from another—an intrinsic absolute difference . . . [The *vanishing* of a tensor does actually denote an intrinsic condition quite independent of time and space, and] the equality of two tensors in the same region is [also] an absolute relation . . . the vanishing of the left-hand side denotes a definite and absolute condition of the World.'[8] Just as sight would discover an 'absolute' to our supposed blind observers, so thought may attain an absolute which is truly such for normal experience.
>
> Nor again does the manner in which the theory treats simultaneity and other space and time attributes justify the contention that space is 'warped,' or afford the slightest fresh ground for the view that it and time are subjective."[3332]

Wallace Kantor noted,

> "Einstein's absolutivity postulate requires that $c' = c = C'$ for any real values of v and V. In a very real sense Einstein's theory of relativity is a misnomer, it should be called a theory of absolutivity."[3333]

The Encyclopedia of Philosophy discloses,

> "The physical theories of Einstein, and the variants developed by others, which have each been called the 'theory of relativity' are so named because they have relativized some of the attributes and relations (spatial distance, time interval, mass) which the Newtonian theory had asserted to be invariant (absolute). But the theory of relativity has *not* relativized all of the Newtonian invariants; indeed, it has 'absolutized' the counterparts of some of the attributes and relations which its Newtonian precursor had affirmed to

be relative."[3334]

Claude Kacser affirmed,

> "What is absolute is stated in Einstein's *first relativity postulate*: The basic laws of physics are identical for two observers who have a constant relative velocity with respect to each other."[3335]

Joshua N. Goldberg informs us that,

> "Minkowski space is an *absolute space-time*."[3336]

Prof. Anatoly A. Logunov contends,

> "Application of [the principle of relativity] to electromagnetic phenomena led Poincaré, and then Minkowski, to the discovery of the pseudo-Euclidean geometry of space-time and thus even more reinforced the hypothesis of inertial reference systems existing throughout the entire space. Such reference systems are physically singled out, and therefore acceleration relative to them has an absolute sense."[3337]

Robert Resnick concluded that,

> "The theory of relativity could have been called the theory of absolutism with some justification. [***] there *are* absolute lengths and times in relativity. [***] Where relativity theory is clearly 'more absolute' than classical physics is in the relativity principle itself: the *laws of physics* are absolute."[3338]

It is some strange "relativity theory", which is more *absolutist* than classical *absolutism!* . . . In one sense the *pseudorelativists'* caution with respect to the æther is commendable. However, it is unscientific to refuse to speculate based on the pseudorelativists' pretentious grounds that measurement and mathematical abstraction are the only tools of the scientist, and that their pseudorelativistic subjective comparisons and absolutist arguments by analogy are somehow "objective" and "relativistic".

By comparing abstract space with bodily extension, and quantifying it, the "relativists" have reified that which they qualify as "void"—they have reified concepts and are brokers of Metaphysics, not science. By insisting upon the physically contradicted notion that inertial motion, rigid rods, clocks, and light waves, each map congruent spaces; they deny the dynamic and relational physical world and substitute in its place arbitrary absolutist definitions of space and time, and a "space-time", in which these conceptions have a supposed reality beyond the observed relations of which they are physically composed. Boscovich argued against such absolutist beliefs centuries ago.[3339]

The list of true relativists is long. To name but a few: Des Cartes, Huyghens,

Locke, Leibnitz, Berkeley, Hume, Comte, Spencer, Stallo, Hamilton, Mach, Anderssohn, Avenarius, Petzoldt, etc. A real relativist, like Stallo, would never have embraced the absolutist "special theory of relativity", with its codified absolute space and time, and absolutist "space-time" and the ontological "universal constant" speed of light and absolute laws of Nature. Stallo wrote,

> "There is nothing absolute or unconditioned in the world of objective reality. As there is no absolute standard of quality, so there is no absolute measure of duration, nor is there an absolute system of coördinates in space to which the positions of bodies and their changes can be referred. A physical *ens per se* and a physical constant are alike impossible, for all physical existence resolves itself into action and reaction, and action imports change."[3340]

Mach proclaimed, in his *Science of Mechanics*,

> "The expression 'absolute motion of translation' Streintz correctly pronounces as devoid of meaning and consequently declares certain analytical deductions, to which he refers, superfluous. On the other hand, with respect to *rotation,* Streintz accepts Newton's position, that absolute rotation can be distinguished from relative rotation. In this point of view, therefore, one can select every body not affected with absolute rotation as a body of reference for the expression of the law of inertia.
>
> I cannot share this view. For me, only relative motions exist (*Erhaltung der Arbeit*, p. 48; *Science of Mechanics,* p. 229) and I can see, in this regard, no distinction between rotation and translation. When a body moves relatively to the fixed stars, centrifugal forces are produced; when it moves relatively to some different body, and not relatively to the fixed stars, no centrifugal forces are produced. I have no objection to calling the first rotation 'absolute' rotation, if it be remembered that nothing is meant by such a designation except *relative rotation with respect to the fixed stars.* Can we fix Newton's bucket of water, rotate the fixed stars, and *then* prove the absence of centrifugal forces?
>
> The experiment is impossible, the idea is meaningless, for the two cases are not, in sense-perception, distinguishable from each other. I accordingly regard these two cases as the *same* case and Newton's distinction as an illusion (*Science of Mechanics,* page 232)."[3341]

It is interesting to note that was Michele Besso and Friedrich Adler who persuaded Einstein to adopt Mach's principle and to extend the principle of relativity to rotations.[3342] Einstein had studied Mach's work early on in 1902.[3343]

Herbert Spencer declared,

> "THE RELATIVITY OF ALL KNOWLEDGE. [***] The conviction, so reached, that human intelligence is incapable of absolute knowledge, is one that has slowly been gaining ground as civilization has advanced. Each new

> ontological theory, from time to time propounded in lieu of previous ones shown to be untenable, has been followed by a new criticism leading to a new skepticism."[3344]

Comte famously avowed,

"Everything is relative, that's the only thing absolute"

Leibnitz argued against the Newtonian religious absolutism of the reification of ontological space and time,

> "As for my Own Opinion, I have said more than once, that I hold *Space* to be something *merely relative*, as *Time* is; that I hold it to be of an *Order of Coexistences*, as *Time* is an *Order of Successions*. For *Space* denotes, in Terms of Possibility, *an Order* of Things which exist at the same time, considered as existing *together*; without enquiring into their Manner of Existing. And when many Things are seen *together*, one perceives *That Order of Things among themselves*."[3345]

It is wrong to attribute to Einstein the assertions that time, space and motion are relative for two reasons: One, Einstein was an absolutist, who could not comprehend relativism. Two, others argued that time, space and motion are purely relative long before Einstein was born.[3346]

Galileo, Newton and Einstein were absolutists. Though Galileo is popularly credited as the father of the "principle or relativity"; the "principle of relativity" of Galileo, Newton and the Einsteins, is an absolutist corollary to the metaphysical and ontological notions of the absolute laws of Nature, absolute space, absolute time, absolute rectilinear inertial uniform translations of absolute space, and, in Einstein's case, the æthereal absolute speed of light, which, for Einstein, defines the absolute character of space, time and motion. However, Einstein is not alone to blame for these mythologies, because he was simply repeating the absolutist mythologies of Hendrik Antoon Lorentz and Henri Poincaré.

Speculations not yet physically contradicted can often be tested and should not be frowned upon. In insisting that any definition of the æther beyond "physical space" is taboo, the pseudorelativists are taking the hypocritical and political stance that the refusal to think is preferable to employing one's imagination where conditions do yet allow us direct observation of those things we wish to see, but cannot; while they claim the privilege of *a priori* ontological principles and purely abstract dimensions, which have already been physically contradicted. There are no "inertial reference frames" in "uniform motion" such as would define a congruent time dimension. There is no observable "rectilinear uniform motion" in Nature, other than by abstract and arbitrary absolutist definition, and no arbitrarily selected "rectilinear uniform motion" maps spaces congruent to any other "rectilinear uniform motion" we have yet to observe, such that flat "space-time" is a known absolutist fallacy based upon circular definitions.

Speculations can and should be criticized, and their value is often best weighed in hindsight. Wrong ideas often inspire right ones, which insights would not likely arise other than as opposition to myth, which is to say that no subjects ought to be taboo in science, for no one can say where they might lead. It is not wise to close out wonder from science and substitute dogma in its place, which dogma says nothing substantial, on the false premise that it is wisdom to assert nothing and foolishness to propose ideas which have a physical basis. In sum, it is healthy that one dogmatic view of that which constitutes the "æther" was subjected to criticism, but it is most unhealthy that said criticisms were employed to close the subject and substitute meaningless words for otherwise scientific images.

Definitions of the æther ofttimes are somewhat archaic. Thinkers resort to false analogies based on outmoded beliefs, largely because the subject of the æther has so long been taboo, that one feels compelled to resort to those assertions made long ago. The atomists of the Nineteenth Century asserted that the elements are composed of immutable lifeless particles. This left in doubt the nature of force, and the conservation of motion. As Fechner stated,

> "All that is given is what can be seen and felt, movement and the laws of movement. How then can we speak of force here? For physics, force is nothing but an auxiliary expression for presenting the laws of equilibrium and of motion; and every clear interpretation of physical force brings us back to this. We speak of laws of force; but when we look at the matter more closely, we find that they are merely laws of equilibrium and movement which hold for matter in the presence of matter. To say that the sun and the earth exercise an attraction upon one another, simply means that the sun and earth behave in relation to one another in accordance with definite laws. To the physicist, force is but a law, and in no other way does he know how to describe it. . . All that the physicist deduces from his forces is merely an inference from laws, through the instrumentality of the auxiliary word 'force'."[3347]

Leibnitz accused Newton of religiously supposing that the universe is a watch, which God winds. As many have noted, Newton, who was far more pantheistic than even Leibnitz suspected, did not conceive of the universe as a watch, for that implied a largely self-sustaining mechanism which only required intermittent divine intervention. Newton saw God as directly active in every action and reaction of bodies. However, many, among them the Newtonians, asserted that God set these bodies in motion and then imparted motion to them as the need arose—in order to keep the watch work universe of Newton all wound up.[3348] They further asserted that bodies act upon each other "at a distance", as in the case of gravity or magnetism, by God's will, whether they openly admitted this mystical exposition, or not. This group believed that motion compelled an absolute empty space in which things could move, and in which motion would have an absolute meaning, and, hence, force, too, would be an absolute quantity.

As a reaction to this belief system, others accepted the misbegotten notion that

"atoms" are immutable structures and concluded that force arose from a pressure in the æther. What, then, is the æther, and what, then, pressurized *it?* A false analogy was often then made to the false understanding of fluids prevalent at the time, that they are supposedly composed of identical and immutable particles. It is a good thing that these highly speculative and somewhat religious notions are today taken as dubious by many. Everything, which we have yet observed, changes. Perhaps, the æther, too, is change. In order to argue for an unchanging and fundamental æther by analogy, analogy should probably be had to something tangible, and to the best of your author's knowledge and belief, no such analogy is yet to be had, other than in our sense of what our own existence, as a religious belief, means to us, *as we change!*[3349]

That "empty space" is not "vacuum", is obvious. That it is *not* made of unchanging particles, seems an equally rational conclusion, unless I have missed some known phenomenon, which remains immutable. Perhaps, we have no means to perceive that which does not change. Perhaps, everything changes. Our ears cannot taste, and our tongues cannot see, and if change compels relations, it is rational to expect that the unchanging cannot affect the changing, and, therefore, cannot be perceived; but it seems more probable that we don't yet have the ability to sense the qualities of ephemeral space, directly, than that space is a permanent entity, which exists outside of our consciousness.

In the search for (in the psychological need to resolve some illusory image of) the *Urstoff* of the universe, we seem too often to resort to the notion of "adamantine atoms" rearranging themselves into ever different forms in time and to too quickly give the same name to different things as if one *Ding an sich*. The pseudorelativists ought to abandon the notion of "World-lines" and acknowledge the multiplicity fundamental to their absolutist view. We, probably due to our *sense* of our own permanent *Self*, conceive of a set of particles as an "apple" ripe and perfect today, rearranged as the same set of particles tomorrow. However, Hume had already recognized the impossibility of this. Hume stated,

> "I know there are some who pretend, that the idea of duration is applicable in a proper sense to objects, which are perfectly unchangeable; and this I take to be the common opinion of philosophers as well as of the vulgar. But to be convinc'd of its falsehood we need but reflect on the foregoing conclusion, that the idea of duration is always deriv'd from a succession of changeable objects, and can never be convey'd to the mind by any thing stedfast and unchangeable. For it inevitably follows from thence, that since the idea of duration cannot be deriv'd from such an object, it can never-in any propriety or exactness be apply'd to it, nor can any thing unchangeable be ever said to have duration. Ideas always represent the Objects or impressions, from which they are deriv'd, and can never without a fiction represent or be apply'd to any other. By what fiction we apply the idea of time, even to what is unchangeable, and suppose, as is common, that duration is a measure of rest as well as of motion, we shall consider afterwards."[3350]

In a four-dimensional world there is no evidence that an object can have duration, *nor can it change or have a history*. Instead, in an absolute block universe, there is absolute multiplicity, and the apple we pick today is a different set of "particles" from the "same" apple tomorrow, just as our consciousness of each is composed of a different set of "particles" comprising our awareness. This may afford a metaphysical exposition for memory, immediate awareness *and precognition*, each being the composition of *Self*-awareness in a quadri-dimensional substratum—memory, imagination, sensation, and precognition being the gift of existence without temporal cause, but perhaps with an interconnected extension in multiplicity, one thing the outgrowth of another, but as the limb branches from the root, not in time, but in structure.[3351] Our minds as physical realms different at each "moment" or conscious phase of that which we recognize as the *Self* in a lifetime, may contain memory objects, sense objects and precognition objects of which *Self*-awareness is composed. And in this sense, it is possible to view the universe as extending from any of its "parts", and it is a function of our human dignity to perceive ourselves as arising from ourselves, but this does not diminish the individuality of each moment, taken in a four-dimensional sense, of our existence as completely distinct and in no way displacing, replacing or creating any other experience we call *Self*. In the Eleatic system, nothing moves, rather motion is a delusion of consciousness resulting from the confusion of memory objects with sensual objects and with objects of precognition, or expectancies all of which coexist not only with each other but with that which they symbolize to consciousness. We have in our thoughts memories of a ball, sight of a "moving ball" and the precognition of it further on in its motion. However, to the Eleatics there is no one ball in the noumenal world, but rather a series of distinct objects confused in phenomenal language and images of memory objects, sensual object and objects of precognition as if one object moving.[3352] To the Eleatics, the conscious images of memories of the ball, sight of the ball, and precognition of the continued flight of the ball coexist with infinite distinct objects one calls the ball in motion and these are linked not in time, but simply are the structure of things which never changes and always exists. A super-consciousness linked to all things "past", "present" and "future"—all of which coexist—would have the power of absolute cognition and "precognition", though would seemingly be powerless to affect change or have freedom of will, a deficiency all creatures suffer in this belief system.

The Cabalistic Jews who spread their message to influential persons across Europe kept this Eleatic belief system alive to this day. In a somewhat different sense from the above, God being presumed omnipresent, Archbishop John Tillotson stated in his Sermons,

> "God sees and knows future things by the presentiality and coexistence of all things in eternity[.]"[3353]

Samuel Clarke stated in a sermon in 1704,

> "V. *Though the Substance or Essence of the Self-Existent Being*, *is it self*

absolutely Incomprehensible to us; *yet many of the Essential Attributes of his Nature*, *are strictly Demonstrable*, *as well as his Existence*. {*Margin note: That the Self-existent Being must be Eternal.*} Thus, in the first place, *the Self-Existent Being must of Necessity be Eternal*. The Idea's of Eternity and Self-Existence are so closely connected, that because Something must of necessity be Eternal *Independently and without any outward Cause of its Being*, therefore it must necessarily be Self-existent; and because 'tis impossible but Something must be Self-existent, therefore 'tis necessary that it must likewise be Eternal. To be Self-existent, is (as has been already {*pag.* 527, 528.} shown) to Exist by an Absolute Necessity in the Nature of the Thing it self. Now this Necessity being Absolute, and not depending upon any thing External, must be always unalterably the same; Nothing being alterable but what is capable of being affected by somewhat without itself. That Being therefore, which has no other Cause of its Existence, but the absolute Necessity of its own Nature; must of necessity have existed from everlasting, without Beginning; and must of necessity exist to everlasting without End.

AS to the *Manner* of this Eternal Existence; 'tis manifest, it herein infinitely transcends the Manner of the Existence of all Created Beings, even of such as shall exist for ever; that whereas 'tis not possible for Their finite Minds to comprehend all that is past, or to understand perfectly all things that are at present, much less to know all that is future, or to have entirely in their Power any thing that is to come; but their Thoughts, and Knowledge, and Power, must of necessity have degrees and periods, and be successive and transient as the Things Themselves: The Eternal, Supreme Cause, on the contrary, (supposing him to be an *Intelligent Being*, which will hereafter be proved in the Sequel of this Discourse,) must of necessity have such a perfect, independent and unchangeable Comprehension of all Things, that there can be no One Point or Instant of his Eternal Duration, wherein all Things that are past, present, or to come, will not be *as* entirely known and represented to him in one single Thought or View; and all Things present and future, be equally entirely in his Power and Direction; *as if* there was really no Succession at all, but all things were actually present at once. Thus far we can speak Intelligibly concerning the Eternal Duration of the Self-existent Being; And no *Atheist* can say this is an Impossible, Absurd, or Insufficient Account. {*Of the Manner of our Conceiving the Eternity of God.*} It is, in the most proper and Intelligible Sense of the Words, to all the purposes of Excellency and Perfection, *Interminabilis vitæ tota simul & perfecta possessio:* the *Entire and Perfect Possession of an endless Life*.

OTHERS have supposed that the Difference between the *Manner* of the Eternal Existence of the Supreme Cause, and that of the Existence of created Beings, is this: That, whereas the latter is a continual transient *Succession* of Duration; the former in *one Point* or *Instant* comprehending Eternity, and wherein all Things are really co-existent. {*With respect to Succession.*} But this Distinction I shall not now insist upon, as being of *no Use* in the present

> Dispute; because 'tis impossible to *prove* and *explain* it in such a manner, as ever to convince an Atheist that there is any thing in it. And besides: As, on the one hand, the *Schoolmen* have indeed generally chosen to defend it: so on the other hand there
>
> [*Footnote:* Crucem ingenio figere, ut rem capiat fugientem Captum. — Tam fieri non potest, ut instans [*Temporis*] coexistat rei successivæ, quam impossibile est punctum coexistere [*coextendi*] lineæ. — Lusus merus non intellectorum verborum. *Gassend. Physic. lib.* I.
>
> I shall not trouble you with the inconsistent and unintelligible Notions of the Schoolmen; that it [*the Eternity of God*] is *duratio tota simul*, in which we are not to conceive any Succession, but to imagine it an Instant. We may as well conceive the *Immensity* of God to be a *Point*, as his *Eternity* to be an *Instant*. — And how That can be together, which must necessarily be imagined to be co-existent to Successions; let them that can, conceive. *Archbishop Tillotson*, Vol. VII. Serm. 13.
>
> Others say, God sees and knows future Things by the presentiality and co-existence of all Things in Eternity; For they say, that future Things are actually present and existing to God, though not *in mensura propria*, yet *in mensura aliena*. The Schoolmen have much more of this Jargon and canting Language. I envy no Man the understanding these Phrases: But to me they seem to signify nothing, but to have been Words invented by idle and conceited Men; which a great many ever since, lest they should seem to be ignorant, would seem to understand. But I wonder most, that Men, when they have amused and puzzled themselves and others with hard Words, should call this *Explaining* Things. *Archbishop Tillotson*, Vol. VI. Serm. 6.]
>
> are many Learned Men, of far better *Understanding* and *Judgment*, who have rejected and opposed it."[3354]

Continuing the Eleatic-Cabalistic themes of Isaac Newton through Samuel Clarke, David Hartley wrote, *inter alia*, in 1749,

> "For all Time, whether past, present, or future, is present Time in the Eye of God, and all Ideas coalesce into one to him; and this one is infinite Happiness, without and Mixture of Misery, *viz*. by the infinite Prepollence of Happiness above Misery, so as to annihilate it; and this merely by considering Time as it ought to be considered in Strictness, *i. e.* as a relative Thing, belonging to Beings of finite Capacities, and varying with them, but which is infinitely absorbed in the pure Eternity of God."[3355]

Adopting the notion of "space-time", the question of how this awareness incorporating memory, immediate awareness and precognition "came to be" ceases to have meaning. The investigation shifts to the interconnectedness of these diverse things we call through an illusion of words the same thing at different times and

implies a direct connection generating consciousness of past, present and future as sense experience. Under such a system we can sense future and past objects with the same facility by which we sense present objects, in that if we correctly conceive of them then nature has as a matter of course linked us to them as our fate, which is ever present and unchanging.

This exposes far greater interconnectivity, and yet diversity, between the phenomenal and the noumenal, than the Materialists and the Idealists were able to imagine. According to Eleatic space-time theories, when I throw a baseball from here to there, one set of particles does not move from here to there through space and time. Rather, time and space are conceptualized in consciousness to order the human image of the "motion" of "the baseball", which is instead one set of particles here, and a completely distinct set of particles, or body, there, both of which exist "forever". Motion does not exist. What we conceptualize as a baseball in flight is instead a series of distinct objects (no two ever exactly alike), which we imagine to be the same baseball in motion through an illusion of consciousness—and our awareness of these things is not drawn from memory nor rationalized, but is our *Self* at that moment as a timeless construct of images—just as my hand at this "moment" is not composed of memories but is a timeless structure in itself. This Teichmüller-like[3356] world precludes the possibility of Minkowski's "world-lines", because the rail holding together the point-like ties on this railroad is supplied by consciousness, which incorrectly denies the individuality of each point in an invalid Gestalt linkage.

In 1895, Edmund Montgomery wrote,

> "WHAT we perceive, all, in fact, we are in any way aware of, has only momentary existence. This not, as may perhaps be thought, in the sense that the next moment it has become transformed into something else; but in the unambiguous sense that it ceases to be anything whatever.
>
> This utter evanescence of all that appears to us in time and space contradicts flagrantly the fundamental maxim, that nothing in existence can ever be brought wholly to naught, that complete extinction of what was once in existence is inconceivable. Yet no fact in nature is more certain, or of more frequent occurrence. Total annihilation from moment to moment is what actually takes place in the world we are conscious of.
>
> All through life the conscious awareness of ourselves and of things in general fills only that single moment of duration we designate as 'the present.' Whatever has made up consciousness the moment before has, as such, for ever vanished out of being. And whatever content may rise into conscious existence the following moment is evidently as yet non-existent. What we are conscious of as existing, our own selves and the world perceived by us, is in verity, all in all, a constant creation fashioned out of precisely such stuff as dreams are made of. And who will seriously maintain that dream-pageantry has any sort of permanent existence?
>
> Of course, something inside and outside of us seems, nevertheless, in some way identically to endure. But this is certainly not something ever forming part of what is consciously present to us. At present, for instance, I

perceive a window through the interstices of whose shutters sunlight is streaming into the room. Closing my eyes the very same perceived window—technically called an after-image—remains distinctly visible. Soon, however, it fades, and, at last, vanishes altogether. Who can deny that this special perceptual object has dwindled for ever into nothingness? Reopening my eyes, what is generally taken to be the same window is again perceived. But, surely, the window I now perceive, the window now forming part of my conscious content, cannot possibly be the same window that had completely faded away as a conscious existent after I had closed my eyes a little while ago.

In exactly the same manner the entire content, which makes up consciousness at any given moment, vanishes the next instant, irreparably, into non-existence.

Should at any future moment some apparently identical constituent of consciousness rise again into present awareness, it can nevertheless in nowise be the identical constituent that was present before, but must of necessity be newly produced. The apparently identical window consciously present to me on reopening my eyes was in reality an altogether newly produced perceptual object.

How produced?—This exactly is the burning question the widely disparate answers to which are dividing thinkers into essentially opposed schools of thought. That much, at least, is certain: our entire life-experience, all we have ever felt and seen, is never otherwise consciously present to us than only as an ever-renewed creation, condensed into transitory moments of simultaneous awareness.

To conceive, as is often done, the succession of such moments of awareness in the likeness of a thread, a stream, a series of conscious states, is to overlook completely their evanescent nature. A strange thread this, having next to no length, the one end of which vanishes the moment after it has been spun from out some invisible source of supply, and the other end of which has to be made out of material not yet in existence.

Our moment of conscious awareness, never identical, but constantly reproduced, if it adequately contained the totality of possible experience, instead of consisting merely of its most partial and remotely symbolical representation; and if it unremittingly endured, instead of emerging in casual and fitful glimpses; then such permanent totality of conscious content would indeed constitute what philosophers have conceived as the 'eternal now,' the all-comprising '*punctum stans*' of being.

Even then, enjoying such phenomenal omniscience, we should feel compelled to enquire after the hidden source of emanation which was creatively underlying this ever renewed totality of conscious awareness[1]. Pure philosophical Phenomenism proves itself all too shadowy to its own votaries. They likewise assume some kind of noumenal matrix."

The Eleatics resolved the dilemmas posed by Montgomery, but they did so

through absolute multiplicity, not through the rearrangement of permanent particles of Minkowski space. The many windows Montgomery proposes each exist and are *not* annihilated nor displaced, rather *he* is a multiplicity of consciousnesses each with its own objects; its own *sense* of past, present and future; each never created nor destroyed; but each *feeling* that it is changing. This is how we are formed in the Universe of being, to *feel* as if we are fleeting spirits, when we are rather multiplicity, distinct from ourselves from "moment" to "moment" not only in form, but in substance, if any distinction is to be had between the two. Are there then observable connections to the memories and premonitions which make up these individual existences? Can one detach from one course and couple to another? Surely the link to the "past" can be severed in the multiplicity—one can forget—and it is a radical view to hold that prophesy is as much a physical manifestation as memory, but these are the logical conclusions of this belief system. It affords much food for thought.

Fechner saw his immortality in this quadri-dimensional vision, because he saw each moment of his life as permanent and coexistent. Venn, Wells, and Welby saw in it the possibility of "time travel". Though the Universe is a block for them, they should fear no contradiction that Nature might not permit in one of its aspects a clever soul to formulate a means to *become* aware of another set of images. But they must abandon the notion of a permanent *Urstoff* rearranging itself in new forms in a time dimension, and a permanent soul as one witness of its life, other than in name alone; and realize the multiplicity which composes the substratum and the *Self*.

In most æther theories recourse is again had to a permanent æther, our bodies are moving through this æther as a series of wave forms, substance and form left behind in time to become the wave at the shore which was once the wave far off at sea, the water comprising the wave left behind as the mere carrier of the changing form which walks as "energy" through the medium, the way the winds shows its face in a rippling flag. Hendrik Antoon Lorentz stated in 1906,

> "We shall add the hypothesis that, though the particles may move, *the ether always remains at rest*. We can reconcile ourselves with this, at first sight, somewhat startling idea, by thinking of the particles of matter as of some local modifications in the state of the ether. These modifications may of course very well travel onward while the volume-elements of the medium in which they exist remain at rest."[3357]

There are inadequacies in all these fictions. Edmund Montgomery wrote in 1885,

> "No natural fact could be more plain and immediately certain than that you see a friend bowing to you. But is not the human form you perceive undeniably your own percept, and the movement of its head but one of those changes in the percept called vital functions? And are not these perceptual data the only manifestations present to you as percipient subject. Where then is the veritable person who recognised you and expressed this recognition by a friendly bow? Materialism and Idealism are equally far from being able to

> account for the veritable nature of this necessarily assumed existent. How infantile our little attempts at world-explanation must still be considered, may come home to us if we remember that our most prominent scientists still look upon the perceptual representations of their own consciousness as the veritable foreign existents whose intimate nature they are investigating; endeavouring to express it in terms of imagined world-stuff can be truly nothing but shifting points of evanescent feeling, by them however hypostatised in permanency as adamantine atoms with eternal motion."[3358]

If there is an æther, it has environmentalist implications, as well as metaphysical implications. Changing the environment creates new entities, potentially so very unlike what existed *before* (or need one say "what exists *elsewhere*"?) as to make us other than what we consider to be human. The illusory surety of *Self* and the pretense of a permanent substratum are perhaps a dangerous form of complacency. Can not the waves within the "æther" be damaged, and with the sea so polluted, what will become of us?

As to the falsifiability of "space-time" theories, Lotze wrote,

> "157. I should not be surprised if the view which I thus put forward met with an invincible resistance from the imagination. The unconquerable habit, which will see nothing wonderful in the primary grounds of things but insists on explaining them after the pattern of the latest effects which they alone render possible, must here at last confess to being confronted by a riddle which cannot be thought out. What exactly happens—such is the question which this habit will prompt—when the operation is at work or when the succession takes place, which is said to be characteristic of the operative process? How does it come to pass—what makes it come to pass—that the reality of one state of things ceases, and that of another begins? What process is it that constitutes what we call perishing, or transition into not-being, and in what other different process consists origin or becoming?
>
> That these questions are unanswerable—that they arise out of the wish to supply a *prius* to what is first in the world—this I need not now repeat: but in this connexion they have a much more serious background than elsewhere, for here they are ever anew excited by the obscure pressure of an unintelligibility, which in ordinary thinking we are apt somewhat carelessly to overlook. We lightly repeat the words 'bygones are bygones'; are we quite conscious of their gravity? The teeming Past, has it really ceased to be at all? Is it quite broken off from connexion with the world and in no way preserved for it? The history of the world, is it reduced to the infinitely thin, for ever changing, strip of light which forms the Present, wavering between a darkness of the Past, which is done with and no longer anything at all, and a darkness of the Future, which is also nothing? Even in thus expressing these questions, I am ever again yielding to that imaginative tendency, which seeks to soften the 'monstrum infandum' which they contain. For these two abysses of obscurity, however formless and empty, would still be there. They

would always form an environment which in its unknown within would still afford a kind of local habitation for the not-being, into which it might have disappeared or from which it might come forth. But let any one try to dispense with these images and to banish from thought even the two voids, which limit being: he will then feel how impossible it is to get along with the naked antithesis of being and not-being, and how unconquerable is the demand to be able to think even of that which is not as some unaccountable constituent of the real.

Therefore it is that we speak of distances of the Past and of the Future, covering under this spatial image the need of letting nothing slip completely from the larger whole of reality, though it belong not to the more limited reality of the Present. For the same reason even those unanswerable questions as to the origin of Becoming had their meaning. So long as the abyss from which reality draws its continuation, and that other abyss into which it lets the precedent pass away, shut in that which is on each side, so long there may still be a certain law, valid for the whole realm of this heterogeneous system, according to the determinations of which that change takes place, which on the other hand becomes unthinkable to us, if it is a change from nothing to being and from being to nothing. Therefore, though we were obliged to give up the hopeless attempt to regard the course of events in Time merely as an appearance, which forms itself within a system of timeless reality, we yet understand the motives of the efforts which are ever being renewed to include the real process of becoming within the compass of an abiding reality. They will not, however, attain their object, unless the reality, which is greater than our thought, vouchsafes us a Perception, which, by showing us the mode of solution, at the same time persuades us of the solubility of this riddle. I abstain at present from saying more on the subject. The ground afforded by the philosophy of religion, on which efforts of this kind have commonly begun, is also that on which alone it is possible for them to be continued."[3359]

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