Natural Philosophy, Chirality, and Other Physical Idealized Objects. Why Physics Needs New Ones?

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The great book of mankind ***"Philosophiæ Naturalis Principia Mathematica"*** by Isaac Newton was the top achievement and the beginning of decay of traditional natural philosophy that spent a lot of efforts thinking about most general problems of God, Nature, Space, and Time. During two centuries many new natural sciences have appeared, and they have made old natural philosophy useless and senseless. New natural sciences use experimental data, mathematical proofs, and new systems of idealized images, which model real objects. Traditional natural philosophy was considered as old fashion and even harmful way of thinking. In former the Soviet Union and modern Russia even terms "natural philosophy" and "philosophy" had got very negative meaning due to few conflicts between Communist Party philosophy, on the one hand, and biology and physics, on the other hand.

Now in the XXI century, a question arises again: is there any place for natural philosophy in modern science? The wise Albert Einstein protected philosophy. He brilliantly recognizes the new status of philosophy: "Philosophy is like a mother who gave birth and put all other sciences on its feet. So it should not be despised in nakedness and poverty." The famous Russian scientist Anatoly Buchachenko in his book "The Beauty and Fascination of science" compared philosophy with the theology of civilization. It is evident that natural philosophy alone will be helpless and therefore useless without close collaboration with physics, mathematics, and other natural sciences. The history of physics knows a triumph of intellectual cooperation of quantum mechanics and natural philosophy in the XX century. Niels Bohr had long term philosophical discussions about foundations of quantum mechanics with his colleagues, and those discussions have transformed previous mathematical exercises into new exact physical science. Nobel Prize of physicist Max Born for his interpretation of a wave function $\Psi(r)$ was a result of a symbiosis of physics, mathematics, and new natural philosophy.

However, a triumph of quantum mechanics in the XX century has led to a situation that can be called a crisis of a fundamental physics in the early XXI century. This new crisis is similar to the crisis of physics in the early XX century. Most advanced parts of a theoretical physics are too mathematized but do not produce new reliable physical ideas or results, and the results could not be proved by any experiments. New mathematical formulas have no physical meanings and exploit old physical images without producing new ones. Thus those theories are no more than useless mathematical games that pretend to be new physics. Those physical theories have no own persons similar to great Niels Bohr who could give

natural philosophic interpretations of new theories (if it could be possible, in principle).

No one should think that only quantum field theory and cosmogony stimulate the creation of a new physics and a new physical ideology (natural philosophy). Modern branches of real physics can put forward new fundamental problems which are as important as origins of Big Bang. Some examples of such problems can be shown by solid state physics and physics of magnetism. Problems of spin chirality, magnetic frustration, and space and mirror symmetries of spin systems are problems of both physics and natural philosophy of physics. Careful analysis or fundamental problems of those physical phenomena allows predicting and discovering new effects.

Another origin of the crisis of modern physics seemed to be the absence of new physical images. Modern theoretical physics, as a product of European civilization, exploits a very limited set of simple idealized images such as point, trajectory, crystal lattice, oscillator, wave, physical field, string, etc., that can be described mathematically. However, new physics and new physical objects and phenomena evidently need new idealized images rather than the usage of old ones. But where it is possible to find these new images? It is very likely that these images can be found in cultures outside European civilization. Even the use of new images and new terms will help and allow understanding and describing new physical phenomena, which are not understood now or out of frames of modern physics. Here another problem of conserving Japanese, Russian and other languages as languages of physical sciences arises…