

The following are my responses to Garvin's reply of 8/25/08 – now expanded to a 10 page document:

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8/30/08

Hi Garvin,

I've forward our dialog to Kent – he's got house guests over the long weekend, so likely we'll hear back from him sometime next week. In the meantime, I'll here make a "2nd Response" in an as-you-go manner in this dark green font.

FYI: Berney will be in the Bay Area 9/4-10 and he and I are planning to get together. Among topics for discussion will be whether my PSESM would best be submitted to SE/EM or Bridges (the ISSSEEM Journal, or the newsletter – Berney reports that more people read the latter). Another topic will be his comments as a trained historian on my "Timeline of the Global History of Esotericism."

Happy Labor Day,

Scott

Hello, Scott—

8/25/08

Here's a stab at replying to your questions and remarks of your 8/22 e-mail. You were aiming at discussion, and I think you've succeeded. It's beginning.

Thanks Garvin, I'm delighted. This is just what I was hoping might happen as a result of my ISSSEEM "fishing expedition."

VR, Garvin

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Garvin,

In working through the early sections of your "Initial Commentary," I'm trying to understand what it is you feel is the substance of the "remarkable insight" you credit me with at the bottom of page 5.

A: For me, what you have done is a synchronistic exploration of the range of 'vibrations' as consequences of Planck's observations. What he said is basically that all electromagnetic

radiation in terms of Maxwell's transverse e.m. waves come in quanta (photons) of the same size regardless of their frequency.

I don't think I'd ever heard this before – I've always understood "Planck's law" to be $E=h\nu$ and that this basic formula for the *energy* of the quantum is a direct function of frequency. Thus the notion of the "size" of a quantum eludes me – especially in light of (pardon the pun) what follows here later re the hyperbola.

A cosmic quantum at Planck point has no more energy it than a gross quantum with centuries of time span. However, we gross creatures don't experience quanta one by one, we experience them in great bunches and showers at the quantal and subtle levels. The difference in the aggregate is what Tiller is getting at in his paper "Human Psychophysiology, **Macroscopic Information Entanglement** and the Placebo Effect". (He used 'macroscopic' where you might have used 'gross'.)

Quantum mechanics is based on the idea of all e.m. energy coming in those little packets. But it really only talks about those things that happen at or below light speed in our classical reality. The work of van Vlaenderen and Waser in updating Maxwell and the experimental work of Nikola Tesla both indicate this assumption is most probably incomplete: the scalar aspects have been ignored (in the Buddhist or French sense of 'I didn't know about that', not in our sense of 'I knew but paid it no attention').

So, do you mean here to say that it is these scalar aspects that change the $E=h\nu$ formula in such a way that total E for any quantum, regardless of its frequency, is a constant !? This is certainly a stunning finding if it is shown to be the case.

With regard to the history of Planck's discovery, my source reference (http://en.wikipedia.org/wiki/Planck%27s_law) suggests some historical inaccuracies have become enshrined in the popular accounts. You might enjoy seeing how they tell the story.

A: I looked at that explanation. The work is O.K. (as I recollect) in the sense of being a traditional analysis of the statistical distribution that Planck developed. But if one thinks 'that's the all of it', one will run into situations where the analytic framework is not suited to the job. (That's a corollary to Gödel's Theorem about the limitations of consistent logical systems.)

But the main thing that stands out to me is your statement at the bottom of page 4 that "the human visible range is fairly well centered on the curve's maximum.

A. It is in daylight, where we diurnal creatures operate, and where the optimized retinal cone distribution comes into play. We have a different set of retinal sensors, the rods, that are much more light sensitive (i.e. only two or three quanta will cause one to fire). They work in shades of gray, are distributed farther out around the periphery of the fovea (the retinal spot we focus on to access our full mental focus or attention) and serve two functions: 1) peripheral vision, because, to attract our attention, they trigger on changes 'out of the corner of the eye' and alarm us to focus on that change with full attention, and 2) night vision: if you

haven't tried it recently, take a walking stick with you to feel your way along and try to walk around even a familiar place in the small phases of the moon (or when it's down). To see (very indistinctly) you must engage the rods by *not looking at your upcoming path*. This takes practice and never becomes second nature (unless perhaps thrown into a dungeon for a great length of time). You'll need the stick to feel your way along the path you want follow because you won't be able to reliably see the obstacles or holes in your way. 'Legally blind' people with problems with their foveal vision can navigate in this way about as well in the dark as the daylight, but cannot absorb written information nearly so well as normal folk.

"My recollection from high school physics is that the curve's maximum is dependent on the temperature of the black body.

A. Look at the various curves on the front page of the link above. The bottom one's at night (more or less); the middle ones are in increasing light levels and the top one's in blinding light. The location of the maximum does depend on the temperature of the radiating body. It's also of interest that the cosmic background radiation displays the same shape curve indicating that the universe itself is a cavity resonator with blackbody characteristics.

My understanding is that the curve you have shown is specifically that of a black body at T ~5000 degrees K.

A. Right. Same as above.

That the sensitivity of the human visual system peaks here is due to the fact that solar radiation peaks roughly here as a result of the sun's surface temperature (with only slightly modification by atmospheric filtering).

A. Right. Same as above. That's what I was referring to when I said that our eyesight seems to have adapted itself to the region of most photonic activity.

OK, but I remain unclear on the point you are aiming to making in the preceding paragraphs re Planck and the STS. Do you feel there is something special about biological adaptation to the solar spectrum in terms of Planck and the STS? I feel I'm missing something here.

That Planck's law applies across the entire SummaTime Scale may have important *theoretical* consequences that I have not yet grasped – by my reading of the general scientific literature however, its *practical* applications predominate *only* in the central portion of the STS.

A. Ah, but what you have said here is a MEST outlook. You have also said that the causal-subtle region is important to bioconstruction and biomaintenance, and that the subtle-gross region is important to the integraton of causal inputs to our perception of reality. And to Berney's delight (he is an historian, remember) that lives, fads, history, paleological eras, etc. also have a quantal interpretation. They are sort of a quantum of quanta and related to your PlanckPrint somehow.

I think I see what you're getting at here – that the quantum perspective *does* apply across the entire STS and will be key to understanding life and mind. Is that it? Thus, my “*practical applications*” ideas apply only to “thus far in our contemporary MEST framework.”

Be that as it may, I'm trying to relate the STS to existing scientific findings – trying to build the bridge, as it were – it is these “existing findings” that I am referring to here: our contemporary science *typically* uses the physics we think we understand re electro-magnetism (photons, Planck's equation for the energy of a photon, and Maxwell's Equations describing the dynamics of photon) in this meso scale only – is that not the case? Is there some basic physics that I've missed here in terms of current mainstream (MEST) thinking?

One theoretical consequence that I have discussed at length, however, is that the distinction that Brian Green was trying to draw between “quantum scale” events and “macro scale events” is a false distinction. I take reality to be quantal, period full stop.

A. I think that insofar as the consistent logical system of quantum mechanics goes, he speaks his conviction. But he has just drawn himself a ‘wall of the box’ in which he thinks.’ The problem with your statement is that when you say all reality is quantal, you draw (with the greatest conviction and good will) a similar wall. If you'd said that quantal reality is a major factor in our reality, I'd agree unequivocally. First off, the scalar phenomena that VanV and Waser describe (and Tesla experimented with) in their revised classical electrodynamics may not be quantal at all. It's about creating a topography of electric potential in the plenum to which charged particles respond as readily as to battery driven potential differences. These phenomena would seem useful in describing the etheric, emotional and mental fields that talented people perceive.

Point well-taken. I agree that what Adi Da has called “big-R Reality” (which he contrasts with “little-r reality” – “the world as we usually think of it”) has to include that which is somehow greater than, or contains, small-r reality. I should have said, “I take *manifest* reality to be quantal, period full stop.” Something like that. I stand corrected.

BTW: I had an email dialog with Julian Barbour a few years back in which I asked him if he thought that at the Planck scale – in the “Platonian” of his End of Time – reality is quantized or continuous. He replied that he had gone back and forth several times on the subject. From my current perspective, that sounds perhaps exactly right – perhaps at the Planckian limit, Reality is both. Kent: striated and unstriated “simultaneously?”

This I've attempted to develop via the notion of the PlanckPrint that you have not discussed in your Commentary.

A. Mea culpa, I have grossly neglected the PlanckPrint idea in my commentary. As of now, though, the next question to be addressed is how does the accumulation of PlanckPrints translate from the causal picture of reality through to the gross picture of reality where we are concerned about interpersonal relations, competitive activity, politics, justice, independence, etc., etc.

Ego te absolvo – I have only begun to try wrapping my head around your opus. You’ll find I’ve referred my readers on this point to the work of Carlo Rovelli and his colleagues who are working on this in the name of the “thermal time hypothesis.” Have you had a chance to take a look at his work? It appears to be straight MEST physics – but he starts with from the at least “MESTIC sounding” presumption that under all conditions, the observer is an integral part of the quantum system. Check it out.

Are there other implications that I’ve missed?

A Probably. But, me too. You are, figuratively speaking, drinking from a fire hose reading the commentary. There is an awful lot of my own background in the commentary, and it’s non-standard. In short, though, what I seem to have been ‘yoked’ to do is to reconcile modern MESTIC science with traditional science, and my commentary is a ‘first cut’ in your context. The very first thing that one runs into on this journey is that no one formalism (e.g. algebra, geometry, scientific paradigm, culture, industrial organization, form of government, etc.) can deterministically describe all of reality. This is the way reductionism works.

I’ll be daring a few more sips from the fire hose soon. The formalism I’m seeking is simply one that is “good enough.” My “yoga-informed intuition” tells me such is out there somewhere and that even if it only amounts to what we might refer to as “a beginning heuristic,” “a place to begin,” it will be an important step forward. Even if it merely allows us to begin the MESTIC adventure, it will meet my criterion for “good enough.”

In your discussion of the STS, you seem to agree with Berney that my terminology leaves something to be desired.

A. Yes. Words are at best tricky, at worst treacherous. That’s what the story of the Tower of Babel is all about. The mystery of symbology; how meanings attach to symbols in the multi-sensual way they do may be beyond our human capabilities. My comments (and I think Berney’s) stem from a scenario of intercommunication between your language and that of a MEST scientist.

Good. This is exactly what has to be worked out as we move forward, in my view. A great deal indeed will be riding on our terminology.

Would your objections be satisfied if I changed Quantian to Quarkian perhaps?

A. For me, yes, but you are the one to be satisfied ‘Quark’ is not a symbol for stable things. They are thought to exist only inside stable particles like electrons or atomic nuclei. There they lend the stable particle its mass and charge in energetic terms (and probably other qualities, too). These qualities can be ‘quantum teleported’ under appropriate conditions anywhere in classical space-time in literally no time at all.

I feel strongly that I should not be the only one to be “satisfied” here – if terminology is as important as I think it is, and if it is going to serve a genuinely communicative function as we move forward, then *it must be consensual*, however tentative here at this beginning. Thus, any suggestions for a replacement for “Quantian” will be more than welcome. I originally

picked this “point” as one that is said to represent the time it takes a photon to transit a proton. Berney thought a term that ties in with this might be one to consider – maybe PhoProtian, or the ProPhotian... might as well have some fun with it...

The terms Gross, Subtle, and Causal are not my terms -- they are from the tradition of esoteric spirituality. I understand full well that they will “not sit well with trained physicists” since part of their training is to eschew anything that even remotely smacks of esotericism.

A. I have really just become aware of these terms since our interaction began. As sketched in the concluding remarks, the Dalai Lama’s book, *A Simple Path*, depends for its impact on the use of those words. But most western readers, like me, do not ‘get’ the Dalai Lama’s context on first reading. Your STS goes a long way to bridge the gap. In the gross process of paradigm shift, these distinctions are important. A new idea of causality is arising.

So, here, my current plan for submitting PSESM to SE/EM (or maybe Bridges) is to flesh out a definition of these terms so that readers who are not familiar with them will at least know where they come from and what I’m trying to talk about.

Thus, my intended audience here is the Yogi Physicist – fellows like John Hagelin, and maybe, Mark Comings – individuals whose have found these terms useful in understanding their own inner experience.

A. While your thoughts are vital to such people, they should propagate beyond them. In your title, ... ‘the Scientific Map’ ... means to me the overall scientific map, not just that for our community.

To clarify: I feel that trying to convert the current MEST collective is an exercise in futility. If we can come up with some MESTIC basics that we feel “work,” we could then expand the discussion out to a larger MESTIC sphere. If it keeps on working, with whatever modifications have to be introduced over time, then eventually (at least in my dream scenario), the soft-line MESTs will come over, the hard-line MESTs will die off, and eventually the MESTIC view will prevail. Could take a good long while, but I feel strongly that we Biospherians haven’t a lot of time to waste.

Perhaps you could say a bit more about how my terminology “leads one to the standard, action-time driven perception of rigid linear causality” (p7). I’m not at all clear what you mean here.

A. O.K., let’s see... Linear causality in the context of consistent logical systems is the keystone of reductionist science. When I first saw causal, subtle, gross, it triggered 1) causal —> 2) subtle —> 3) gross. I think we share something more like ‘gross encompasses subtle encompasses causal’ in mutually interactive ways. An example perhaps is the tongue-in-cheek definition of a plan as ‘what would have happened if everything hadn’t gone all wrong along the way’ — not logically smooth, but very frequently borne out by events.

Right. This is an important point of discussion. I tried to get into this a bit in the “Nested Energies” section of my 2nd background paper – “Case Studies in Subtle Energy Science” – see especially the bottom of page 11 – “the technical note.”

The notions of “ascending causality” and “descending causality” have been discussed extensively in the esoteric literature – where some kind of holarchic structure is always assumed – typically with something like “Spirit” at the top and “Matter” at the bottom.

Other terms often used are cosmogenesis or macrogenesis vs microgenesis.

In my current view, Rovelli is one of the few scientists whose work bears directly on how a timeless formulation of QM might be elaborated, perhaps via statistical methods, to yield the sorts of macroscopic cause and effect processes that we ordinarily take for granted are “the way things work” – processes that occur *in time*. Almost certainly there is much more to this than I realize and fulfilling my call for a science formulated “in a timeless and acausal context” will be no mean feat. On the other hand, I also feel strongly that “we’re onto something” here.

On the other hand, I do appreciate your drawing the distinction between characteristic time (CT) and characteristic transaction time (CTT).

With regard to the “Quantum Hyperbole,” this section leaves me totally baffled, I’m afraid.

A Let’s see... Hyperbole has to do with extravagant exaggeration. A hyperbola is a math symbol that, in this case illustrates that one quantum is just as energetic as any other, whether it be high frequency- low period or low frequency high period. (The ‘fl’ rectangles are all of the same area.) This is an association that has been lost over time. We hear of ‘high energy physics’ in association with cosmic rays and similar phenomena. This association enables us to sense that the reason that a cosmic ray photon may cause drastic energetic consequences, it is not because it is inherently more energetic than a microwave photon, but because it has been able to ‘slip inside’ a nucleus and disrupt the quarks resident therein, whereas a microwave photon is ‘too large’ to do any such thing. There is a rather fanciful illustration of possible consequences in the book, *The X in Sex* that links the hemophilia in the male descendants of Queen Victoria’s extended family to the collision of a cosmic ray with one of her father’s testicles. (No sensation accompanies such a collision.) Among these descendants was the hemophiliac Tsarevitch Alexis, killed along with the rest of the Russian royal family in the Bolshevik revolution of 1918 so that no chance of return to monarchy would be possible. The cosmic ray aspect of this story may not be causally correct, but the eventual gross effects of hemophilia throughout European royalty in that period are a matter of historical record.

I stand corrected again. Hyperbola it is – I am often subject to flights of serious hyperbole, perhaps as the result of a cosmic ray disruption of one of the genes coding for one of my neurotransmitters or neuro-regulatory proteins.

I like the acronyms MEST and MESTIC.

The hyperbole you picture on page 10, reaching back now to my high school math, is generated by the reciprocal relation between frequency and wavelength given the SI units – I don't see the role of Planck's law here.

O.K., let's try another approach... The hyperbola is a restatement of your STS on two axes instead of one, and it opens new associations at the causal level that are sketched above. My story about the interaction with Tiller is about the differences between thinking about one quantum and the interaction of many quanta. As noted above, in his paper on psychophysiology, Tiller used the word 'macroscopic' where you would probably have used 'gross'. He wanted to make sure that no direct, linear extrapolation of quantal thinking would be promoted, especially in his name.

As per the discussion here in the beginning paragraphs, it seems that here your interpretation of the reciprocal hyperbola is that somehow all quanta have the same energy. This remains puzzling to me unless, as mentioned above, it turns out that somehow the scalar elements can be shown to produce a modification of Planck's law such that energy is a constant across all frequencies instead of $= hv$. Is this what van Vlaenderen and Waser show?

Another point: a key feature of the STS is that it stretches out, if you will, the high-frequency/short-time-ago portion of the time scale in such a way that what relates to our "inner life" is highlighted and brought into a balance with what we ordinarily think of as the "outer world." The way "outer reality" is typically depicted in MEST schemes reduces the potentially "inner" regions to virtual zeros, meaningless asymptotes, and non-entities. Know what I mean? My sense is that this feature of the STS is lost if we try to look at our overall situation as sentient beings in terms of this reciprocal hyperbola. But perhaps I'm still missing something here.

"The dynamism of the STS" is precisely what I deny in my extensive discussions of the PlanckPrint and the fact that the STS presents us with a *synchronic* and therefore *static* snapshot of reality – one that casts into question our very notions of time itself.

The PlanckPrint is, if I understand correctly, a snapshot of interactions in the 'Now', the ephemeral present instant. In the Now, there is no time, therefore stasis reigns. However, when we go to the next Now, the picture has changed, and time begins its flow. Quantum mechanics places the Now at the period of the Planck point quantum. This is my vision of what is being thought by quantum mechanics. In contrast, the things that occur in the upper reaches of Elmer Green's diagram do not follow the rules of q.m., and that opens up the investigation of vibrations of higher frequency than the Planck point (and also of longer CTTs than the Big Bang). (Now you could get into Hindu and Buddhist cosmologies, and find that there are differences between the two, Siddhartha, a very practical philosopher having opted to avoid the metaphysical, chose to analyze suffering in terms of causal dependence rather than extrapolating back to a Big Bang.) So while the PlanckPrint may be static, its temporal implementation is dynamic and supports the broad variety of life and feelings we experience. Have you read 'Time as

the Enabler of Process'? It's all about PlanckPrints and how they should work in the human system.

This seems to be yet another important area for discussion. I've been presuming that what Kent calls "the bookends problem" – i.e., what lies beyond the BigBangian and the Planckian – is a domain of *indeterminacy*. Off the Planckian end we may have a domain with sedenionic structure whose algebra and geometry are non-associative, non-commutative, and with zero divisors (as I understand it). (I've recently run across the work of Robert de Marrais, whom I gather is an fresh MIT alum, who seems to be making sense of the sedenion – but I cannot make any sense of what he is saying. Whatever it is, however, he seems to be saying it with considerable authority, getting his stuff published, etc... and you and Kent may well be able to make something of it.)

RE Elmer Green's diagram – as you saw in my slide presentation at ISSSEEM, I associate Elmer's "higher reaches" (levels 4-7) with the Q-P region of the STS (see also PSESM page 8 where the STS and the PFOMD are side by side). Who knows if this is correct – I certainly don't. How is it that you can say that phenomena here "do not follow the rules of QM?" My presumption is that "the rules of QM" will have to be modified in the Q-P region to account for what? Sentience? The realm known in stable lucidity from the alaya vijnana?

As for your article "Time as the Enabler of Process" – it is on the top of my "next sips list."

Maybe you can elaborate a bit further on what you are getting at here – I'm still chewing on the sections that follow.

I see a continuation of paradigmatic progress as Thomas Kuhn has described it. John Hagelin and Mark Comings did not get where they are without a strong dose of the currently prevalent paradigms. They use the inconsistencies in these paradigms, not to destroy them, but to go beyond them by including considerations their forebears did not.

Yet another important area in my view: "paradigms." I've started discussing this recently in my blog and I've got my SSR sitting right here on my desk. I see a marked *discontinuity* of the paradigmatic process on the horizon – more precisely, implicit in my "approach." I'm currently contemplating Kuhn's notion of the "incommensurability" – not helped at all by the fact that the edition I have of SSR (2nd, enlarged) has no cotton picking index – oh, hey, cool, turns out the 3rd edition does have an index and has it visible on-line at amazon via the "look inside" function. And it turns out they kept the same pagination of the 2nd so this index works for the volume I have). Here is a good quote for you: "the transition between competing paradigms cannot be made a step at a time... it must occur all at once or not at all." (p150)

In addition, I still remain unclear as well as to what exactly my "remarkable insight" was, in your view.

Max Planck himself was never clear as to the importance of his discovery of the quantum. But most of scientists from his day to now think it to be of prime importance. You have unified what was separate, and the very language has to change to accommodate your observations.

OK. I'll take this as a compliment. Thank you. (end of 2nd Response).

Best wishes,

Scott

And best wishes to you also,

Garvin