

The Matter of Creation

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Abstract

Walker has recently suggested modifying the subquantum kinetics matter-creation process with the aim of devising a steady-state creation cosmology. However, I believe that his paper unintentionally misrepresents the subquantum kinetics approach. The present paper addresses those errors and clarifies some aspects of matter/energy creation and destruction in subquantum kinetics. Inconsistencies in Walker's cosmology are also pointed out.

Résumé

Walker a récemment suggéré d'altérer le processus de matière création du subquantum kinetics avec l'objectif d'inventer un (steady-state) création cosmologie. Pourtant, je crois que son proposition mal représente sans intention l'approche de subquantum kinetics. Le présent papier s'adresse à ces fautes et explique des aspects du processus de matière/énergie création et destruction de subquantum kinetics. Des inconsistances dans le cosmologie de Walker sont aussi désigner.

Key words: Matter creation, cosmology, cosmological redshift, genic energy, subquantum kinetics, ether, gas motion.

1. INTRODUCTION

A recent paper by Walker⁽¹⁾ proposes replacing the problematic big bang theory with a stationary-universe, energy-conserving cosmology in which matter is created in intergalactic space through the capture of radiant energy from redshifting photons. He attempts to accomplish this by proposing a major ad hoc modification of the subquantum kinetics ether physics methodology. However, his stated objective could better be attained by developing an alternate theory rather than by working within the subquantum kinetics framework which is inherently incompatible with the modifications that he proposes. The purpose of the present paper is to comment on certain statements in Walker's paper that can be misleading and that may foster misconceptions about subquantum kinetics.

Subquantum kinetics is a novel approach to microphysics that is rigorously grounded in mathematical principles and concepts developed in the fields of nonequilibrium thermodynamics, reaction kinetics, and general system theory. Its methodology is set forth in detail in three foundation papers.⁽²⁾ Subquantum kinetics postulates that all space is filled with a nonequilibrium, nonlinear reaction-diffusion ether whose reaction kinetics are described by Model G [$A \rightarrow G$, $G \rightarrow X$, $B + X \rightarrow Y + Z$, $2X + Y \rightarrow 3X$, $X \rightarrow \Omega$]. This ether reaction system is postulated to operate in the vicinity of its critical threshold with the ether reactions being slightly supercritical in regions where the gravity potential is sufficiently negative and slightly subcritical in all other regions. In supercritical regions, subquantum energy potential fluctuations (ether concentration fluctuations) will spontaneously amplify and eventually form material particles. Also, photons will increase in energy (blueshift) and generate an energy "interest" called genic energy.

Observational evidence suggests that such an entropy-decreasing photon process may be responsible for generating much of the energy that celestial bodies radiate.⁽³⁾ In intergalactic regions where the ether reactions are subcritical (gravity potential is above the critical threshold), photons will diminish in energy and become redshifted. It has been proposed that this could account for the observed cosmological redshift phenomenon.⁽⁴⁾ Other tired-light mechanisms, such as the mechanism proposed by Marmet, might also make some contribution to the cosmological redshift.^(5, 6)

Let us begin by examining how Walker proposes to modify the subquantum kinetics matter creation mechanism. Walker begins by accepting subquantum kinetics as a starting point for his cosmology, stating:⁽¹⁾

"...let all space be occupied by a dynamic ether, which is reactive and diffusive at subquantum levels, and accept LaViolette's concept that early in this environment there will be a continual building up of subquantum energy concentrations in some localities in the ether, while in neighboring localities similar energy concentrations will be dissipating. Accept, further, that in very rare instances such energy concentrations may build into a formative subatomic particle."

He then proposes to modify subquantum kinetics by adding an ad hoc matter creation mechanism as follows:⁽¹⁾

Now, suppose that such a short-lived formative particle is immediately bombarded from various directions by energy waves emanating from stars and galaxies, further energizing the formative particle and building it to successively higher quantum energy levels until a proton or electron eventually results."

In addition, he proposes that energy conserving interactions between starlight photons and mature subatomic particles also promote the creation of matter, an idea also suggested by Marmet. Thus he suggests supplementing the subquantum kinetics matter-creation process with matter-creation mechanisms that are energized by intergalactic photons rather than depending on the order-creating tendencies of the subquantum reaction-diffusion ether. Further on, he suggests that these photon interaction mechanisms constitute the dominant processes for current matter formation and that the parthenogenic (virgin birth) creation mechanism of subquantum kinetics instead functions at a negligibly low level. Through this energy recycling mechanism, he attempts to modify subquantum kinetics so that the matter/energy content of its evolved physical universe is conserved and such that the overall entropy of that physical universe remains constant.

Walker was impelled to add this energy recycling mechanism in order to correct what he perceived to be a shortcoming of subquantum kinetics, for in Section 2.2 of his paper, he asks where would the energy come from to fuel the subquantum kinetics matter creation process. He states:⁽¹⁾

LaViolette's diffusive, reactive space medium, or ether, could provide the basic conditions that would allow for subatomic energy concentrations to evolve and later build by quantum steps, into atoms and larger states of matter, but where is the energy to fuel such an unlimited process of creation? ...where does the lost energy go as the energy waves are redshifted?

However, subquantum kinetics effectively embraces the issue of energy creation and destruction and, to imply instead that it doesn't, indicates that Walker may not have fully understood the subquantum kinetics approach. Let us take a closer look at this issue of energy creation and destruction.

2. THE CREATION AND DESTRUCTION OF ENERGY

In the context of subquantum kinetics, it is inappropriate to ask where the "physical energy" comes from that goes into creating material particles and genic energy, for the ether reaction-diffusion processes postulated to take place at the subquantum level are not driven by physical energy as we know it. Although the subquantum ether reaction processes are responsible for giving rise to physical potential energy, manifesting at the quantum level in the form of material particles and energy waves, physical energy of this sort does not exist at the subquantum level.

This confusion of terms can be overcome if we instead talk about *entropy* since this more flexible concept can be applied equally well to the subquantum etheric realm and to the observable physical universe. In the case of matter creation, the question Walker seems to be asking is what causes the entropy of the amplifying subquantum fluctuations to spontaneously decrease? Put another way, what causes the physical order of ether fluctuations (or energy waves) to spontaneously increase. The Second Law of Thermodynamics requires that entropy should spontaneously increase in an isolated system, not decrease. So, would not the spontaneous creation of matter and genic energy in supercritical regions violate this Law? The answer is no, because subquantum kinetics conceives the universe to be an *open* system, not an isolated system. As E. Shroedinger and I. Prigogine have both pointed out, an open system, such as a biological organism, can spontaneously *decrease* its entropy provided that in doing so it induces a greater increase of entropy in its environment. In such a case, the entropy of the system plus its environment will increase over time, in accordance with the Second Law. Thus a phenomenon such as biological growth which appears to be thermodynamically impossible when considering processes occurring solely within the boundaries of the system is easily understood in a wider context when one also takes the environment into consideration.

As another example, imagine the emergence of chemical waves in a chemical reaction such as the B-Z reaction. The waves are an example of order (negative entropy change), but the reaction processes that generate them are continually dissipating energy, increasing the entropy of the chemical solution.

Now, let us consider the situation that subquantum kinetics proposes. Figure 1 portrays a simplified schematic of Model G where additional ether states have been added above A and B and below W and Z with the entire reaction sequence being ranked along dimension line (**T**). **T** may be visualized as a higher dimension defined at all points in space by this ether reaction sequence. The physical universe is formed at one place along this flux, by ethers G, X, and Y. Since etherons continuously transmute into and out of its three ether states, the physical universe would constitute an *open* system. As such, order is able to emerge within its domain (entropy can decrease within the dashed boundary), provided that the reaction processes that pass "through" the universe experience an even greater increase in entropy as they transform along **T**. Thus the mystery of matter creation disappears when we adopt a perspective that transcends the physical domain. By the same token, physical energy can be legitimately created or destroyed within the physical universe. In subquantum kinetics, the First "Law" is a laboratory engineering approximation, rather than an absolute law.

In subquantum kinetics, physical form is regarded as an epiphenomenon of the underlying ether. Whether energy enters the universe (enters into physical expression), persists unchanged, or disappears from the universe (disappears from physical expression) depends on whether the underlying reactions are supercritical, marginally critical or subcritical. In questioning the ultimate cause of matter/energy creation or destruction, it is best to withdraw to the subquantum level and instead pose the question: "where does the subquantum flux come from?" Or alternatively, "what

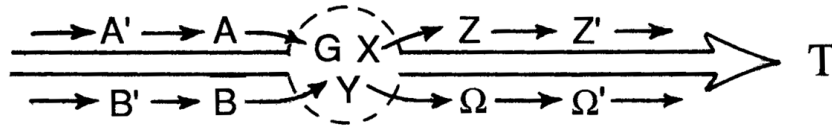


Figure 1. A suggested expansion of the Model G ether reaction scheme. The G, X, and Y ether substrates define the domain of the physical universe, conceived to function as an open system.

nonphysical gradient impels that subquantum flux?" However, from the standpoint of modeling physical processes, it is not crucial that this metaphysical question be immediately answered since subquantum kinetics takes the transmuting ether as the arbitrary starting point, the validity of a particular ether reaction system being judged according to how well it describes physical observation.

Walker seems to be proposing an energy-conserving cosmology, obedient to the First Law and marginally obedient to the Second Law in that the entropy of the universe is presumed either to remain constant or to increase at a minimal rate. Such a cosmology seems better suited to a universe that is conceived to function as an isolated system, rather than as an open system. But an isolated-system cosmology has the problem of being *unable to account for the ultimate origin of physical form*. The big bang theory suffers from the same dilemma. Walker attempts to recruit subquantum kinetics for the purpose of postulating an early creation phase. But in doing so, he introduces an *inconsistency*. For by using subquantum kinetics to account for the primordial origin of matter and energy, he relies specifically on the open-system negentropic qualities of its ether, the very same qualities that he then calls into question to justify switching over to his isolated-system energy-conserving cosmology. The simultaneous admission and denial of these negentropic aspects constitutes the essence of his logical contradiction.

Actually, Walker does not need to introduce an energy recycling modification to subquantum kinetics in order to accomplish his objective of a steady-state universe. For such a cosmology can be appropriately devised by working within the subquantum kinetics framework. That is, it is possible to imagine a universe in which matter and genic energy are created in supercritical regions at a rate that exactly balances the rate at which energy is destroyed in subcritical regions through cosmological redshifting (and possibly matter dematerialization). In such a universe the total amount of matter/energy would remain constant. It is also possible to imagine a situation in which our part of the universe, out to the present limits of observation, is experiencing net growth, but that conditions become increasingly subcritical much further out, such that matter/energy destruction gains the upper hand. Thus an overall constancy of physical entropy would be achieved by considering a sufficiently large spatial domain. We might accomplish the same thing by sufficiently expanding our time horizon. For example, a universe that tends towards the side of growth at the present time, at some future time, trillions of years hence, might tend towards dissolution. Such would be in keeping with the world cycle concepts of eastern mysticism.

3. MECHANICAL ETHERS AND INTERGALACTIC GAS MOTIONS

Walker concludes that matter creation through photon energy recycling would occur mostly in intergalactic space and that the resulting newborn gas would become drawn into the centers of galaxies by becoming entrained in inward flowing vortical ether currents. He describes this ether as behaving as an incompressible mechanical fluid which, when in motion, is capable of imparting

momentum to atomic nuclei. He hypothesizes that, through such interactions, inward flowing ether currents would induce intergalactic gas to migrate towards galactic centers.

Walker's ether bears a greater resemblance to the mechanical ethers of the nineteenth century than it does to the reaction-diffusion ether proposed in subquantum kinetics, the latter being grounded instead in chemical reaction concepts. More specifically, the concept of an incompressible mechanical ether is incompatible with the reaction-diffusion ether concept since the subquantum kinetic ethers are able to vary their spatial concentrations and hence are "compressible."

Another difference is that the subquantum kinetics ether does not mechanically interact with matter or energy. Matter moves only in response to electric and gravitational fields, these being essentially *concentration gradients* (potential gradients) in the X, Y, and G ethers. Although each of these gradients would induce a corresponding ether flux, such fluxes do not transfer momentum to material particles, nor do they exert a force on matter. Rather, the cause of motion is seated in the potential gradients. A material particle moves because the presence of the imposed field gradient disequilibrates its "dissipative structure" field pattern. The field pattern's motion is a homeostatic response in which the underlying ether reactions attempt to reestablish their steady-state equilibrium. Careful reading of the subquantum kinetics foundation papers and reaction-kinetic references cited therein should be of some help to those wishing further clarification of this concept of motion.⁽²⁾ Computer simulations of the ether reactions might also aid visualization.

In summary, the ether that Walker proposes for propelling intergalactic gas is very different from the kind proposed in subquantum kinetics. So by attempting to use the subquantum kinetics ether as the starting point for his cosmology, as a way of generating subatomic particles from subquantum fluctuations, he runs the risk of introducing a fundamental inconsistency into his cosmology.

Furthermore it should be noted that Walker's suggestion that ether winds induce intergalactic gas motion is incompatible with astronomical observation. If such a process actually took place, then every galaxy would be expected to leave a stream of hydrogen and helium gas trailing behind it due to its peculiar motion through the ether. This would be gas that the prevailing ether wind would have supposedly stripped off from the parent galaxy. But such asymmetric gas distributions are rarely seen. The Milky Way is believed to have a peculiar motion on the order of 600 km/sec, so why do we not observe a long trail of gas stretching downwind south of the galactic plane?

Moreover it is not entirely certain that gravity would be sufficiently strong over distances of millions of light years to be able to draw such matter inward at the required rate. In fact, subquantum kinetics specifically predicts that gravity tapers off with increasing distance. Such gravitational tapering would be able to explain why galactic disc stars tend to have constant galactocentric orbital velocities. Although others have suggested that such velocity constancy may indicate the presence of hidden mass in the outer parts of a galaxy and even in intergalactic space, such mass would have to vary with galactocentric distance in a specific fashion to account for these orbital observations.

Probably the most significant objection to the inward flow of matter is the abundant observations that gas in our Galaxy, and in others as well, predominantly flows outward, primarily as a result of explosive core activity.^(7 - 10) Although coronal gas within a few hundred parsecs of the plane of our Galaxy is presently observed to be moving predominantly inward toward the plane, such movements are outweighed by far greater quantities of matter moving radially outward along the galactic plane. So, on the whole, there would be a net outward movement of matter. Moreover considerations of galactic morphology have prompted astronomers such as Jeans,⁽¹¹⁾

Ambartsumian,⁽¹²⁾ and McCrea⁽¹³⁾ to propose creation cosmologies in which matter is continuously created at the centers of galaxies and forcefully thrown outward to form their spiral features, or even entire embryonic satellite galaxies. The subquantum kinetics matter creation process leads to precisely this kind of galactocentric creation and dispersal, which is exactly the opposite of what Walker's cosmology proposes.

This is not to say that subquantum kinetics does not also allow matter to be created in intergalactic space. It does. In fact, this is how matter would be created during the early stages of galaxy formation, thereby also explaining the existence of large intergalactic gas clouds. Moreover gravitational or electrodynamic interactions at some point would presumably draw this gas together into stars. However, creation would become increasingly centrifugal as a galaxy matured and proceeded into a galactic core explosion phase. Again, more detailed information about the subquantum kinetics matter creation process is given in the foundation papers.

4. FURTHER DEVELOPMENTS

I understand from recent communications I have received that Mr. Walker now maintains that the theory he attempts to develop is substantially different from subquantum kinetics. Hence it appears that he presently acknowledges that his "dynamic" "fluid" ether is fundamentally different from the transmuting, reaction-diffusion ether of subquantum kinetics. However, by asserting that his matter creation theory is not dependent on subquantum kinetics, he abandons his attempt to account for the initial origin of matter and energy. His photon matter-creation mechanism, being framed within the conventional matter/energy conserving paradigm, is unable to offer a solution. So he is left with a matter creation mechanism which depends on the preexistence of a reservoir of matter/energy, but which does not explain how that reservoir got there to begin with, the classic chicken-and-egg problem. Assuming that matter and energy has existed in the universe for eternity does not solve the problem; it merely avoids the issue.

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