



Neutrosophy-based Interpretation of Four Mechanical Worldviews

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Abstract. We take into consideration four mechanical worldviews: the single "gravity" (as $\langle A \rangle$, or t); the single "repulsion" (as $\langle \text{anti}A \rangle$, or f); the "gravity and repulsion" taking the same object as carrier (as $\langle \text{neut}A \rangle_1$, or I_1 = first type of subindeterminacy); and the contradictory objects of "gravity and repulsion" formed by natural external force and natural repulsive force (as $\langle \text{neut}A \rangle_2$, or I_2 = second type of subinde-

terminacy), and interpret them by employing Neutrosophy, expanding their application scope. We point out that the fourth mechanical worldview is consistent with the Neutrosophic tetrad, and that the natural external force and natural repulsive force are the correct qualitative analysis of the natural forces of the universe, and thus it can be used to interpret a variety of phenomena of the universe.

Keywords: Mechanical worldview, Neutrosophy, Neutrosophic tetrad, natural force of the universe, natural external force, natural repulsive force.

1 Introduction

Various mechanical worldviews were proposed through the ages. We select four mechanical worldviews to be interpreted through neutrosophic theory and method.

Neutrosophy, introduced by Prof. Florentin Smarandache in 1995, is a new branch of philosophy that studies the origin, nature, and scope of neutralities, as well as their interactions with different ideational spectra.

This theory considers every notion or idea $\langle A \rangle$ together with its opposite or negation $\langle \text{Anti-}A \rangle$ and the spectrum of "neutralities" $\langle \text{Neut-}A \rangle$ (i.e. notions or ideas located between the two extremes, supporting neither $\langle A \rangle$ nor $\langle \text{Anti-}A \rangle$). The $\langle \text{Neut-}A \rangle$ and $\langle \text{Anti-}A \rangle$ ideas are both referred to as $\langle \text{Non-}A \rangle$.

Neutrosophy is the base of neutrosophic logic, neutrosophic set, neutrosophic probability and statistics, which are used in engineering applications (especially for software and information fusion), medicine, military, cybernetics, and physics.

Neutrosophic Logic (NL) is a general framework for unification of many existing logics, such as fuzzy logic (especially intuitionistic fuzzy logic), paraconsistent logic, intuitionistic logic, etc. The main idea of NL is to characterize each logical statement in a 3D Neutrosophic Space, where each space dimension represents respectively the truth (T), the falsehood (F), and the indeterminacy (I) of the statement under consideration, where T, I, F are standard or non-standard real subsets of $]0, 1+[$ without a necessary connection between them.

For example, we talk about two opposite forces, gravity and repulsion, but also the "gravity and repulsion together" (= indeterminacy, from neutrosophy). Then, we also split this indeterminacy into two indeterminacies (see reference [3]) such as:

I_1 = gravity and repulsion with the same carrier, and
 I_2 = gravity and repulsion without the same carrier.

Smarandache introduced the degree of indeterminacy/ neutrality (i) as independent component, and defined the neutrosophic set, coining the words "neutrosophy" and "neutrosophic". In 2013, he refined/split the neutrosophic set to n components: $t_1, t_2, \dots, t_j; i_1, i_2, \dots, i_k; f_1, f_2, \dots, f_l$, with $j+k+l = n > 3$. In our article we have t, i_1, i_2 , and f . Hence indeterminacy i was split into two subindeterminacies i_1 and i_2 .

More about Neutrosophy can be found in references [1-3].

Obviously, we have broad application prospects when combining various mechanical worldviews with Neutrosophy.

We now interpret the four mechanical worldviews through Neutrosophy, for issues related to the effect of "gravity" and "repulsion", and the like.

2 Isaac Newton (English scholar): the mechanical worldview of single "gravity"

Newton's "law of gravity" is the beginning of the mechanical worldview of single "gravity". But nonetheless, it can only be used to describe the attraction between objects, and not the repulsion caused by light and heat radiation of celestial objects, therefore it cannot be used to solve the issues of mutual repulsion and departure between celestial objects. In addition, the mechanical worldview of single "gravity" does not explain the celestial objects' lateral motion and gravitational instantaneous transmitting, and it does not reveal the nature of gravity. So, in many ways, Newton's "gravity" is erroneous and one-sided, and it can not be taken as an accurate qualitative analysis of the natural forces of the universe.

However, according to the neutrosophic viewpoint, any theory, or law, holds three situations: truth, falsehood, and indeterminacy. Because the law of gravity applies for some issues, we conclude, after interpreting it through Neutrosophy, that it is conducive to further development and improvement.

3 Edwin P. Hubble (American scholar): the mechanical worldview of single "repulsion"

The mechanical worldview of single "repulsion" is derived by Hubble according to the galaxy redshift, the expansion of the universe, and the light and heat radiation of celestial objects, in order to solve the issues of the mutual repulsion and departure between them. While not only this view cannot be used to solve the problems of celestial objects' lateral motion, but also cannot answer the reason that the apple should indeed go down to the land, therefore, in general, the mechanical worldview of single "repulsion" is fallacious. Consequently, the "Hubble's law" also needs to be further developed and improved.

4 Albert Einstein (American scholar): the mechanical worldview of the "gravity and repulsion" taking the same object as the carrier

Adding to gravity and repulsion the cosmological constant (repulsion) on a "gravitational field equation" of space-time warpage, Einstein built another mechanical worldview. Later on, Einstein found that the universe devised by gravity and repulsion is a static one, and thus not meeting the dynamical universe as the observed data. Thereby, the cosmological constant (repulsion) was abandoned. Actually, this view was not firstly proposed by Einstein: before that, Kant, Hegel, Marx, Engels, Lenin, and others, have already enunciated similar viewpoints of "attraction and repulsion". Even if Einstein's cosmological constant (repulsion) was considered to be accurate for a long time, in modern physics the mechanical worldview of the "gravity and repulsion" was rebuilt, disposing "gravity" to explain the mutual attraction between objects, and "repulsion" to define the mutual exclusion between objects. But that's just subjective wishful thinking. Because this mechanical worldview takes the same object as the carrier, according to a philosophical judgement criterion, the "gravity and repulsion" do not constitute two contradictory objects, therefore we face a fabricated and false concept. To sum up, using the primary and the secondary contradictions in modern physics to discuss the mutual transformation of the "gravity and repulsion" on the same celestial object is misleading, and the mechanical worldview of the "gravity and repulsion" taking the same object as the carrier is erroneous.

5 Luo Zhengda (Chinese scholar): the mechanical worldview of natural external force and natural repulsive force

This mechanical worldview is fundamentally different from Einstein's view. Taking natural external force and natural repulsive force as the core, this mechanical worldview points out that the natural external force is the energy field of the universal space, having contraction and aggregation as natural property. The mutual aggregation of celestial objects is not the mutual attraction, but the mutual aggregation follows the contraction and aggregation of the energy field.

Enacted by the natural property of contraction and aggregation of natural external force, the energy of celestial objects' core accumulates. The mass can also be changed into energy, thus creating the radiation of repulsion, and forming the celestial objects' repulsion field taking celestial objects' core as the center. The mutual opposition and rejection between celestial objects are caused by the actions of contraction and aggregation of natural external force.

Essentially, all natural external forces and natural repulsive forces are energy matter. Natural external force is caused by aggregation of celestial objects, and natural repulsive force is provoked by repulsion of celestial objects. Natural external force is taking the space energy field as the carrier, and natural repulsive force is taking the celestial object of mass as the carrier. The two carriers of natural external force and natural repulsive force are different and contradictory, and thus meet the philosophical condition of contradiction.

This mechanical worldview is consistent with the principle and analysis of Neutrosophy.

In reference [2], the dialectical triad thesis-antithesis-synthesis of Hegel is extended to the neutrosophic tetrad thesis-antithesis-neutrothesis-neutrosynthesis.

A neutrosophic synthesis (neutrosynthesis) is more refined than the dialectical synthesis. It carries on the unification and synthesis regarding the opposites and their neutrals too.

A neutrosophic synthesis (neutrosynthesis) includes $\langle A \rangle$, $\langle \text{Anti-A} \rangle$, $\langle \text{Neut-A} \rangle$, $\langle A \rangle$ plus $\langle \text{Anti-A} \rangle$, $\langle A \rangle$ plus $\langle \text{Neut-A} \rangle$, $\langle \text{Anti-A} \rangle$ plus $\langle \text{Neut-A} \rangle$, $\langle A \rangle$ plus $\langle \text{Anti-A} \rangle$ plus $\langle \text{Neut-A} \rangle$, and so on.

Similarly, the mechanical worldview taking natural external force and natural repulsive force as the core also considers and includes various situations and combinations related to "gravity", "repulsion", and the like.

Therefore, natural external force and natural repulsive force are correct qualitative analysis of the natural force of the universe, thus this mechanical worldview is flawless and can be used to interpret a variety of phenomena of the universe. Detailed information can be found in references [4-8], where Luo Zhengda coined the concepts of "natural force of the universe", "natural external force", and "natural repulsive force".

6 Conclusions

Natural external force causes the aggregation of celes-

tial objects, while natural repulsive force causes the repulsion of celestial objects. By combining the theory of the natural force of the universe with Neutrosophy, we conclude that the two theories complement each other, creating new paths for interpreting and dealing with all sort of natural phenomena.

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