

# Expanding Hegelian Triad Thesis, Antithesis, Synthesis with Neutrosophy and Quad-stage Method

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Abstract: Considering the variety of division of development stages, as well as "middle transition stage", "repose stage" and so on that are related to Neutrosophy, and combining the original Quad-stage Method including the special universal relations, this paper presents various "zero-stage", "one-stage", "two-stage", "three-stage", "four-stage", "negative-stage", "mixed-number-stage", "complex-number-stage", "hypercomplex-stage", "matrix-stage", and other multiple-stage, these are differentiating from Hegelian triad thesis, antithesis, and synthesis of development. Applying original Quad-stage Method, "one divides into two" is expanded into "one divides into many"; based on this, some "three-stage" (including neutrosophic three-stage), and "four-stage" (besides original Quad-stage) are presented. The examples of the development stages from Shakespeare's "Hamlet" to film "The Lion King" and the expansion of Internet Thinking are discussed.

Key words: Neutrosophy, Quad-stage, development, division of stages, Hegelian triad-stage, multiple-stage, expansion of Internet Thinking

## Introduction

One of Hegel's famous viewpoints is that, any development is experiencing the three stages of thesis, antithesis, and synthesis; namely, the starting point for the development (thesis), the opposite is appeared (antithesis), and the negation again (synthesis). This means that, antithesis negates thesis, synthesis negates antithesis, and synthesis is the Negation of Negation.

However, Hegel's "triad-stage" is simplistic and inflexible, thus it is only suitable for extremely simple cases. Along with the social progress and the development of science and technology, facing all sorts of complicated things, including the virtual world of the era of information and internet, people want to break through the fetter of traditional "triad-stage", and consider the division of development stages according to the actual situation, therefore there have been many divisions of development stages that are differentiating from Hegelian triad thesis, antithesis, and synthesis of development. Accordingly, we try to expand Hegelian triad-stage with Neutrosophy and quad-stage method, in order to meet the need of the intricate world.

## 1 Basic Contents of Neutrosophy

Neutrosophy is proposed by Prof. Florentin Smarandache in 1995.

Neutrosophy 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 <A> together with its opposite or negation <Anti-A> and the spectrum of "neutralities" <Neut-A> (i.e. notions or ideas located between the two extremes, supporting neither <A> nor <Anti-A>). The <Neut-A> and

<Anti-A> ideas together are referred to as <Non-A>.

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

Neutrosophic Logic 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 dimension of the space 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 necessarily connection between them.

More information about Neutrosophy can be found in references [1 , 2].

## 2 Basic Contents of Quad-stage

The first kind of "four stages" is presented in reference [3], and is named as "Quad-stage". It is the expansion of Hegel's triad-stage (triad thesis, antithesis, synthesis of development). The four stages are "general theses", "general antitheses", "the most important and the most complicated universal relations", and "general syntheses". They can be stated as follows.

The first stage, for the beginning of development (thesis), the thesis should be widely, deeply, carefully and repeatedly contacted, explored, analyzed, perfected and so on; this is the stage of general theses. It should be noted that, here the thesis will be evolved into two or three, even more theses step by step. In addition, if in other stage we find that the first stage's work is not yet completed, then we may come back to do some additional work for the first stage.

The second stage, for the appearance of opposite (antithesis), the antithesis should be also widely, deeply, carefully and repeatedly contacted, explored, analyzed, perfected and so on; this is the stage of general antitheses. It should be also noted that, here the antithesis will be evolved into two or three, even more antitheses step by step.

The third stage is the one that the most important and the most complicated universal relations, namely the seedtime inherited from the past and carried on for the future. Its purpose is to establish the universal relations in the widest scope. This widest scope contains all the regions related and non-related to the "general theses", "general antitheses", and the like. This stage's foundational works are to contact, grasp, discover, dig, and even create the opportunities, pieces of information, and so on as many as possible. The degree of the universal relations may be different, theoretically its upper limit is to connect all the existences, pieces of information and so on related to matters, spirits and so on in the universe; for the cases such as to create science fiction, even may connect all the existences, pieces of information and so on in the virtual world. Obviously, this stage provides all possibilities to fully use the complete achievements of nature and society, as well as all the humanity's wisdoms in the past, present and future. Therefore this stage is shortened as "universal relations" (for other stages, the universal relations are also existed, but their importance and complexity cannot be compared with the ones in this stage).

The fourth stage, to carry on the unification and synthesis regarding various opposites and the suitable pieces of information, factors, and so on; and reach one or more results which are the best or agreed with some conditions; this is the stage of "general syntheses". The results of this stage are called "synthesized second generation theses", all or partial of them may become the beginning of the next quad-stage.

### 3 Applying original Quad-stage Method to expand "one divides into two" into "one divides into many"

If considering the "all stages of development" as "one", the discussion of the "division of development stages" is actually the issue that "this special "one" can be divided into how many parts". To do this, firstly we apply the original Quad-stage Method to discuss the general meaning problem of "one can be divided into how many parts" in the area of philosophy, namely to expand "one divides into two" into "one divides into many".

The first stage, taking "one divides into two" as "thesis", and studying it carefully.

As well-known, "one divides into two" is a famous philosophical term. Vladimir Lenin said in his Philosophical Notebooks that, "The splitting of a single whole and the cognition of its contradictory parts ... is the essence ... of dialectics."

For "one divides into two" itself, it can be also "splited". For example, it can be splited into ancient "one divides into two" and modern "one divides into two", Chinese "one divides into two" and foreign "one divides into two", and the like. Among them, the most famous ancient Chinese "one divides into two" is "Yin-Yang theory". In addition, people have recognized that "one divides into two" is the general theory and method, but it cannot be understanding mechanically, we should see that the divisibilities of things have many contents and forms.

The second stage, taking the opposite of "one divides into two" as "antithesis", and studying it carefully also.

Besides "one divides into two", we can find the viewpoints of "one divided into three", and "one divides into many" in some literatures (in which the "many" is a positive integer greater than three, for example, "one divides into four", "one divides into five", and so on). In fact, the ancient Chinese Miao philosophers already presented the concept of "one divided into three". In addition, in some sense, the concepts of  $\langle A \rangle$  together with its opposite or negation  $\langle \text{Anti-}A \rangle$  and the spectrum of "neutralities"  $\langle \text{Neut-}A \rangle$  in Neutrosophy, can also be considered as a special kind of "one divides into three".

The third stage, is the preparation phase of universal linkings. Among them, the most important linking is considered that in mathematics there are many kinds of "number".

Currently in mathematics, there are positive and negative numbers, fractions, irrational numbers, complex numbers, hyper-complex numbers and so on, as well as the "General number" such as matrix, and the like. Accordingly, as discussing "one can be divided into how many parts", we can link with all kinds of "number" in mathematics.

The fourth stage, to carry on the unification and synthesis regarding the achievement of above three stages; and reach one or more results which are the best or agreed with some conditions;

In this way, "one divides into two" can be expanded into "one divides into many", but here the word "many" is not limited to "a positive integer greater than three" (such as four,

five, and the like). That is, there are how many kinds of "number" in mathematics, "one" can be divided into how many kinds of "parts". For example, "one" can be divided into "positive and negative parts", "mixed number parts", "complex number parts", "hypercomplex parts", "matrix parts", and the like.

Now, we discuss some examples.

"One" can be divided into "positive parts" and "negative parts". For example, an enterprise has five factories, among them there are three profitable factories, and two loss-making factories. In general this enterprise is "one divides into five", while its whole income (as "one") can be considered as "one divides into three positive parts and two negative parts". In which, "three positive parts" means three profitable factories, and "two negative parts" means two loss-making factories.

"One" can be divided into "mixed number parts". For example, As parents bring a child to journey. Considering the whole ticket prices as "one", if the child needs to buy a half-price ticket, and supposing one ticket is one part, then the whole ticket prices contain "two and a half parts" or "two point five parts". This is the case of "one divides into two and a half parts" or "one divides into two point five parts".

"One" can be divided into "irrational number parts". For example, taking the diameter of a circle as unit of measurement to divide the circumference of a circle (the circumference of this circle is considered as "one"), then the result is  $\pi$  parts (approximately is 3.1416 parts), as  $\pi$  is an irrational number, so we have "one divides into  $\pi$  parts".

"One" can be divided into "complex-number parts". The Earth (taking as "one") has seven continents and four oceans, so the Earth ("one") can be divided into  $(7+4i)$  parts; in which the real number "7" represents the seven continents, the imaginary part "4i" represents the four oceans, that is "one divides into  $(7+4i)$  parts".

"One" can be divided into "hypercomplex parts". Solar system (taking as "one") mainly consists of the Sun, nine planets and their satellites, about 25,000 asteroid, and about 1700 comets; so the solar system (as "one") can be divided into  $(1+9i+25000j+1700k)$  parts; in which the real number "1" represents the Sun, the imaginary part "9i" represents nine planets and their satellites, the imaginary part "25000j" represents 25,000 asteroids, and the imaginary part "1700k" represents 1700 comets, that is "one divides into  $(1+9i+25000j+1700k)$  parts".

"One" can be divided into "matrix parts". In the Chinese ancient 《Book of Changes》, there is the picture of "Luo-Shu" (as shown in Figure 1).

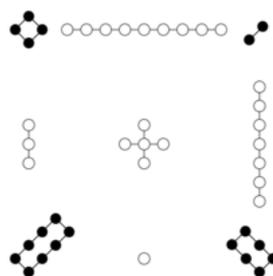


Figure 1. The picture of "Luo-Shu"

Therefore the picture of "Luo-Shu" (taking as "one") can be divided into matrix parts as follows (it is also a three-order magic square).

$$\begin{vmatrix} 4 & 9 & 2 \\ 3 & 5 & 7 \\ 8 & 1 & 6 \end{vmatrix}$$

In the future, if the more complex number is appeared, "one" can be divided into more complex parts.

Based on that "one divides into two" is expanded into "one divides into many", it is easier to discuss the division of development stages.

#### 4 Several other types of "three-stage" besides original Hegelian "triad-stage"

In addition to the traditional Hegelian "triad-stage" (triad thesis, antithesis, and synthesis of development), there are other types of "three-stage".

Within the framework of "thesis, antithesis, and synthesis", considering all possible situations and applying the method of permutation and combination, we can also list other five types of three-stage: "thesis, synthesis, and antithesis", "antithesis, thesis, and synthesis", "antithesis, synthesis, and thesis", "synthesis, thesis, and antithesis", and "synthesis, antithesis, and thesis". For example, for a simple case of the traditional "Hegelian triad-stage": A hen (thesis) lays an egg (antithesis); the hen hatches this egg more than ten days, then a chicken (synthesis) will pip; in which the normal arranged order is "hen, egg, chicken"; however, instead of beginning from hen (thesis), it also can be beginning from egg (antithesis) or chicken (synthesis); in addition, the more general situations are that for some special needs of scientists, writers, directors, and the like, other arranged orders will be presented; therefore we can list the following five arranged orders: "thesis (hen), synthesis (chicken), and antithesis (egg)", "antithesis (egg), thesis (hen), and synthesis (chicken)", "antithesis (egg), synthesis (chicken), and thesis (hen)", "synthesis (chicken), thesis (hen), and antithesis (egg)", and "synthesis (chicken), antithesis (egg), and thesis (hen)"; as for finding the ways to link the three objects of each arranged order, that will be the tasks of scientists, writers, directors, and the like.

To breakthrough the framework of "thesis, antithesis, and synthesis", there are still more types of "three-stage".

For example, we can add the "disappearing stage" that is related to the concept of "universal relations" in Quad-stage, and cancel some stage. For instance, for the "three-stage" of "hen, egg, chicken", if the egg is eaten, then we will have the "three-stage" of "hen, egg, disappearing (the egg is eaten)".

Now we discuss the application of Neutrosophy.

There are six types of "three-stage" that are based on Neutrosophy: (1) positive stage, negative stage, and neutral stage; (2) positive stage, neutral stage, and negative stage; (3) negative stage, positive stage, and neutral stage; (4) negative stage, neutral stage, and positive stage; (5) neutral stage, positive stage, and negative stage; (6) neutral stage, negative stage and positive stage.

Here we only list a "positive stage, negative stage, and neutral stage" type of "three-stage". First stage: for a certain country, the elected Prime Minister forms a Government, this is the positive stage; second stage: the rebel force is appeared, and the civil war is broken out, this is the negative stage; third stage: both sides are conciliated and the coalition Government is formed, this is the neutral stage.

In addition, taking into account the concept of "universal relations" in Quad-stage, to introduce the "middle transition stage" is a natural thing. For example, for the "three-stage" of "quantitative change, partial quantitative change and partial qualitative change, and qualitative change", in which the "partial quantitative change and partial qualitative change" is the "middle transition stage". Another example: a Prime Minister is forced to resign for some reason, then the caretaker Government is composed, finally a new Government is formed. In which "the caretaker Government is composed" is also the "middle transition stage". Of course, the scholars who adhere to Hegel's "triad-stage" can also take "a Prime Minister is forced to resign for some reason" as the "thesis", take "the caretaker Government is composed" as the "antithesis", and take "a new Government is formed" as the "synthesis". Therefore, as discussing division of development stages, different people may have different result.

Besides "middle transition stage", "repose stage" should also be considered (in some cases, "repose stage" can be seen as the special circumstance of "middle transition stage"). For example, as Newton completed 《Philosophiae Naturalis Principia Mathematica》, he took a rest and did not consider any scientific problem for a long period of time. In addition, due to the interference of external factors, sometimes people must face "repose stage". For instance, in the process of development, due to disobey some rule, a company is ordered to be "suspend business for rectification", that is the "repose stage".

After considering "middle transition stage" and "repose stage", we can find more types of "three-stage". For example: thesis stage, middle transition stage, and antithesis stage; thesis stage, repose stage, and antithesis stage; and the like.

## 5 Examples of original "Quad-stage" and several other types of "four-stage"

First of all, it should be noted that, if the original "Quad-stage" method can be combined with other methods, it will play a greater role. This is because that narcissism is unsustainable and rivers converge to flourish. If some scholar's theory or method can contain the essence of all wisdoms through the ages, then this scholar can stand on the shoulder of Giants or, even go hand in hand with various Giants.

Now we discuss the combine of "Quad-stage" and Neutrosophy, or the application of Neutrosophy to Quad-stage method.

In the method of "Quad-stage" (Quad general theses, general antitheses, universal relations, general syntheses), "general theses" may be considered as the notion or idea <A>; "general antitheses" may be considered as the notion or idea <Anti-A>; "the most important and the most complicated universal relations" may be considered as the notion or idea <Neut-A>; and "general syntheses" are the final results. The different kinds of results in the above mentioned four stages can also be classified and induced with the viewpoints of Neutrosophy. Thus, the theory and achievement of Neutrosophy can be

applied as many as possible, and the method of Quad-stage will be more effective.

Now we define two types of Neutrosophic sets in Quad-stage method.

In the method of Quad-stage, Neutrosophic sets generally include three elements: element  $\langle A \rangle$ , its opposite element  $\langle \text{Anti-}A \rangle$ , and element  $\langle \text{Neut-}A \rangle$  (i.e. element located between the two extremes, supporting neither  $\langle A \rangle$  nor  $\langle \text{Anti-}A \rangle$ ).

If all three elements ( $\langle A \rangle$ ,  $\langle \text{Anti-}A \rangle$ , and  $\langle \text{Neut-}A \rangle$ ) are located at the same stage in the method of Quad-stage, then they can be defined as the first type of Neutrosophic sets. For more detail, if all three elements are located at the first stage, then they can be defined as the first type of Neutrosophic sets in first stage; similarly, the first type of Neutrosophic sets in second stage, in third stage, and in fourth stage can be defined respectively.

If all three elements ( $\langle A \rangle$ ,  $\langle \text{Anti-}A \rangle$ , and  $\langle \text{Neut-}A \rangle$ ) are located at the different stages in the method of Quad-stage, then they can be defined as the second type of Neutrosophic sets. For more detail, if all three elements are located at the first stage and second stage, then they can be defined as the second type of Neutrosophic sets in first stage and second stage; similarly, the second type of Neutrosophic sets in other stages can be defined.

Now we discuss some examples of Quad-stage.

The outstanding example is the evolution process from Shakespeare's "Hamlet" to the animated film "The Lion King".

From "Hamlet" to "The Lion King" is conformed to the rules of Neutrosophy and "Quad-stage".

In the first stage, "Hamlet" is confirmed as the "thesis" (equivalent to the concept of  $\langle A \rangle$  in Neutrosophy) and the original manuscript to be studied and adapted carefully. In the second stage, the contents of "antithesis" (equivalent to the concept of  $\langle \text{Anti-}A \rangle$  in Neutrosophy) are confirmed: the characters will be changed from people to animals (including the Royal animals, the ordinary animals and the Ministers of animal), the play form will be changed from theatre to animated film, and the horrible ghost will be removed. In the third stage (equivalent to the concept of  $\langle \text{Neut-}A \rangle$  in Neutrosophy), the advantages of animal world and animated film have been linked and utilized as many as possible. While in the fourth stage, after synthesizing the various best blue prints and editing the pictures, "The Lion King" is finished. It should be noted that, at all stages, many rules of Neutrosophy can be found. In the aspect of characters, the original "Hamlet" includes the people and horrible ghost; while in "The Lion King", there are various animals instead of the people and horrible ghost. In the aspect of contents, many stories of "Hamlet" are adopted in order to have the aid of the high prestige of Shakespeare, but some stories of "Hamlet" are eliminated, and many animal plots are added that are welcome by audience (especially children).

Here, the people, horrible ghost and animal (chicken) are only existed in the first stage, therefore they belong to the first type of Neutrosophic sets. While the Royal, civilian and Minister are presented in four stages, therefore they belong to the second type of Neutrosophic sets.

It can be said that, with the help of the rules of Neutrosophy and Quad-stage, "The Lion King" achieves great success.

Another example is expanding "Internet Thinking" with Quad-stage method.

The first stage, comprehensively studying and analyzing the Internet Thinking.

Firstly, looking at the definitions of Internet Thinking. Different authors have proposed various definitions, it can be described as the benevolent see benevolence and the wise see wisdom. And we believe that the most appropriate definition should be given by Li Yanhong (Robin Li) who presented "Internet Thinking" for the first time in 2011. The reason for this is to respect the "right of initiative". But so far, Li does not give such a definition. In this case, for the sake of discussing the "expansion of Internet Thinking", according to Li's meaning in his speech, in this paper we give the following definition for the time being: Internet Thinking is the thinking with the Internet's way and characteristics in the Internet age.

Now we discuss all kinds of issues related to "Internet Thinking".

Considering people's ways of thinking, there are "Li Yanhong style Internet Thinking", "Ma Yun style Internet Thinking", "Zhao Dawei style Internet Thinking", "Chen Guangfeng style Internet Thinking", and so on.

The famous address of "Li Yanhong style Internet Thinking" is that, from now on, the entrepreneurs like us will have the Internet Thinking, you may not do the Internet business, but your thinking way should be the Internet manner progressively.

The bold prediction of "Ma Yun style Internet Thinking" is that, afterwards, all enterprises will be the Internet ones.

"Zhao Dawei style Internet Thinking" includes 9 main parts: user thinking, simple thinking, extreme thinking, iterative thinking, flow thinking, socialization thinking, big data thinking, platform thinking, cross-border thinking.

"Chen Guangfeng style Internet Thinking" consists of 12 core parts: tag thinking, simple thinking, NO.1 thinking, product thinking, pain point thinking, screaming point thinking, loser thinking, fans thinking, burst point thinking, iterative thinking, flow thinking, intergration thinking.

Considering the manufacturing and management manners, there are already "Xiaomi mobile phone Internet Thinking", "Three Squirrels Internet Thinking", "Eagle Grandfather brisket Internet Thinking", "Haier Internet Thinking", and so on. In which, the particularly noteworthy one is the successful "Haier's global research resources integration platform", by means of the platform, greatly make up for the deficiency of Haier itself in this respect, Haier just put their own objectives on this platform, thus will attract the world's best research resources scrambling to come. This is another miracle in manufacturing created by "Haier Internet Thinking".

For different time periods, we can point out: 20th century Internet Thinking, 21st century Internet Thinking, and the like.

For different countries, we can point out: Chinese style Internet Thinking, United States style Internet Thinking, United Kingdom style Internet Thinking, France style Internet Thinking, Russia style Internet Thinking, and so on.

The second stage, comprehensively studying and analyzing the opposite of Internet Thinking.

The opposite of Internet Thinking is the opposite thinking of Internet, including: the industrial age thinking, the thinking in the era of the industrial revolution, the Renaissance

thinking, the thinking of feudal society, the thinking of slave society, the thinking of primitive communist society, the thinking of Chinese traditional culture, and so on.

For the profound thinking of Chinese traditional culture, by the classification of people, it includes: Laozi thinking, Confucius thinking, Sun Tzu thinking, Mozi thinking, Qu Yuan thinking, Li Bai thinking, Su Shi thinking, Zu Chongzhi thinking, Cai Lun thinking, Bi Sheng thinking, Shen Kuo thinking, Xu Xiake thinking, and so on; by the classification of time, it includes: the Three August Ones & the Five Lords thinking, the Xia, Shang, and Zhou dynasty thinking, the spring and autumn era thinking, the Warring States period thinking, the Qin dynasty thinking, the Han dynasty thinking, the Tang dynasty thinking, the Ming dynasty thinking, the Qing dynasty thinking, and so on.

There are many reasons to emphasize the opposite of Internet Thinking, in which the two important ones are as follows: the first is that the opposite of Internet Thinking is existed really, and indeed useful; the second is telling us not to forget the past, and don't throw away tradition.

The third stage is the preparation stage for the fourth stage.

This third stage is the one that the most important and the most complicated universal relations and connections, namely the seedtime inherited from the past and carried on for the future. Its purpose is to establish the universal relations and connections in the widest scope. This widest scope contains all the regions related and non-related to the Internet Thinking and the opposite of Internet Thinking, and the like. This stage's foundational works are to contact, grasp, discover, dig, and even create the opportunities, pieces of information, and so on as many as possible. The degree of the universal relations may be different, theoretically its upper limit is to connect all the existences, pieces of information and so on related to matters, spirits and so on in the universe; for the cases such as to create science fiction, even may connect all the existences, pieces of information and so on in the virtual world. For example, the Internet Thinking can be associated with the Confucius thinking, the Chinese style Internet Thinking can be associated with the foreign Internet Thinking, the Internet Thinking can be associated with the informatization, and so on. In order to avoid duplication, some useful associations will be presented in the fourth stage.

The fourth stage, partial results of expanding Internet Thinking can be given.

Based on the results of above three stages, in this fourth stage, to carry on the unification and synthesis regarding various opposites and the suitable pieces of information, factors, and so on; and reach one or more results which are the best or agreed with some conditions for expanding Internet Thinking.

First of all, it should be noted that, originally the entrepreneurs and enterprise employees are the main people that are interested in Internet Thinking, so strictly speaking, initially the Internet Thinking would be "enterprise Internet Thinking". Later, some public institutions are also involved, so that "enterprise Internet Thinking" naturally is extended to "enterprise and public institution Internet Thinking". Link to a greater extent, it can gradually expand into "economic field Internet Thinking", "social field Internet Thinking", "social science field Internet Thinking", and so on. In addition, link to the areas outside social and social science fields, there are "natural field Internet Thinking", "natural science field Internet Thinking", and so on. Considering the Internet Thinking in three

areas of social field, natural field, and thought field, the initial Internet Thinking can be expanded into “three areas of social field, natural field, and thought field Internet Thinking” (it can be simplified as “overall Internet Thinking”). In the case of no misunderstanding, “overall Internet Thinking” can be simplified further as “Internet Thinking”.

Second, “Internet Thinking” only involves thinking phenomena, and in many situations considering thinking phenomena only is not enough, link to more big range, speech and action should be also considered, so “Internet Thinking” logically to be expanded into “Internet Thinking, Speech, and Action”, it can be defined as follows: “Internet Thinking, Speech, and Action” is the manner of thinking, speech, and action with the Internet's way and characteristics in the Internet age.

Moreover, if “Internet Thinking” is associated with informatization, it will create “Informatization Thinking”, “Informatization Thinking, Speech, and Action”, and so on.

Similarly, “Internet Thinking” can also be carried on a variety of other expansions according to different requirements and possibilities.

Now we discuss the practical application of Internet Thinking. If there are no practical values, the above discussion may be considered by many people that it is just a word game.

To expand the existing Internet Thinking associated with practical problems, there are a variety of ways.

A typical process is as follows: in the first stage, for a practical problem, listing and analyzing the current model of Internet Thinking related to this problem; then in the second stage, listing and analyzing the opposite of current model; while in the third stage, linking to all the available tools and resources, and so on; finally in the fourth stage, expanding the current model into the new model of Internet Thinking.

As an application, we discuss “Haier’s global research resources integration platform” again.

Because the integration of this platform is the integration of so-called “for-sale resources”, so in the first stage, the thinking model of this platform actually can be called “Thinking of global for-sale research resources integration platform”. In the second stage, the opposites of “Thinking of global for-sale research resources integration platform” include “Thinking of global non-for-sale research resources integration platform”, and the like; the importance of non-for-sale research resources is that some big-name experts are non-for-sale and very difficult to hire. In the third stage, the targets of universal linkings include unfinished research results, as well as the research and development achievements in other areas that can be applied directly or indirectly, all of these resources can be called “potential resources”. Thus, in the fourth stage, the original “Thinking of global for-sale research resources integration platform” can be expanded into “Thinking of global for-sale, non-for-sale, and potential research resources integration platform”; furthermore, it can be further expanded into “Thinking, Speech, and Action of global for-sale, non-for-sale, and potential research resources integration platform”.

It should be noted that, there are not fixed ways for expanding “Internet Thinking”. Namely, different people and different units can have different ways and means; even for the same person and the same unit, for different problems or different historical periods, different ways might be applied; and the expanded results are various.

Based on the "Quad-stage" of "general theses", "general antitheses", "the most important and the most complicated universal relations", and "general syntheses", we can discuss other types of "four-stage".

For Hegelian triad thesis, antithesis, and synthesis, after considering "middle transition stage", we can find more types of "four-stage". For example: thesis stage, middle transition stage, antithesis stage, and synthesis stage; thesis stage, antithesis stage, middle transition stage, and synthesis stage; and the like. In addition, after considering "repose stage", we can also find more types of "four-stage". For example: thesis stage, repose stage, antithesis stage, and synthesis stage; thesis stage, antithesis stage, repose stage, and synthesis stage; and the like.

Beyond the concepts of "thesis, antithesis, and synthesis", and the like, the general form of "four-stage" is as follows: first stage, second stage, third stage, and fourth stage. For example, the four seasons are spring stage (first stage), summer stage (second stage), autumn stage (third stage), and winter stage (fourth stage).

## 6 Several types of "five-stage" and "multiple-stage"

By means of Hegelian triad thesis, antithesis, and synthesis, the expanded "five-stage" and "multiple-stage" can be obtained with the circulated manner. Such an example of "five-stage" is as follows: "hen, egg, chicken, hen, egg" (the first circle includes "hen, egg, chicken", the second circle includes "hen, egg" only, and the egg will be sold). Another example of "six-stage" is as follows: "hen, egg, chicken, hen, egg, chicken" (the second circle is finished).

For Hegelian triad thesis, antithesis, and synthesis, after considering "middle transition stage" twice, we can find more types of "five-stage". For example: thesis stage, middle transition stage A, antithesis stage, middle transition stage B, and synthesis stage; thesis stage, middle transition stage B, antithesis stage, middle transition stage A, and synthesis stage; and the like. In addition, after considering "repose stage" twice, we can also find more types of "five-stage". For example: thesis stage, repose stage A, antithesis stage, repose stage B, and synthesis stage; thesis stage, repose stage B, antithesis stage, repose stage A, and synthesis stage; and the like.

Moreover, after considering "middle transition stage" and "repose stage" at the same time, we can find the following two types of "five-stage": thesis stage, middle transition stage, antithesis stage, repose stage, and synthesis stage; thesis stage, repose stage, antithesis stage, middle transition stage, and synthesis stage; and the like.

Of course, there are many other ways to form "five-stage".

Similarly, "six-stage", "seven-stage", "eight-stage", and so on, can be formed in many ways.

Beyond the concepts of "thesis, antithesis, and synthesis", and the like, the general form of "multiple-stage" is as follows: first stage, second stage, third stage, and the like. For example, the 12 stages in one year are January stage (first stage), February stage (second stage), March stage (third stage), and so on until December stage (twelfth stage).

## 7 Various kinds of complicated "multiple-stage"

Do we have how many kinds of the division of development stages? According to the

viewpoint of “one divides into many”, we have pointed out that there are how many kinds of "number" in mathematics, "one" can be divided into how many kinds of "parts"; namely we will have how many kinds of the division of development stages.

Firstly, looking at various "one-stage".

A politician only served as a one-term President, this is an example of "one-stage"; for the Emperors in Chinese history who have only one era name, which also belong to "one-stage"; and this type's "one-stage" can be called "time-type one-stage". In addition, as travelling with non-stop express train, this trip is "space-type one-stage".

Similarly, we can find various "two-stage", "three-stage", "four-stage", "five-stage", "six-stage", "seven-stage", "eight-stage", and so on.

The negative integers correspond with the "negative-stage". For example, taking the two dynasties of Tang dynasty and Song dynasty as the reference period (these two dynasties belong to "base two-stage"), then the stage of Sui dynasty (before Tang dynasty) is the "negative-one-stage", and the two stages of Sui dynasty and Jin dynasty (before Sui dynasty) is the "negative-two-stage". Similarly, we can find "negative-three-stage", "negative-four-stage", and the like.

The number zero corresponds with the "zero-stage". For example, a politician is failed in the election of President, his or her presidency period is "zero stage".

The mixed numbers correspond with the "mixed-number-stage". For example, a politician serves two terms as President (one term is five years), but in the second term, after two years this politician is forced to resign, then this politician's President terms is "1.4-stage".

The complex numbers and hypercomplex numbers also correspond with the "complex-number-stage" and "hypercomplex-stage". For example, a person holds the post of University President for two times, the Dean of department for three times, and the Director of library for four times, then this person's post period should be "(2+3i+4j)-stage", in which the real number 2 represents the period of University President, the complex number 3i represents the period of Dean of department, and another complex number 4j represents the period of Director of library.

Finally, we consider the "matrix-stage" of the matrix-style development process. Assuming that a certain thing's development cycle is two years, the first half of the first year is stage A, the second half of the first year is stage B, the first half of the second year is stage C, and the second half of the second year is stage D; then its development process can be written as the following matrix form

$$\begin{vmatrix} A & B \\ C & D \end{vmatrix}$$

## 8 Conclusions

With the help of Neutrosophy and Quad-stage method, Hegelian triad-stage (thesis, antithesis, and synthesis) of development can be expanded into various kinds of simple or complicated "multiple-stage". In which the Quad-stage ("general theses", "general antitheses", "the most important and the most complicated universal relations", and "general syntheses") has special and important meaning; the examples of this

Quad-stage are given in this paper (such as the four development stages from Shakespeare's "Hamlet" to film "The Lion King" and the expansion of Internet Thinking). Certainly, due to the complexity of the world, no one stage-dividing mode can be used to unified description of everything's development process, and we should present different stage-dividing mode depending on the actual situation.

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