

Dissecting the Birotating Photon

Thomas Kirk

As many in ISUS are aware, I do not believe there is any validity to the concept of a birotational photon. I originally reviewed the concept as a scientist with a completely open mind, the same as I have done with countless of my own erroneous ideas. I would not respond to the issue again, except for the sake of those who may be negatively influenced by such a development. It is clear there is a danger of creating a completely new segment within the ISUS organization which professes a different theory than Larson's. A few of the dangers are:

1. Newcomers will be very confused by radical contradictions of Larson's development being bantered about, especially those that attack his theory at its very root. Severing this root constitutes destruction of the entire system of structure presented by Larson; severing the root collapses the structure. An entire new structure would have to be developed.
2. Those newcomers who have the patience to wait for an entirely new structure of theory, will still be repelled by the utter complexity and confusion of the new system of theory based on "scalar rotation" and the process required to achieve it.
3. The organization, ISUS, will inevitably represent two entirely different schools of thought, an intolerable situation.
4. Current members are in danger of drifting off because of the above reasons.

In one last hope of avoiding these consequences, I am responding one more time to this rotational photon concept. I have given up all hope of diverting Nehru himself on his voyage into the realm of incomprehensibility. I believe now he is too obsessed with his pet theory or has invested too much into it to turn back now. It is a shame that by the time he recognizes the irreconcilability of his pursuit, he will have wasted many years. We can only wait and see.

1 Background

Most readers are at least familiar to some degree with Larson's photon model. It proposed the simplest of all displacements to be the same entity which is the natural progression, but inward instead of outward. "Turning now to the question as to what kinds of motion are possible at the basic level, we note that scalar magnitudes may be either positive (outward, as represented in a spatial reference system), or negative (inward)."¹ Larson goes on to say on the same page, "Since the outward progression always exists, independent continuous negative motion is not possible by itself, but it can exist in combination with the ever-present outward progression. The result of such a combination of unit negative and unit positive motion is zero motion relative to a stationary coordinate system." Nehru says in his recent article that he has fully explained why such a concept is incorrect in a previous article. So we have to let that one go in relation to any discussion concerning Nehru; Nehru apparently will not consider it any further.

Yet it is clear that scalar motion is a pure magnitude and if the natural progression is outward, an inward motion must indeed be a negative scalar magnitude, as Larson originally saw it. Further, an inward unit extended from the natural reference, unit speed outward, will achieve a zero motion state

1 Larson, Dewey B., *Nothing But Motion*, p. 46.

relative to a stationary reference system. This is the essence of the photon model that I originally presented and continue to maintain is correct. It is interesting that though Larson derived this phenomenon as quoted above, he never went back to it and actually completely ignored it in all further development. Instead he went directly past it to the harmonic photon concept, but left the other more fundamental concept “unnamed.” Nehru put forth his *Law of Conservation of Direction*, as will be discussed below, just to correct the awkwardness of the harmonic photon concept. This awkwardness is clear indication that the derivation of the harmonic photon concept was incorrect. The first derived phenomenon which Larson later ignored was in fact the true photon.

The basic Larson photon is actually the same as the unnamed phenomenon and is perfectly valid as such; any problem that existed was only a matter of perception in that Larson provided for a constantly changing direction as an additional property of his photon. Larson saw the photon as the simplest unit displacement from the natural progression, as s/t or one dimensional displacement which for a $1/n$ photon appears from our perspective to be the negative of the natural progression for the time unit in which the displacement is effective. This is plainly clear in *Nothing But Motion* as a review of page 98 will reveal. Yet Larson also included the more awkward construct of constantly changing direction. He never explained what became of the alternate phenomenon with constant direction derived on page 46.

Being that such a $1/n$ motion would take the photon off of a pure linear path of propagation barring some unspecified factor, Larson made the erroneous assumption that this unspecified factor must be simple harmonic motion. The simple harmonic motion explanation would provide for the balanced linear motion observed, but would require reversal of the vectorial manifestation of inward motion in alternating units of time (see page 98, *Nothing But Motion*). This was the problem which created the controversy. Keep in mind, in making this assumption, he left behind a more simple phenomenon which he derived first and then left unidentified by proceeding to the more awkward harmonic concept. In abandoning a derived phenomenon, he violated one of his own principles: “in the theoretical universe of motion anything that *can exist does exist*.”² My contention is that his first derived unnamed phenomena does exist as the phenomenon, and the harmonic concept is flawed and cannot exist

Now enter Nehru and the *Law of Conservation of Direction*. Nehru continued with the same idea that the photon is a form of simple harmonic motion but with a new explanation for same. The new explanation was intended to eliminate the need for Larson’s periodic change of vectorial direction. The fact of the matter is that Nehru is exactly correct on conservation of direction, but wholly wrong on simple harmonic motion being the nature of photon motion. Here is the essence of the concern: Nehru’s unfounded efforts to provide for such an explanation are entirely unnecessary.

Being within unit space, as we know for certain the photon is (interregional ratio always effective), the direction of the motion is lost on transferring through the unit space boundary. All spatial aspects of motion are lost on such transference. “Inside unit space there is still more variability, as the motion in this region is in time, and there is no fixed relation between direction in time and direction in space.”³ (The potential spatial direction, Let the essence of its linkage, is maintained within unit space and is the basis of polarization). So in his own words, Larson provided the explanation for the balanced direction manifestation of the photon motion, but apparently never made the connection. Therefore this whole business of a birotational photon to explain simple harmonic motion without change of direction is unnecessary and wholly non-existent in physical reality.

We should note that Nehru’s ideas are not deductively derived, as Larson’s and mine are. The

² *Ibid.*, p. 43.

³ *Ibid.*, p. 161.

birotational photon is similar in this way to the idea that black holes exist at the center of galaxies, only Nehru's foundation is far less substantive. Neither of these ideas extend from any independent foundation. Nehru, particularly, is making inductive leaps of inference or even "free invention" from the basis of Larson's photon, which as testified by Nehru himself, is not even remotely similar to this birotational photon. So how can he use it as a beginning point for his inductive leap, if the result contradicts the point of beginning?

Larson repeatedly in his works chastised scientists for using the inductive process or "free invention" methods and for good reasons as he presents. "The small scale theories applicable to individual phenomena... are empirical generalizations derived by inductive reasoning from factual premises. At one time it was rather confidently believed that the accumulation of empirically derived knowledge then existing, would eventually be expanded to encompass the whole universe. But when observation and experiment began to penetrate what we may call the very large, the very small and the very fast, Newtonian science was unable to keep pace... ."4 It is relatively clear that Nehru's concept is not really even inductively derived, because the key fact, i.e. a photon has not been shown to be simple harmonic in any factual sense.

His development is closer to the free invention approach, generally used for the very small and the very fast as would be appropriate for the photon. "But where empirical data are inadequate or unavailable, present-day science relies on deductions from the currently accepted general principles, the products of free invention, and this is where physical theory has gone astray. Nature does not agree with these "free inventions of the human mind."5 Nehru should come back to the deductive method, and then perhaps some reasonable developments might come forth.

2 Linkage

On the subject of linkage, Nehru says on the one hand that direction is conserved, yet in the same breath professes that *linear motion can be rotational motion*, depending on the environment, not on any change in the motion itself. Quoting from his article: "The same scalar motion can be either translational, rotational, vibrational or a rotational vibrational... What distinguishes them is the coupling to the reference system and this changes according to the circumstances."6 Rotational motion is constantly changing direction, yet he asserts that the same motion can be linear and still conform to the law of conservation of direction. This is difficult to swallow. Nehru's birotational development depends on this total flexibility of linkage; without it the concept collapses. Yet the irony is that the reason he originally proposed birotation was to provide for conservation of direction, in such linkage.

We should define linkage: "Linkage is the form of a scalar motion manifested in reference to a fixed reference system."

I would like to now put forth the Law of Conservation of Linkage:

"The linkage of a motion to a fixed reference system can only be changed by deletion or addition of motion to the original motion."

To those who have been following the development so far it might be apparent by now that the Law of Conservation of Direction, the Law of Conservation of Linear Momentum, the Law of Conservation of Angular Momentum, and Newton's Third Law of Motion—are all corollaries of the Law of

4 *Ibid.*, p. 9.

5 *Ibid.*, p 10.

6 K.V.K. Nehru, "On the Nature of Rotation and Birotation," *Reciprocity*, Spring 1991

Conservation of Linkage.

3 Natural Progression

Now we can proceed in earnest with the review of Nehru's paper. In the fifth paragraph under "The Two Intrinsic Traits of Vector Space," the discussion of 6 or 8 space units is extremely weak with little or no substance. Space exists not in 3 directions but in all directions, providing the volume aspect of space. It coincidentally requires three magnitudes to specify a location in extension space, thus the 3-d label. The 8 units involved in the space-time progression are only indirectly related to the nature of static (or vectorial) space. They arise from the nature of motion, not space, i.e., time intimately related to space.

K.V.K. Nehru takes a very obscure view of the natural progression saying in his article that the unit motion of the natural progression is "fictitious." He fails to elaborate. Perhaps he feels that the natural progression must be rotational to fit his theory, or maybe he must explain it away for the same reasons. Yet we see this unit motion all around us and also out in distant space. Is the linear propagation of photons fictitious, or the recession of the distant galaxies? This disregard for the physical reality of the state of non-phenomena is important to Nehru's birotational photon. He takes great license based on this general disregard.

This is even more worrisome than would be elimination of Larson's essential photon model; this is a modification of the background from which the photon extends. The background source and the root of the structure of physical theory is radically changed in Nehru's theory. I would like to assert one more time that this is a theory of a very different kind. As Larson put it:

"It should be understood in this connection that the term 'motion' as used herein, refers to motion as customarily defined for scientific and engineering purposes; that is, motion is a relation between space and time, and is measured as speed or velocity. In its simplest form, the 'equation of motion,' which expressed this definition in mathematical symbols is $v = s/t$.

The definition as stated, the standard scientific definition, we may call it, is not the *only* way in which motion can be defined. But it is the only definition that has any relevance to the development in this work. The basic postulate of the work is that the physical universe is composed entirely of motion as *thus defined*. What we are undertaking to do is to describe the consequences that necessarily follow in a universe composed of *this kind* of motion. Whether or not one might prefer to define motion in some other way, and what the consequences of such a definition might be, has no bearing on the present undertaking."⁷

(this author's underline, Larson's italics)

Nehru postulates ϕ/t and s/t as the basis of scalar motion, not simply s/t . He goes on to say that "The difficulty of imagining the existence of rotational motion without it being the rotation of something is just like the difficulty of imagining the existence of motion without it being the motion of something."⁸ Now the natural progression according to Larson is the progression outward of location or s/t . But rotations are always rotations of specific directions. Without a displacement to establish such a specific direction as a basis, then rotation of what? If this rotated direction is the direction of the motion of the location, then the total motion is a compound motion. The natural progression is clearly not a compound motion, therefore a ϕ/t property does not exist as part of it. If a motion exists as a

⁷ Larson, *op. cit.*, p. 17.

⁸ K.V.K. Nehru, *op. cit.*

displacement in a specific direction, then a rotation of that direction is possible and in fact forms the basis for Larson's development of compound motions known as subatomic particles and atoms.

I believe that where Nehru must have originally started was with rotation of the direction of the natural progression. This would be his simplest displacement, the photon. This line of argument had some merit as an area of investigation. However, a birotation does not seem to easily follow, again a compound motion. Further, the motion of the natural progression is non-specific in direction and therefore cannot be directly rotated. Quoting Larson on the natural progression manifested in a physical phenomenon: "all galaxies are moving outward at a constant speed, but they are moving outward in all directions. Thus the only property of this type of motion is a positive magnitude. Such a motion is, by definition, scalar."⁹ Such a motion cannot be rotated because there is no direction to rotate. Also, the simplest displacement would not likely be a 2-dimensional phenomenon, which any rotation clearly is. The way I determine in my mind a valid concept, is when I feel completely comfortable in the way it fits all of the relevant factors involved. I can't imagine how anyone is comfortable with the birotational photon.

Under the circumstances, any quotation from Larson's works cannot be used by Nehru to substantiate his work. Using references for this purpose from a contradicting theory, only creates greater confusion. To see how true this is, we only need look at how Larson's development progresses from the natural progression to the simplest displacement, the subject of my first question addressed by Nehru.

The natural progression is clearly a linear, s/t, 1:1, phenomenon based on all physical evidence and further based on the postulates, which clearly state that it is just that this involves space in its simplest form, one dimensional, in relation to time in its simplest form. There is no indication that the natural progression is ϕ/t as Nehru would have us accept. Larson presented the simplest displacement from this uniform condition to be a 2:1 motion condition, 1/2 or 2/1. These are simply modified linear, s:t, relations, i.e. displacements of the simplest kind. From our perspective, we see the natural progression, "unit velocity, one unit of space per unit of time, is the condition of rest in the physical universe, the datum from which all activity begins,"¹⁰ is unit speed outward. Continuing with that as a reference, a unit displacement, 1/2, involves a one unit inward displacement, a reversal or one negative unit from that reference.

A $d\phi/dt$ displacement is clearly two dimensional. In fact Nehru's photon, presumably still the simplest of all phenomena, has evolved to two things moving in 2 dimensions in opposite directions. Nehru never actually addresses the substance of my question concerning, what is a one dimensional displacement, if a photon is a two dimensional displacement?

In the last paragraph under "The Two Intrinsic Traits..." section, Nehru alludes to an angular momentum within the photon, though he has presented no information on this phenomenon except his hypothetical concept of how such a thing might occur. It would be much better to provide the reader with some facts that we do not have. Further, just because a conventional scientist believes he has discovered angular momentum does not mean it is true. The majority of conventional scientists no doubt are highly skeptical also. Why is Nehru such a quick devotee? I ran across an experiment where a magnetic field definitely without a doubt caused the polarization of photons to rotate. I am not going to be the one to assert that this proves there is a magnetic field within the photon, because it probably is untrue. There is no doubt another more plausible explanation in both cases.

⁹ Larson, Dewey B., *The Neglected Facts of Science*, p. 1.

¹⁰ Larson, Dewey B., *The New Light on Space and Time*, p. 82.

4 Scalar Rotation?

The essential concept of Nehru's birotational photon is apparently contained in the section "The Scalar Direction of Rotation." This title demonstrates a whole new idea in itself. Scalar motion is no longer simply a magnitude inward or outward, negative or positive, as Larson maintained, it now is purported to be rotational and not rotational in space or time, just scalar rotational. We must remember that the property of direction contradicts the definition of scalar. Larson considered scalar motion to be s/t inward or outward and nothing more, a pure magnitude without directional properties. The only question was how does this coincidentally manifest in 3-d space or in a fixed time reference system. Nehru is now taking us on an entirely different road, to scalar motion which has a vectorial nature within itself regardless of the manifestation in 3-d space. Once again, a major breakthrough into compounded complexity.

The question of the direction of the photon 3-d manifestation was the original question; why are we being dragged into this entirely different pursuit of scalar rotation, whatever that is? If we read Nehru's discussion, there are two somethings rotating in opposite angular directions. What are these rotating lines? They are purported to move continually inward rotationally, yet this rotation evidently has nothing to do with rotation in 3-d space of time. Then inward is inward of what? The rotations are counterclockwise (CCW) and then clockwise (CW) alternately. It is very clear that the motion under discussion is not rotation in a spatial reference system. It is a scalar motion which as Nehru says is basically a magnitude. Yet he contradicts the simple magnitude concept by *saying rotation can be a property of the scalar motion independent of whatever manifestation it has in a fixed reference system* (see Reference 4). It is then not a simple magnitude with a coincident 3-d manifestation. Nehru is asserting that scalar motion itself is inherently rotational regardless of its 3-d manifestation.

I submit that rotation is a 3-d space phenomenon. It has no meaning in any other context. It is a constantly changing vectorial direction, so by definition cannot be scalar, because it involves vectorial direction. Larson never purported that scalar motion had any property but a magnitude, no specific direction. This after all is the definition of the term scalar; only positive or negative magnitudes. Such magnitudes manifest as linear motion in most cases and as rotation in others. Nehru's scalar motion is vastly more complex, having the properties and characteristics of two mysterious objects in "scalar rotation" in opposing directions, as presented in his paper. How can there be *opposing directions* when scalar is purely a magnitude? Further if Nehru postulates that scalar inward motion is two objects moving inward rotationally, then the natural progression, being a simple outward magnitude, would be two objects rotating outward. This appears to be leading in a difficult direction for theoretical development.

As we see, Nehru's scalar motion has two linear things rotating in opposite directions alternating from CW to CCW while maintaining an inward scalar direction. He ends the section by asserting that this inward continuity is maintained by the motion starting at an outward angle of $0+360n$ degrees. Yet if we assume one rotation in a unit of time, one second requires n to be greater than 10^{15} ? Photons are known to exist for billions of years; is it likely n is approaching infinity or at least greater than 10^{28} ? Is there any rational explanation for the arbitrary unlimited value of n ? Why do I have this feeling Nehru will pull something out of his hat?

I will skip over the next section, because it does not directly support Nehru's concept. It appears to be an ad hoc discussion of Larson's theory, which in light of the totally altered theory under consideration by Nehru, has no connection to his article. In fact, I find it very difficult to take any statement about Larson's theory seriously when it extends from a perspective as radically removed as Nehru's. Larson's

theory provides for a photon at the core of virtually all phenomena. Therefore, who knows what kind of universe might evolve from a birotational photon? It clearly would provide a radically different one in all respects. Nehru has already proposed a birotational electron; is a birotational atom and other subatomic particles far behind?

5 Polarization

Now on to polarization. Nehru seeks to answer my question: How does a phenomenon which is compound rotation exist after half of its component motion is removed as in the postulated polarization? How is this the same phenomenon, a photon? Nehru immediately responds “this is simple,” and then launches into a presentation which does indeed create a new phenomenon, quite different from his original photon, and to top it off, modifies the atomic structure of the polarizing medium. Some other explanation of polarization might be simple.

Nehru’s birotational photon is two rotations in opposite directions. In his first paper on the subject, one of the two rotations of the birotation was lost in creating a polarized photon. Now his polarized photon has become two rotations in the same direction. Even after this modification, my question remains pertinent. Yet he still fails to explain, how is this the same phenomenon, a photon? For instance, the two rotating things are now chasing each other and not moving constantly inward towards each other. How is this inward motion now? Should not such a photon exhibit some very unique observable effect in comparison to a normal photon of the same frequency, considering that we no longer have the balanced motion Nehru was seeking when he postulated a birotational photon.

Another point is that light can be polarized simply by a refraction, not any form of exchange with matter. A different form of photon would not result by this refraction method. I submit that polarization does not modify the photon in any respect, not the polarizing medium. A polarizing filter system simply filters out light which is not aligned, with otherwise identical photons of a specific alignment which pass through as polarized light. The light does not change, nor is there any exchange of rotation with matter. The observed rotation of polarization by a magnetic field supports this concept. Nothing in the nature of the photon changes, neither frequency, period, wavelength, nor energy, just the orientation of the extension space linkage retained within unit space. Anyone who perseveres and reads the remainder of this section of Nehru’s article should find it painfully clear that Nehru’s rotational polarization concept is anything but simple.

I conclude this discussion by saying that Nehru did not come close to answering either of my questions, which he allegedly set out to answer. Under the circumstances, I hope he does not attempt a response to any additional questions I raised herein. Since we do not have answers to the first set, we certainly do not need the compounded complexity of more involved discussions in areas that have yet to achieve a reasonable foundation. Such a foundation can only be achieved by definitely answering the first two questions. We do not need to be confused and, perhaps for some, dazzled by increased layers of unfathomable complexity.