DISCUSSANT RESPONSE

by

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to **Herbert Pietschmann's**

SCIENCE AT AN END? THREE LIMITS OF SCIENTIFIC KNOWLEDGE

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COMMENTARY

TO Prof. Herbert Pietschmann's paper "Science at an End? Three Limits of Scientific Knowledge"

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In his paper the author clarifies the term "limit", distinguishing border and bound. The first limit of scientific knowledge discussed was a border where "there is something though we don't know the actual structure of it". But in the section stating the technical limit he assumed that "scientific knowledge is based on the interplay between theory and experiment" leaving out the most important part, the inspiration, which should belong to what he referred to as "something though we don't know the actual structure of it".

He also pointed out how the limit expands as refined equipment develops, saying "Nobody can tell for sure whether we will some day find out that the electron is also a particle with internal structure or how long it shall remain 'point-like'". It is no longer some day but today! Professor Y. S. Kim at Sung Hwa University (of which I am president) presented a recent paper modelling an electron as a charged conducting sphere with a definite size, which is far less than 10^{-15}m. (I have brought a few copies of the paper along with me, so anyone interested may come forward after the session.)

He also mentioned the view that the only bound was technological and mentioned the Laplacian demon. But there comes a time for all truth to be revealed. According to the Divine Principle proclaimed by Rev. Sun Myung Moon, we have fallen from the ultimate truth and become ignorant. Therefore, when the real truth comes, all transcendental processes cease and no Lapacian demon can go around and play his role any more.

In his Methodological Limit he mentions "a new kind of principal impossibility," but he has ignored a greater harmony between the Uncertainty Principle and Newton's Law of Physics. One can derive Newton's Law of Motion from the Uncertainty Principle (which problem I assigned as home work for my students many years back if I recall).

In his "A Profound Confusion" he cautioned that scientific method is not "All-that-is", and acknowledged separation of the one and the rest, and the border called the ontological limit of scientific knowledge. In the D. P. the universe consists of two parts: the invisible substantial world and visible substantial world. Science deals with the latter.

In the Method of Science he concluded:

i) every notion is properly and uniquely defined
ii) there are no contradictions within this description
iii) there is a sufficient reason for everything to which this description applies.

It would be better if one can put these as follows:

i) every notion is properly and uniquely defined within a tolerance of $_{a}\Delta q_i \cdot \Delta p_i \geq \hbar/2$

ii) there is harmony within this description

iii) there is give-and-take action for everything to which this description applies.

And with three axioms for an experiment:

i) it must be reproducible

ii) its results are given quantitatively

iii) it is a sufficiently simplified system so that so-called "systematic errors" can be controlled and corrected for.

In his Ontological Limit he mentions "Autonomy": free decisions. I would be wise at this point to recall the famous Fermat Principle. Light travels from one point to other in the shortest time required, between two media, say. Though it may look like there are many ways with free decisions, these are only conceptual and there is actually only one definite way, what the Scripture calls "in one accord". I would not deny that there are many versions of D#, produced by many instruments; but they all represent the same fundamental frequency, and in that sense I claim oneness.