

# BIPOLARITY AND TRIADICITY IN VARIOUS CONTEXTS

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**ABSTRACT.** *In this paper, (bi-)polarity and triadicity are addressed in various circumstances. We start with the poles of the earth, consider temperature scales and turn to the temperature and humidity axes of the Ancient Greeks. Then, we discuss four different perspectives or approaches to reality. Two ways of progress from bipolar to triadic systems are exemplified, and dialectic thinking is dealt with. Subsequently, important Chinese terms are discussed: yin and yang, qi and taiji. For comparison, triads in Indian and Tibetan medicine systems as well as in homeopathy are presented. Then, we treat the vertical world axis, which can be found in shamanic context, but also in Ancient daostic China. After a flying visit to Islamic sufism, we treat the book Daodejing in some detail. In this context, recent archaeological findings of very old texts allow for new insights. At last, open questions are addressed and various forms of trinity in religious and mythological context are outlined.*

**KEYWORDS:** *poles, axes, perspectives, bipolarity, triadicity, axis mundi, medicine, taiji, daoism, trinity*

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## 1. Introduction: Poles and axes

At the beginning, we consider the planet earth: It may be characterized by its rotational axis with the north and south poles as endpoints.

The interrelation of these poles may be considered in different ways. On the one hand, they are separated, being even as far apart as possible. On the other hand, they both lie on the same planet earth. Furthermore, they lie on the same axis; they can even be used to define this axis. Of course, there lie further points, e.g. the center of the earth. We will come later to such extensions.

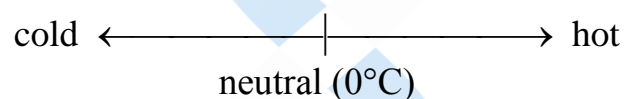
North and south poles lie on opposite sides. However, they depend on each other: If there were no south pole, there would neither be a north pole. Thus, the common aspects as well as the contrasting ones can be at the forefront of somebody's thinking. If the dichotomy is paramount, we will speak of duality or binarity. If the common aspects of two poles are also taken into account, we will speak of (bi-) polarity and complementarity.

Not only the earth, but also a magnet has a north and a south pole. Likewise, positive and negative (or plus and minus) poles can be found in batteries. This terminology, however, is mistakable, because it may be considered as a value judgment. For instance, the Chinese terms yin and yang are associated with negative and positive as well as with female and male. Thus, it has to be made clear in every single case in which sense the terms "negative" and "positive" are meant.

In religion, there is the question where calamities come from. The dualistic approach recognizes the dichotomy of good and evil, even personified in god and devil. For the monistic approach, there exists only one principle, the good one. Thus, there should be a deeper sense in seemingly bad experiences. In another interpretation, they come from the incomplete manifestation of this principle in persons and situations.

Now we turn to similar considerations concerning temperature and humidity, two main principles in various ancient philosophies and healing methods.

Let us start with the temperature axis, the poles being "hot" and "cold"; see Figure 1.



*Figure 1. The temperature axis with two poles*

This arrangement fits well for the Celsius (centigrade) scale, but in an analogous way also for the classical Fahrenheit and Réaumur scales that are only linear transformations of the Celsius scale,  $T$  being the temperature:

$$T(^{\circ}\text{F}) = 1.8 T(^{\circ}\text{C}) + 32$$

$$T(^{\circ}\text{R}) = 0.8 T(^{\circ}\text{C})$$

The above figure corresponds to an axis with the two "poles" cold and hot. The neutral, zero value is analogous to the center of the earth in our first example.

However, the view of physics has shifted from a "dualistic" to a "monistic" view. The temperature is associated with the movement and agitation of the molecules. Thus, in the physical case there is only a hot principle; coldness just means deficiency of hotness. This view is mirrored in the choice of the Kelvin scale (absolute temperature):

$$T(^{\circ}\text{K}) = T(^{\circ}\text{C}) + 273.15$$

The Kelvin scale is also achieved by a linear transformation of the Celsius scale, but it creates a new absolute zero point: there exists no temperature below  $0^{\circ}\text{K}$ ; see Figure 2.



Figure 2. The temperature axis with one pole

In traditional medicine systems, both poles occur, the neutral central value being the optimum for human life (about  $20^{\circ}\text{C}$ ). Additionally to the temperature axis (cold/hot), also the humidity axis (dry/wet) plays a role, as mentioned above. Figure 3 shows the two axes in the case of the Ancient Greeks; compare Kratky (2008, p.35).

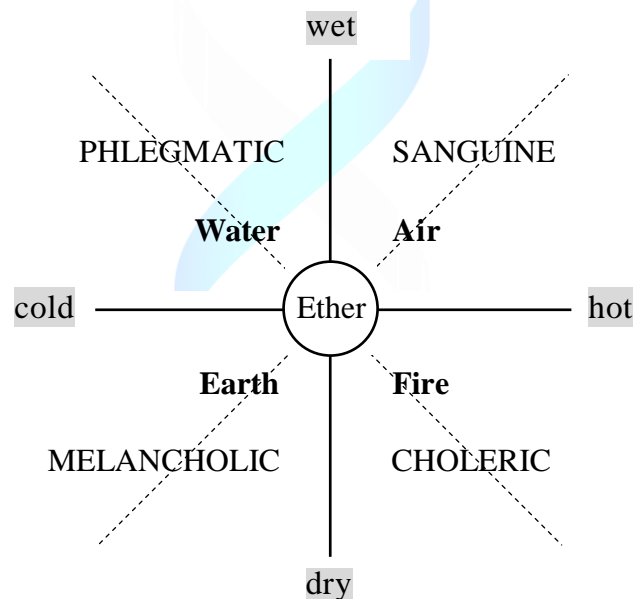


Figure 3. The four temperaments and their relation to the temperature and humidity axes. The Greek assignments of the elements are also indicated. To complete the picture, the fifth element, ether, is drawn at the origin

The four Greek elements water, air, fire and earth lie crosswise compared to the two axes. For instance, fire is hot and dry. The elements are associated with the human temperaments, e.g., fire with the choleric temperament. In Late Antiquity, ether was also considered. It is "everywhere" and may be put into the center.

The elements as mentioned here should not be confused with the modern chemical elements. They are rather expressions for principles that can be found in different domains and reflect thinking by analogies, see Table 1. By the way, Tables 1 and 2 are modified versions of similar tables in Kratky (2008; p.32 & 29).


Table 1

<b>Sequences by analogy of the four Greek elements</b>				
Element	Water	Air	Fire	Earth
Body fluid	Phlegm / mucus	Blood	Choler / bile	Black bile
Organ	Brain	Heart	Liver	Spleen
Temperament	Phlegmatic	Sanguine	Choleric	Melancholic
Temperature & humidity	Cold & damp	Warm & damp	Warm & dry	Cold & dry
Color	White	Red	Yellow	Black
Season	Winter	Spring	Summer	Autumn

Some of the relationships seem plausible; e.g., the connection between the white color and winter. Other connections, however, are less clear; e.g., between air and blood. Thinking by analogies is not unknown to us, but it not so appreciated in scientific work. In general, we have another approach to reality.

## **2. Different perspectives or approaches to reality**

The above considerations give rise to the question which ways of thinking can be found at all; see Table 2, which is somewhat inspired by the Hawaiian Huna tradition. Due to that tradition, there are four ways interpreting reality, whose "true nature" always remains partly hidden. Depending on the situation, one way or the other might be especially obvious, but we always have the opportunity to choose our approach or perspective. These four ways will be called perspectives 1 to 4 (P1-4), where the world view is reflected in the corresponding perspective; cf. Table 2.

Various perspectives (P1-P4) or approaches to reality				
Per-spective	Symbol	Characteristics	Designation	
P1	→●→●→	Classical natural sciences	Logical	/ Systematic
P2		Chaos research, Social sciences	Dynamic	/ Systemic
P3	≡	Humanities	Constructivist	/ Symbolic
P4	●	Spirituality	Holistic	/ Symbiotic
P1	Objectivity, predictability		'Either – or', 'if – then'	
P2	Subjectivity, complexity		'As well as'	
P3	Analogies, rituals, metaphors		'On the one hand – on the other' 'TWO sides of a coin'	
P4	Mystical experiences of unity		'Two sides of ONE coin'	

The first three approaches (P1-3) are not unknown to us. Huna has one more perspective to offer, P4, which has no place in science and can be characterized by the sentence: "Everything is one". In the final analysis, this approach is just as extreme as "Everything is separate from everything else", another way of formulating P1. However, the "opposites" P1 and P4 can even merge. *"These are my compatriots and those are strangers."* The separation into two groups – each experienced as uniform – is influenced by one's own experience. The own group is "the whole world" (P4), the other one is more or less ignored. Seen from outside, there is a strict separation between the groups (P1).

The comparison of P3 and P4 is also tantalizing, namely under the aspect 'there are two sides to every coin', where P3 and P4 emphasize different words. We will come back to that immediately.

### 3. From bipolar to triadic systems

First, we resume our considerations concerning bipolarity, especially the temperature axis, Figure 1. The right half goes from neutral to hot, the left half from neutral to cold. In the middle, there is a zone of comfortable temperature, not just the neutral point. Likewise, we have the present between the past and the future. How long this transitional period lasts, will differ from person to person. It is clear, however, that it is a relatively short period. This is also the case for the transition

between day and night or for the transition between wakefulness and sleep; cf. Khroutski (2012, 2013).

Thus, a bipolar system can be immediately extended to a triadic system by considering the intermediate zone. One may look at such a triadic system in two ways:

- The three zones lie at the same level.
- The intermediate zone contains the properties of both other zones and is thus at a higher level.

The latter interpretation can be found in a pronounced way in dialectic thinking, where triadicity comes from three steps of reasoning. Initially, two contradictory assertions (thesis and antithesis) are formulated. This is followed by the dialectic step of synthesis, where according to Hegel the contradiction is 'aufgehoben' in all three senses of this German word: it is 'eliminated', 'preserved' and 'lifted' to a higher level (Pietschmann 2002, p.33f). These three meanings we find in the sequence of perspectives P1 to P4. In P1, thesis and antithesis are contradictory, so one of the two has to be eliminated. 'Preserved' refers to P2 or P3, depending on whether thesis and antithesis are seen as complementary (P2) or as reflecting one another (P3). 'Lifted to a higher level' means a new unity, P4. Complete dialectics, which includes all of these aspects, encompasses everything.

Triadicity cannot only be found in dialectic thinking, but also in other circumstances. In China, the *taiji* symbol is an example for a triadic system. Basically, Chinese thinking is (bi-)polar, *yin* and *yang* being an particular example; cf. Table 3. The pair *yin* – *yang* may be compared with the pair water – fire. One may think that *yin* and *yang* are irreconcilable, but this is not the Chinese way. There, *yin* and *yang* are and complementary and interrelated.

Table 3

Some characteristics of yīn ( 陰 ) and yáng ( 陽 )								
Yin	Cold	wet	deficiency	internal	dark	below	structure	feminine
Yang	Hot	dry	excess	external	light	above	dynamics	masculine

For instance, this interrelation can be found in the *taiji* symbol (Figure 4a). *Yin* and *yang* combine to a third. This is not the transitional zone between the *yin* and *yang* (the wavy "horizontal" line between black and white), but the integration of the two principles to a new image. *Yin* and *yang* combine to *yinyang* (ancient Chinese view, see Kubny 2002, p.170f) or to *qi* (which has several meanings: life energy, vitality, breath, aqueous vapor). One may look at it literally, too: water (*yin*), when heated up by fire (*yang*), yields aqueous vapor (*qi*).

*Taiji* may be translated as 'high roof ridge'. In this sense, *qi* is based on *yin* and *yang* and is situated at a higher level, at the "ridge of the roof" (Figure 4b).

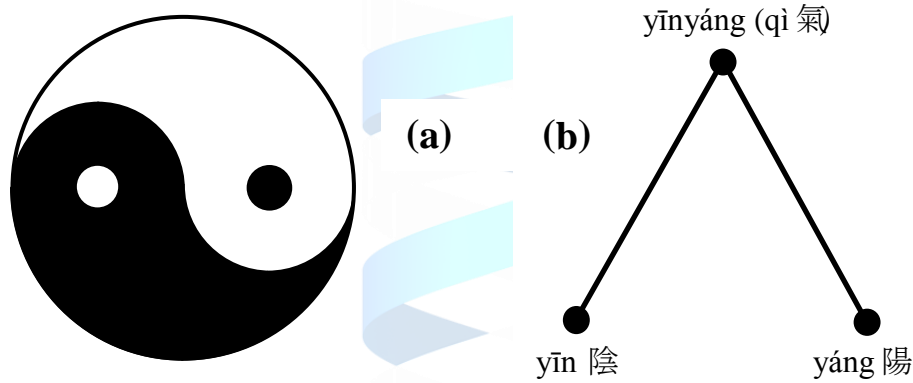


Figure 4. Yin, yang and yinyang (or qi) are symbolized in two ways. **a)** Yin (black, with a white dot) and yang (white, with a black dot), yielding the taiji symbol. **b)** Taiji as 'high roof ridge'

Triadic systems that are comparable with each other can be found in Ayurveda (India, 3 doshas), the Tibetan medicine (3 nyes-pas) and homeopathy (3 miasms), the triples being basic regulatory types or principles concerning physiology and pathology. Figure 5 indicates that two of these types are polar pairs (e.g., kapha being slow and cold, pitta being fast and hot). One may regard the third type is an intermediate one; in another view, it is somewhat predominant, also concerning the probability to fall sick. Then, the other two types may even be interpreted as two aspects of the predominant one.

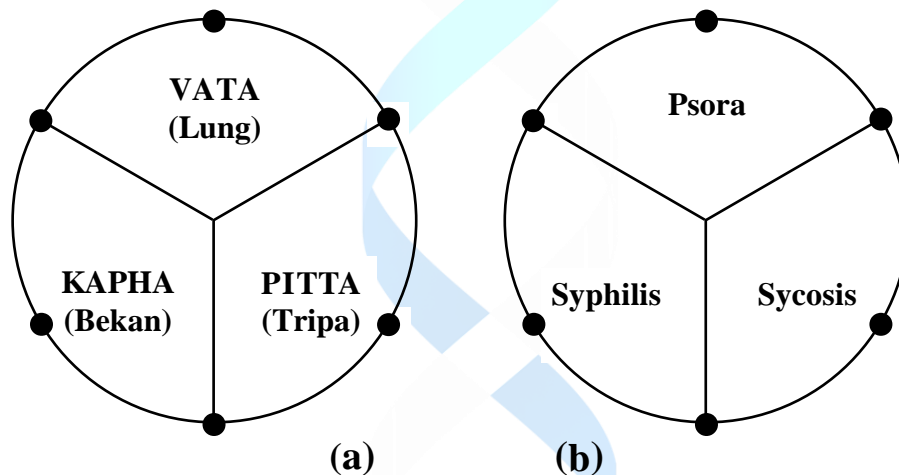


Figure 5. The 3 regulatory types or principles in East and West. **a)** Ayurveda (Tibetan medicine): doshas vata, pitta & kapha (nyes-pas lung, tripa & bekan). **b)** Homeopathy: miasms psora, sycosis and syphilis

By the way, the nyes-pas in Tibetan Medicine are almost identical with the Indian doshas. In total, several Eastern and Western methods of complementary medicine reveal a triadic trait. As to triadicity in medicine, see also Khroutski (2010).

#### 4. The vertical world axis (axis mundi)

Now, we come to another triad. In traditional and shamanic thinking, there is a vertical world axis that connects our life on earth with other spiritual realms. Our own life was and still is primarily restricted to the horizontal two-dimensional surface of planet earth (soil). The vertical axis, however, has an ambivalent meaning: Literally, we see the sky above us and can think about the region beneath the surface, inside the earth. In the sense of the world axis, however, heaven is located "above", and the netherworld (or even hell) is thought to be "below". Thus, there are two different meanings: a realistic (or geographic) one and a symbolic (or spiritual) one. The mixing up of the two interpretations is even more tempting in languages where the expressions for heaven and sky coincide; e.g. "Himmel" (German) or "небо" (Russian).

Table 4

The three realms of the world axis			
Designations in shamanic and religious context			Ancient China
Upper world	heaven	above the earth	heaven 天
Middle world	earth	on earth	human 人
Lower world	netherworld	under the earth	earth 地

We live only in a thin intermediate zone, regardless of whether we interpret the world axis geographically or spiritually. As Table 4 and Figure 6 show, the Chinese expressions for the three realms are "heaven", "human" and "earth".



Figure 6. The 3 realms in ancient Chinese thinking (*sāncái* 三才, the 3 talents or abilities)

Thus, we have again a triadic system, where our own life takes place in a small intermediate zone. It may be confusing that "earth" is not characteristic for this zone. This confusion has to do with the fact that "earth" has two basically different meanings: earth as soil (surface) and earth as planet, globe (for us humans: below the surface). In present Chinese, "globe" can be found in 地球 (dìqiú), "earth sphere",



containing the word 地 (dì) already shown in Figure 6. The left part of the sign 地 (dì) is 土 (tǔ), which means earth as soil. This is also the Chinese element or phase "earth" that was central in Ancient China.

Again, the intermediate zone (soil) can be looked at from another point or view: It is the realm of humans. For instance, in the biblical story of creation, Adam was formed from clay (earth) and became alive via the breath of God (ruach, qi). Thus humans represent a vulnerable combination and integration of two opposites or at least poles. Since heaven and earth represent specific cases of yang and yin, respectively, the human zone may be associated with yinyang or qi, compare Figure 4, and is thus at a higher logical level than the other two realms.

In Islam, one can find the idea that a human is somewhat a combination of donkey (the material part) and angel (the spiritual part). Due to the medieval Sufi mystic Rumi (Latif 2009. p.68):

*The situation of man is as if they brought an angel's wing and attached it to an ass's tail, so that perhaps that ass, through the radiance and companionship of the angel, may itself become an angel.*

## 5. The triad described in the Daodejing

Now we come to the Dàodéjīng (Tao Te Ching) of Lǎozǐ (Lao Tzu). It is an important book of Chinese daoism and is about 2400 years old. We will compare the two translations of Goddard and Borel (1919/2009) and Lin (2006):

For our considerations, verses or chapters 1 and 42 are especially relevant. We start with the first half of Ch.42. In the first line, the important signs for *dao*, *1*, *2*, *3* and *all things* (*myriad things*) are highlighted in grey when they appear for the first time. For *yin*, *yang*, *qi* and *harmony*, the same is the case in the second line. Where the two translations differ from one another, the corresponding words are additionally in bold.

道生一、一生二、二生三、三生萬物。  
萬物負陰而抱陽、沖氣以為和。

Goddard and Borel (1919/2009):

Tao produces **unity**; unity produces **duality**;  
duality produces **trinity**; trinity produces **all things**.

All things bear the **negative principle** (yin)  
and embrace the **positive principle** (yang).

**Immaterial vitality**, the **third principle** (chi), makes them **harmonious**.

Lin (2006):

Tao produces **one**  
One produces **two**

Two produce **three**  
 Three produce **myriad things**

Myriad things, backed by yin and embracing yang  
 Achieve harmony by **integrating** their **energy**

In both versions, the basic term "dào" or "tao" (method, way, doctrine and several other meanings) is not translated. From the logics of the first line of the Chinese text, we can see why this is so. The first line may be interpreted as

$$0 \rightarrow 1 \rightarrow 2 \rightarrow 3 \rightarrow \infty$$

Thus, dao can be identified with zero: the nothing that produces everything, which is quite in the spirit of daoism. Furthermore, it is remarkable that there is a jump from 3 to infinity (*all things*). This means that the number 3 is of particular importance.

In the first translation, one does not just find the numbers 1, 2 and 3, but the terms unity, duality and trinity. That means that the things aggregate progressively. In the second Chinese line, it becomes clearer what is behind these numbers. "1" is not specified, but "2" corresponds to yin and yang, "3" to qi (or chi), the latter being translated as vitality or energy. The aspect of harmony can also be found in both translations, the aspect of integration only in the second translation.

Let us now come back to the starting point 0 or dao. The term "wújí" (無極 and 无极 in traditional and simplified Chinese, respectively) may be interpreted as a synonym of dao. Reasonable translations of wuji are: "without ridgepole", "primordial universe" or "the ultimate of nothingness". With reference to the beginning of Ch.42 of the Daodejing, the following statements can be found in [http://en.wikipedia.org/wiki/Three\\_Pure\\_Ones](http://en.wikipedia.org/wiki/Three_Pure_Ones):

*It is generally agreed that: Tao produced One – Wuji produced Taiji; One produced Two – Taiji produced Yin and Yang. ... However, the subject of how Two produced Three has remained a popular debate among Taoist Scholars. Most scholars believe that it refers to the Interaction between Yin and Yang, with the presence of Chi, or life force.*

Due to the first part of this text, the transitions  $0 \text{ (dao)} \rightarrow 1$  and  $wuji \rightarrow taiji$  are identified. However, taiji seem to fit better to number 3 than to 1. This is discussed in the second part of the text. In our terminology explained earlier (perspectives P1-4 or world views), it depends on our perspective whether we associate taiji with "1" or "3" in the sense of the Daodejing. P3 ("TWO sides of the same coin") bears in mind that there is one coin ("taiji"), but one should forget the two sides ("yin and yang"). P4 ("two sides of the SAME coin") stresses unity. Thus, the P3 and P4-interpretations favor the association of taiji with daoistic numbers "3" and "1", respectively.

Now we come to the first half Ch.1 of the Daodejing. Again, we compare the two translations of Goddard and Borel (1919/2009) and Lin (2006). The words *dao* and *name* are highlighted grey in the first and second lines, respectively. The

expressions for *heaven* and *earth* in the third line are already known to us. The same is the case for *all things* (*myriad things*) in the last line. The last words of the third line are especially interesting: *beginning* (translated as origin or source) and *mother*:

道可道、非常道。  
 名可名、非常名。  
 無名天地之始、  
 有名萬物之母。

Goddard and Borel (1919/2009):

The **Tao** that can be **understood** cannot be the **primal**, or **cosmic**, Tao, just as an **idea** that can be **expressed in words** cannot be the **infinite idea**. And yet this **ineffable Tao** was the **source** of all **spirit** and **matter**, and being **expressed** was the **mother of all created things**.

Lin (2006):

The **Tao** that can be **spoken** is not the **eternal Tao**  
 The **name** that can be **named** is not the **eternal name**  
 The **nameless** is the **origin of Heaven and Earth**  
 The **named** is the **mother of myriad things**

Now we understand why dao is often not translated. The word should not even be uttered; it would lose its absolute meaning then. Another aspect of dao: The words **primal**, **cosmic** and **eternal** mean that time plays no role for dao.

When the dao comes into the world ( $0 \rightarrow 1$ ), dynamics comes in: **Heaven** and **earth** emerge (translated as **spirit** and **matter** by Goddard and Borel), which corresponds to *yin* and *yang* in the similar presentation of Ch.42 discussed above. What seems to be missing here is the "3" between "2" and "all things". Maybe the **expressed** or **named** dao is that 3<sup>rd</sup> principle, but this does not become clear.

An interesting interpretation can be found in Wang (2013). Wang especially used the unearthed Genxian text (from about 300 BC), for elucidation of familiar texts that mostly are not known in their original form. From the abstract:

New interpretations of some classics (including received and unearthed Lao Zi, bamboo text Taiyishengshui and Genxian) reveal that the universe came from a chaos state (the first phase of evolution), which was separated by the formation of gases during a great change into heaven and earth (the second phase of evolution). Finally, the earth became habitable for creatures (the third phase of evolution – the formation of Oasis). By reinterpretation, Tao Te Ching (i.e. Lao Zi) says: “The third phase (Oasis) generates the ten-thousand creatures”.

The ten-thousand creatures correspond to "all things" or "myriad things" in the translations considered above. Wang argues that at the beginning there was chaos, not nothing. The argument of Wang may be displayed in the following way:

Chaos (0) → (via gases 1) → Heaven and Earth (2) → Oasis (3) → all

"Gases" probably refer to qi. Oasis reminds of the *Genesis* of the Bible, where the first habitable region was the paradise (meaning enclosed or framed garden).

By the way, this Genxian text was also discussed in Chen (2008).

## 6. Discussion

Some of the topics concerning bipolarity and triadicity have been dealt with. However, there are many more interesting points in this context. For instance, there arises the question whether the autonomic nervous system is really bipolar or rather ternary (metasympathetic nervous system due to Nozdrachev; cf. Khroutski 2011). The present author could only find one English paper (Nozdrachev and Fedin 1998). This paper, however, is rather short and thus cannot answer the above question.

Another question refers to Aristotle's logic; cf. <http://www.iep.utm.edu/aris-log/>. The usual list of logical laws includes three axioms:

- Law of identity: All things must be identical with themselves.
- Law of non-contradiction: It is impossible for anyone to believe the same thing to be and not be.
- Law of excluded middle: It is necessary for the affirmation or the negation to be true or false.

Brusentsov, however, favors a ternary interpretation of Aristotle's syllogistics. For instance, Brusentsov and Vladimirova (2011) argue in the abstract:

Modern binary informatics with its so-called "classical" two-valued logic admits to create an artificial intellect and suppresses the natural intellect of students and other thinking people. Logic that based on dogmatic law of the excluded middle is incompatible with dialectical principle of opposition co-existence. Such logic is deprived of fundamental logical relation – the content consequence, and then cannot reach a conclusion. Aristotle's syllogistics includes the content consequence as common affirmative premise "All x are y". However, binarity misinterprets it as a paradoxical material implication that is not a relation at all.

Unfortunately, the papers of Brusentsov that are the basis for the mentioned article are only in Russian. So, a fruitful discussion of this remarkable topic cannot be carried on here.

At last, an interesting finding should be mentioned. In religious and mythological context, quite a few cases of trinity or triunity can be found (see, e.g., Biedermann 1994:352f). In Hinduism, the Trimurti (Brahma, Shiva, and Vishnu) show a triadic organization. In Christianity, we have God the Father, the Son, and the

Holy Spirit. Furthermore, several female mythical figures and divinities had triadic structure: in Southern Europe, the Greek Moirai and their Roman counterpart, the Fates; in Northern Europe, the three Norns, spinning human destiny like the Fates. In Central and Western Europe, similar female triads could be found, i.e., the three "Beths", called Ainbeth, Wilbeth, and Warbeth.

Incidentally, the Beths exhibit a triadic structure similar to the taiji symbol (Figure 4) and the 3 regulatory principles in medicine (Figure 5). Wilbeth (cold) and Warbeth (hot) are complementary to each other. Wilbeth is the moon goddess ("Wil" has to do with "wheel", the moon disk). Warbeth (or Worbeth) is the sun goddess ("war" corresponds to "warm"; the name of the German town Worms comes from Worbeth). Ainbeth (or Ambeth) is the earth goddess. She is superordinate and combines properties of the other two. Sometimes, she appears alone as a representative of all three.

In total, triadic structures can be found in different cultures and in different circumstances. This may have to do with the conjecture of Brusentsov that a triadic mode of thinking is quite natural for us. By the way, a recent overview of triadic concepts and their development can be found in Khroutski (2014).

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