

GREAT EXPECTATIONS IN THE "HOME SPACES" OF EARTH

It is becoming evident from current literature that an impressive, far-spread interest group of well-known scientists in physics and related fields are giving signals suggesting a new attitude regarding the incompatible theories of Einstein and quantum physics.

It's common knowledge that Einstein did not like a good number of things about the latter -- too free and easy, gravity-defying, no dice, etc., etc. -- and that quantumists were not fond of Einstein's obstinacy. Thus as physicists and cosmologists labored to realize a superstructure that would perform as perfectly as quantum mechanics, there ensued an era of downplaying Einstein and overplaying quantum theories...to what degree neither side would admit.

However, at this time the liberalizing attitude being considered here hints quite strongly that reexaminations in some of the conflicting areas might result in adjustments or revisions on one or both sides. The goal anticipated would be mutual adaptations agreeable with those Einsteinian principles found not to be immovable.

Enter now a science writer and author named Mark Buchanan. He straightaway convinces us that his research article -- as published in New Scientist magazine issued 3 Nov. 07 -- is about as entertainingly informative as any such effort could be. We regret that our review of his review was a bit late getting onto the Metaparticle website, and we hope you can obtain a copy of his actual article. (See box at end of our text.)

Buchanan's overview clearly and briefly gives Einstein's key attitudes concerning quantum dynamics. That's not current news, but the thrust of the writer's exposition points to the arising of what he sees as a scientific willingness to reexamine certain questions relating to quantum mechanics. What that aspect of quantum theory can accomplish, every time, for many an experiment, is not in question. It is rather its incompatibilities with Einstein's theories concerning gravity and other major factors in classical physics that years ago brought about a more or less controversial schism.

We will give the names featured in Buchanan's researches, plus a précis with each that builds the overall picture of what we consider to be an important change in attitudes. These would affect both quantum theory and the positions of its one-time opponent, Albert Einstein:

- Joy Christian, Univ. of Oxford: Claims that when physicists suppose false assumptions in order to evidence the impossibility of developing more realistic quantum theories, they fail to prove anything of import. Christian is not alone in questioning whether quantum theory is the ultimately "final" one.

- **Gerard 't Hooft**, Univ. of Utrecht, Netherlands: Advises that the word inaccurate should be applied to any quantum theory yielding the answer "maybe".
- (Synthesis by **Buchanan**): Many researchers struggling to unite quantum theory with Einsteinian gravity have become convinced that a "pre-quantum world of objective certainties" might be a possibility. Such would make it clearer how quantum physics in all its strangeness could have emerged from something closer to our sense of reality.
- **John Bell**, CERN Laboratory: (Too long for synopsis; but central concern is the "spookiness" of particle entanglement -- mostly accepted as proven -- showing that entangled pairs of particles a billion miles apart can exhibit identical characteristics that appear at the same moment. Such non-local effects have been seen as incompatible with Einstein's special theory of relativity.)
- **Philippe Grangier**, Inst. of Optics, Orsay, France: Seems reluctantly to believe that Bell's theorem is "too good to be true" and that Joy Christian is mistaken. The importance of this discussion, however, is the fact it points out the willingness of many physicists to show uncertainty about whether quantum theory is actually the originating foundation for theoretical physics.
- **Lee Smolin**, Perimeter Inst. in Waterloo, Canada: Innovates some of the most suggestive leads dealing with the inability of theorists to apply quantum principles to the entire universe. Smolin's findings imply that such an approach can work only in its own distinctive areas, as though representing deeper realities. Similar ideas expressed by 't Hooft aver that the spatial vacuum evolves deterministic details ignored by quantum theory -- which might explain why quantum randomness renders its theories unable to make specific predictions.
- **Markus Aspelmeyer and colleagues** at Univ. of Vienna have created entanglements between photons and much larger objects, aiming to explore why quantum behavior is clearly revealed on extremely small scales, but is never encountered in everyday objects.
- Regarding quantum superpositions that collapse during experiments with large objects, **Roger Penrose** at Oxford has put forward the intriguing idea that such collapses may reveal a link with gravity.
- Meanwhile **Stephen Adler** at the Inst. for Advanced Studies in Princeton has for the past 20 years been developing "emergent quantum theory". His approach is to build that aspect of quantum physics from the base up, starting at a hypothetical originating level that obeys classical physics. In this Adler, like Smolin and Markopoulou, assumes the reality of pre-quantum physical fields as yet unknown to that science. But these are postulated to have basic features that could allow something like quantum field theory to be revealed at higher levels, establishing a basis for quantum theory as a whole.

Joy Christian of Oxford disagrees, however, with the conclusions of physicists who insist more realism in quantum theory is impossible. Christian maintains that on the contrary there are adequate factors indicating that a correct evaluation of spin states in entangled photons shows that when taken only jointly, they remain connected regardless of distance.

(The present reviewer, be it known, is not pretending that he himself understands how a permanent connection between entangled photons confirms the possibility of more realism in quantum theory.)

Buchanan takes note on page 37 in New Scientist (3 Nov. 07) of the long but unsuccessful attempt to combine quantum theory and Einstein's work on gravity. I was indeed glad to hear that considerable numbers of researchers have become quite open to the idea which we with our metaparticles think of as a sort of master key to expansive scientific progress. It concerns local spatial areas and their material contents. Now being discussed, for example, is the idea that a much more objective and certain "pre-quantum" world might reveal the answer to this question: Could the strangeness of quantum physics be derived from origins much more familiar?

Careful attention is also given by Buchanan to the importance of Bell's theorem in determining whether the latter's idea of hidden variables conflicts with quantum theory. It has apparently been decided by a good many experts -- as well as by Bell himself -- that they do conflict. Since Metaparticles is bound by our basic theoretical principles to endorse a single absolute reality underlying all existence, we take no sides pending decisive proof. Meanwhile we go along as learners that one pole of an entangled particle can influence its opposite pole at any distance, without delay.


May we add that from the metaparticle outlook, the two energetic poles of the electron, for example, may be looked upon as an entanglement; however, we have evidence that such a situation is primarily a balanced expression of duality at the base of existence.

Buchanan does suggest, however, viewing Joy Christian's postulations, that Einstein might have been assuaged to find there is presently a seeking, as it were, for a more profound reality through quantum theory; one providing more rationality and moving closer towards classical physics. (It does indeed cause us joy to see physicists turn to questioning quantum theory along several major lines. Within our outlook, quantum rules are natural to a chain of specific spatial conditions in an interpenetrating continuum.)

What is definitely news is the movement within science to revisit points of conflict, re-explore mysteries, compare recent ventures-in-depth concerning quantum origins, and (I suppose it is appropriate to say), invite a little more friendly cooperation on both sides.

One intimation of such a liaison may be the recently spreading hypothesis that some laws of nature may be unique to the various reality levels in space, or may work differently as matter reduces in size to provide for less ponderability and more intense reality. (All hail to the Colliders!)

May I observe with the above input that it denotes where metaparticles (or hyperphysics) could play necessary and provable roles in a sort of inter-worldly enhancement of knowledge.



Every science reader knows what a worldview is, though they are aware how few among even the "cultured" entertain accurate such depictions. But the writer Mark Buchanan has gathered some highly promising information from an impressive group of scientists around the western world, and I think it warrants a good-chance prediction. Of course an unaccredited website publisher is never depended upon for scientific predictions, so let me just rub my magic sphere and say this:

If attitudes indicated in Buchanan's research are maintained... If they indeed bring about a new understanding of quantum principles... If the sufficient colliders now available discover "new species" of particles... Then this final element: If such particles can be identified as indigenous occupants of one or more spatial areas near Earth. (These differing "worldfields" may be non-terrene in overall characteristics, but will still be our "home spaces".)

If all those ifs click, then I prognosticate that at least one discovery deserving the name hyper-matter, or substantive metaphysical matter, will eventually be accepted.

(Providing all "conscient" elements that could be associated with it are not associated with it in the material sense -- but are recognized as different levels of cosmic values prevailing in their separate, co-equal domain.)

What the discovery of hyper-matter and the worldfield continuum will eventually bring

By providing such an indicative comparison pool, Mark Buchanan will, I believe, have done much to help science in a direction vital to our future. Onlookers like myself can do little to help the actual work needed to propel trends. However, there do exist items of information, mostly misunderstood and in the past misused, which could with care provide some useful routes to science. Without demeaning the truths that have for centuries survived unreasoning

condemnation, it must be acknowledged that metaphysics as a generality has confused quite a bit more along the paths of science than it has contributed. But if a clear distinction can in the future be made between what is substantive and what is predominantly conscient in fields explored beyond "normal materiality", the growth of knowledge will be vitally served.

NOTE

**For readers who would like to view the original article by Mark Buchanan published in New Scientist magazine issued Nov. 3-9/07: New Scientist at <http://archive.newscientist.com> (As given, pp. 36-39--"Quantum Untanglement")
-A.P.Perella, "METAPARTICLES"**

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