The following is Garvin's six page reply to my letter of 8/22/08 with his responses indented in the body of the original.

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.

VR, Garvin

==========

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. 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').

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.

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.

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.

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.

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.

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.

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.

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 out 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.

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, …'<u>the</u> Scientific Map'… means to me the overall scientific map, not just that for our community.

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.

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… Hyperbol<u>e</u> has to do with extravagant exageration. A hyperbol<u>a</u> 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 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.

A. 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.

"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.

A. 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 mechanicians. 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, Siddartha, 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.

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

A. 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.

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

A. 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.

Best wishes,

Scott

And best wishes to you also,

Garvin