

Quantum Physics, Science of Taoism, Yang and Yin Concept: Application in the Spinning Paper Experiment

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Abstract: A strange phenomenon that occurred during the conducting of an experiment triggered many questions, which I attempt to answer using two main perspectives - Quantum physics and the Science of Taoism. The involvement of energy vortices, golden ratio, zero point energy, yang and yin and the physics of Taoism are applicable to the explanation of the phenomenon observed in the experiment, which is brought about by the interaction of these laws of physics working to supplement each other. The experiment that was conducted can be quite easily replicated using the simplest materials and does not require specialized settings, however the phenomenon that results may open doors to further investigation and research that may eventually find application in real products that could benefit humankind.

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1. Introduction

Lets begin with a simple experiment to help the reader better envision what is going on.

1. Cut a sheet of blank paper into strips. You will need only one strip for the experiment.

2. Color one side black and leave the other blank (Figure 1)

(You can use other colors and even draw different shapes on each side. The shape drawn or colors used do not affect results and are used only for visual clarification of the phenomenon).

3. Fold the strip in half and place the folded strip of paper over a chosen Object (Figure 2).

4. (It doesn't matter what shape or size or material the object is. For quick results you can even use your finger as object if suitable objects are not at hand).

5. Now wind the paper strip around the object holding the two sides of the paper (Figure 3).

6. Now leave on the table or hold in your hand and wait.

7. After a few minutes hold the two end sides of the strip of paper with one hand and with the other hold the object and carefully pull to unwind it (Figure 4).

If the experiment is NOT successful the object will still be in the same position locked between the two sides of the strip (Figure 5a) and if the experiment is successful the object will be found outside the two sides of the paper strip – unlocked and the black side that was on the inside will now be on the outside, while the blank (white) side will now be on the inside (Figure 5b). In fact you don't need to unwind the paper strip to tell if the experiment was successful, instead just observe when the two sides switch colors.

However all this happens in an instant, too fast for the eyes to ever catch when the flip occurs. Sometimes this flip happens in seconds and sometimes you need to wait for minutes to see results. The switching/flipping of sides, can happen continuously several times in a row, in cycles locking and unlocking the object (Figure 6a and 6b illustrate two possibilities in Top View). The First Possibility, which is the more likely one is illustrated for further clarification (Figure 7) when the paper strip is straight not wound up in a spiral and what happens when the flip occurs during one cycle. However in reality a spiral is required for the experiment to work.

Other versions of this experiment were conducted using for example a metal pin which was attached to the paper strip with the round head left on one side and the neck on the other. The finding was that placing additional objects that are fixed anywhere on the strip makes them flip as well, together with the paper strip not affecting or slowing down the results. If placing additional objects that are not fixed on the paper strip, the result is that their location remains the same but they go one level down or up which shows again that the test strip does actually flip/spin around the object. Most of the time no movement of the paper strip during spinning could be observed. Sometimes a very small movement could be heard when the object gets unlocked as a result of the spin and drops to a lower level. If an Object was entirely excluded, flipping still occurred, but it is undetermined whether the flipping occurred faster if an object is included or excluded. The flipping usually happens when the paper strip with or without an object was either left wound up on the table in a resting state or during the process of manually unwinding the paper strip. The

rotating movement that happens during manual unwinding, has been observed to often cause the flipping of sides to occur. In fact rotational movement speeds up events. Placing more than one Object + Paper Strip in close proximity to each other has been found to cause results to speed up, but more testing needs to be carried out to determine which patterns are most successful when all other variables are left unchanged. Also putting more than one paper strip in layers one on top of another and winding them together around an object, causes them to always flip together as a group when the spin occurs.

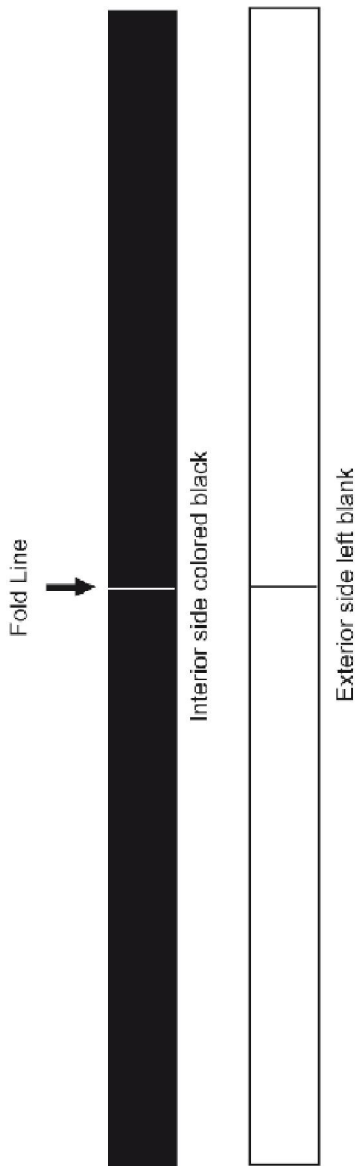


Figure 1

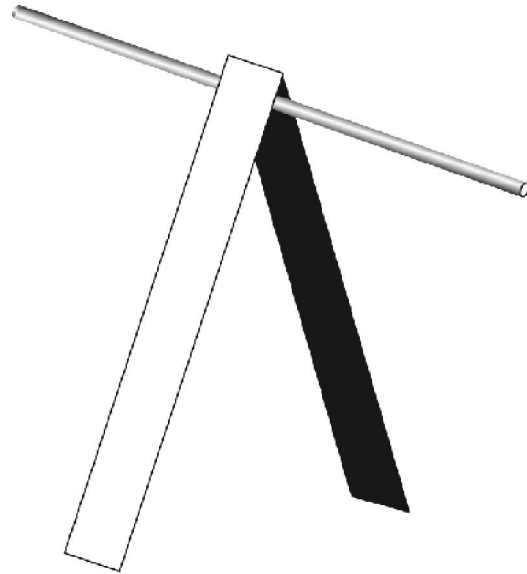


Figure 2.

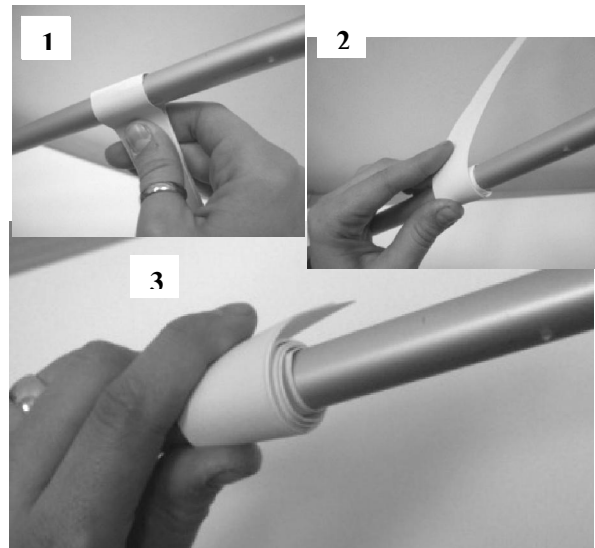


Figure 3.

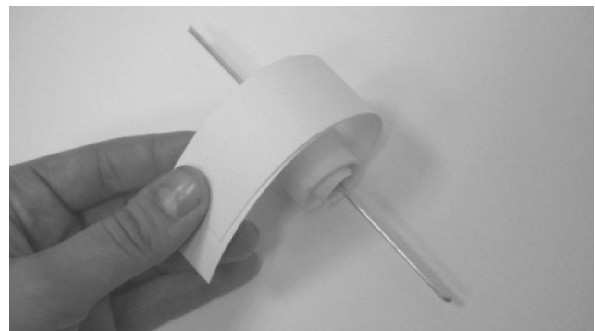


Figure 4

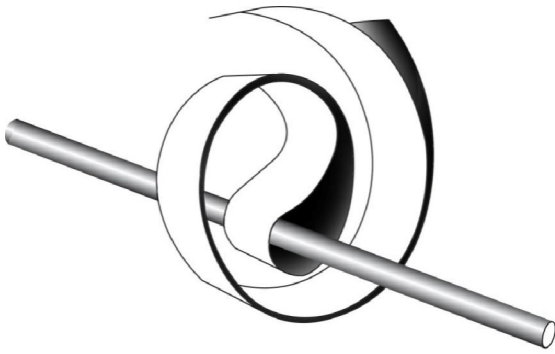


Figure 5a.

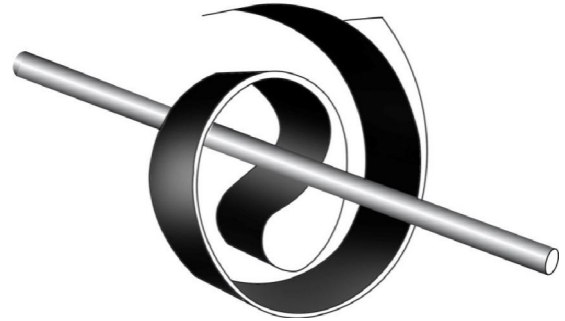


Figure 5b.

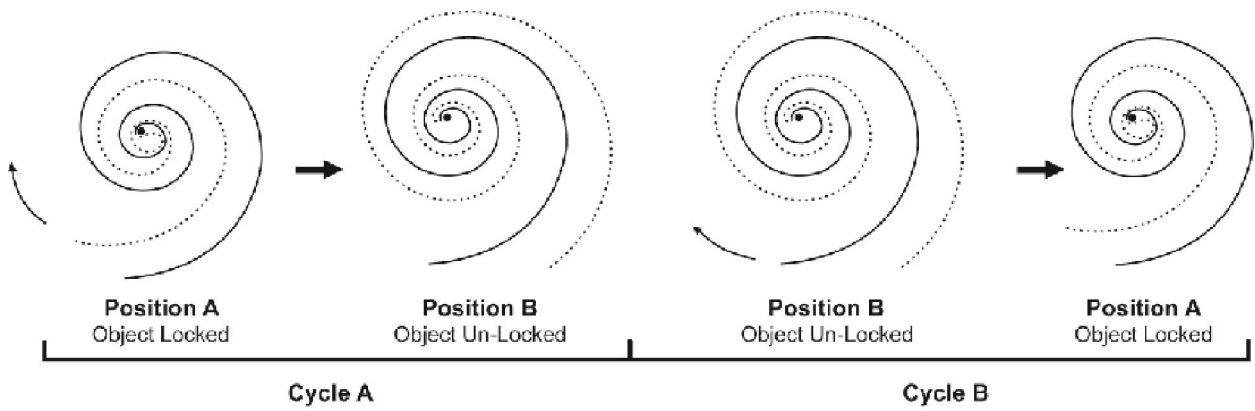


Figure 6a. First Possibility

Spins in one direction always for example clockwise in which case one half first rotates, then the other half then again the first and so on until rest.

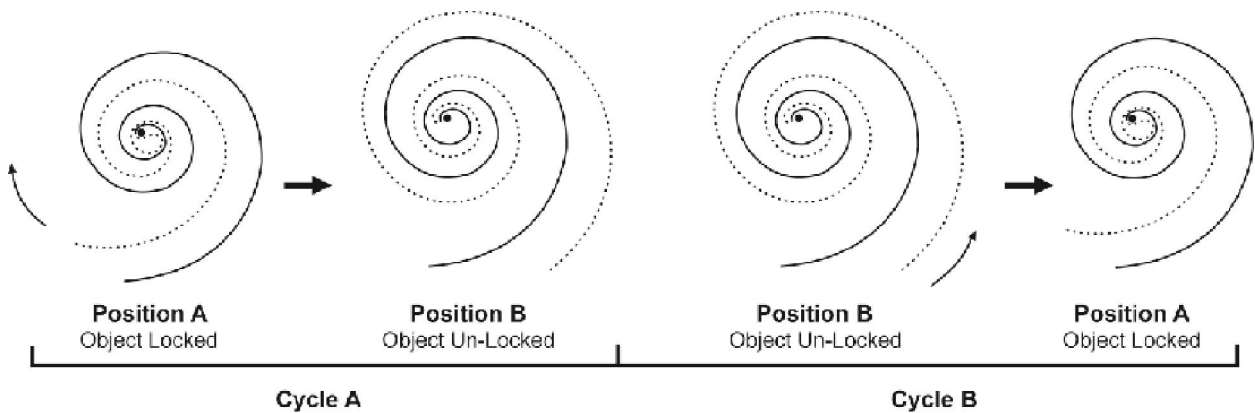


Figure 6b. Second Possibility

Spins in two directions for example starting clockwise then anticlockwise and then returning to clockwise. In this case only one half rotates.

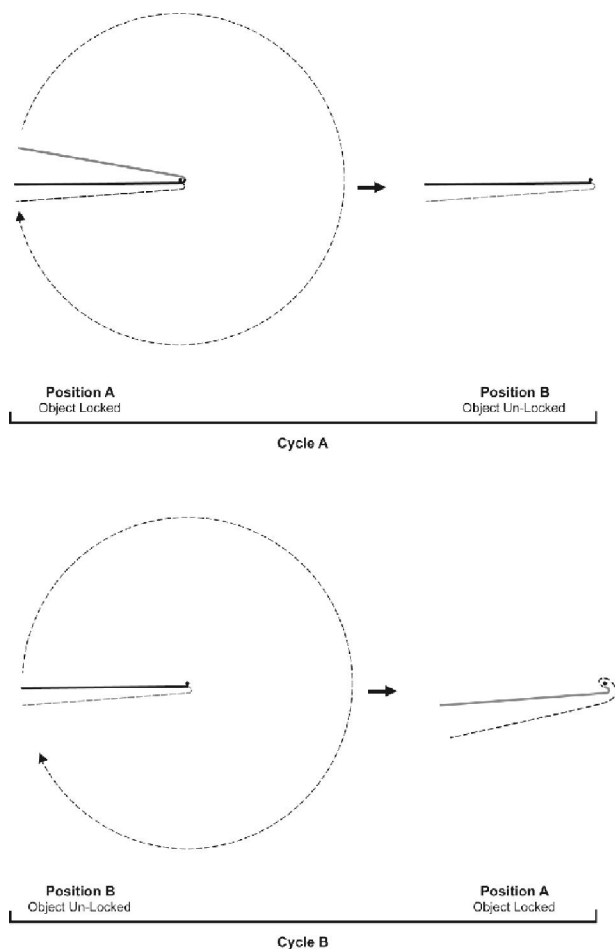


Figure 7.

2. Quantum Physics Background

The examination of matter at nuclear and sub-nuclear scales has brought about a standard molecule hypothesis and a group of particles that fit into a network of classes in light of properties (Dirac. 2008, 68-72). Quantum hypothesis delineates particles as acting both as particles and waves (Bergmann. 2002, 37-39). The duality of the alleged wavicle. Albert Einstein had claimed the presence of the luminiferous aether as unnecessary to a clarification of why light is transmissible in a vacuum (GrÅ, 2009, 89-96). Later, in his Relativity theory, he attested the presence of an aether of sorts when he understood that his General Theory, a hypothesis of gravity, obliged space to have physical properties and, in this manner, having a property that permitted it to bend much as a sheet of metal would do (Bergmann, 2002, 40). However, with the exception of it would be a sheet of super density nature. It was then hard to envision how space and matter existed together as two separate substances (Cassirer & Cassirer, 2003, 18-22). With the ascent of quantum principles of the vacuum itself in the

twentieth century, where space appears to be active, and various theories has come to play (Valona, 007, 103). A zero-point energy has been proposed that appears to uncover that space is significantly less material than imagined by Einstein and that the inconsistency of quantum mechanics and relativity hypothesis is made considerably clearer at the nanoscale of the zero-point field (Maggiore, 2011, 6).

Frictionless, exceedingly connected non-rotation movement of the liquid particles portrays the superfluid state, as a rule. The superfluid obliges to revolution by shaping a cross section of quantized vortices in which the vortex center, breaks the topological requirement against rotational movement (Steinhauer, 2012, 5). In a superfluid, the structure of vortex centers can be more entangled than in ordinary fluids in view of the numerous degrees of flexibility possible by the 18-dimensional parameter complex. A theoretical spinning of the universe instigates revolution of photons, electrons, and systems. Any mixture of matter in the universe is pivoting regarding some edge of reference. This incorporates planets, their satellites, heavenly bodies, and universes, and potentially bigger structures and small alike. At some stage in the advancement of the universe, rotation gets to be inalienable in its items. On the off chance that all articles are made out of one all-inclusive substance, and this appears to be certain, then vorticity would be a typical procedure and vorticity produces interlocking or intermeshing structures from iotas and particles to cosmic systems. The electrons circle in shells and orbitals, in particular, numbers. The spinning action and the energy vertices within the intrinsic structure of the paper, as explained above, to some degree could explain the reasons why the sections of the paper changed sides continually at speeds invisible to the eye.

Quantum physicists found that physical particles were comprised of vortices of energy that are always turning and vibrating, every one transmitting its own particular signature. In magnifying a particle, there is an imperceptible tornado like vortex, with various limitless energy vortices commonly named quarks and photons. An iota is made up these parts. By zooming in closer and closer inside the structure of the particle, the result is a physical void. The iota has no physical structure; this would mean that the piece of paper has no physical structure, and one section of it would easily pass through the other resulting into the swapping of sections. However, even though physical things truly don't have any physical structure, the particles are made up of undetectable energy, not substantial matter, this energy flows in form of vortices and do not cross each other guided by forces of repulsion inherent in each atom making the initial

observation that the paper passed through the object invalid.

Explanation of the Phenomenon using Quantum Physics

When the paper is rolled into a ring, the bending action introduces stresses, which the paper section elasticity will tend to oppose and unwind. As the paper begins to wind, it drags on the air around its periphery and sets them into spinning motion, by Bernoulli's principle, high velocities in fluid results into a fall in pressure. The air is sucked between the layers of spinning sections where it is pre-framed into vortices containing vortices inside of vortices formed as long strings turning around their axis. Essentially, the object is not co-pivoting the spin explaining why its shape, size, or material does not affect results. Since the paper is unwinding, its adjacent sections are moving in opposite direction each pivoted in its own axis, this accelerates the spinning velocity of the air vortex in between (Greiner & Muller 2009, 109). A depiction on what happens in airplane and wind turbine wings.

As the unwinding continues, the air strings begin to turn quicker and speedier around their axis driven by the drag and space between the films. Since the coiling of the paper around the object involves stacking a layer over the other and the inner layers have a smaller radii compared to the outer layer, though it does not give perfect golden ration, the results is a kind of golden ration definable as a Fibonacci Spiral (Hashemiparast & Hashemiparast, 2011, 808-815). This means that air vortices will be passing through sections of larger radii and others with small radii as the paper spins. As the air moves towards the outer layer, the peripheral speed increments alongside the sweep thus do the drag level of the air vortex strings. As it moves along the unwinding paper section between the twofold layer the air needs to pass cavities where the volume tends to be is greater and in some cases smaller when direction changes because unwinding increases spaces between the layers while winding brings them closer. At the point when the air vortex passes a tighter section it gets additional energy and when it passes a bigger section, it is permitted to expand thus energy falls.

The "air strings" are turned along their axis in a decreasing range prompting an expansion of the angular pace. As the air comes to farther, closer to the edge, the strings begin to twist because of the expanding peripheral speed. At the point when the air passes the diverse cavity spaces, it begins to rhythm in a manner that is relying upon the relative speeds of the sections. By harmonizing all these degrees of freedom into symphony, a lot of spinning power is generated;

Victor Schauburger worked on the same principle described above.

However, there are additional theories facilitating the explanation to clarify how the intense rotation is created. This can be the clarification, based on the understanding of the vortices. At a specific spinning speed, the system must reach a level where it attains "congruity/harmony" and the air is "self-spinning" and producing a drag that "pulls and pulls" the sections of the paper. Possible generation of static current can be expected from the rubbing layers; however, this has not been experimentally tested for a similar situation. Nevertheless, elevated amounts of friction-based electricity have been accounted for in comparable quartz gadgets linked with the ZPE (Evans & Crowell, 2001, 120-123). ZPE is the zero point energy or vacuum energy, which explains the existence of energy in a vacuum (Lehnert, 2015, 46).

Another explanation to the phenomenon relates to the "typical" aerodynamic features of spinning air and a property of fluids named 'the Coanda influence. The Coanda phenomenon is the property when a streaming fluid tends to "stick" to a bended surface, which in this case is the curved nature of the unwinding and winding paper sections (Feynman, Leighton & Sands, 2003, 136). In examining the spiral nature of the experiment, it is observable that its takes curved nature. At the point when the spinning towards a larger cross section in the unwinding phase it will tend to stick on both surfaces thus suddenly increasing its diameter, air molecules spreading out thereby creating a partial vacuum. This produces a pressure drop between the layers, pulling the ends closer together and initiates the winding phase. This produces the opposite of what happened in the previous phase. Essentially, it is the same; it is just a matter of pressure contrasts. The result is a continues change of phases and thus continuous spinning until rest. As the spinning continuous through stages of expansion its reducing pressure suck more air particles into the system to a point when the pressure at the opposite sides equals the pressure drop, and the layers of the paper cannot keep spinning, this brings them to rest.

3. Taoism, Yang and Yin and Energy Forces

When the paper is wound around an object, it starts to behave like helical springs and apply a torque or rotational power. The finishes of wound paper pull on each other, and when those segments pivot around the focal point of the winding, the pulling tries to push them back to their original shapes. Despite the fact that the pull suggests other sets of response, the sections of the paper are subjected to bending forces instead of torsional forces. IT can, therefore, store and discharge angular energy or starts to rotate by

deflecting its sides about the body centerline pivot. For pivoting to happen there must be an action and reaction, a concept captured by the words yin and yang.

The words yang and yin originate from Taoism, an old theory that is more than 10,000 years of age (Capra, 1992, 79). Yang, and its correlative inverse, yin, are fundamental characteristics of all physical matter in the universe. The paper structure is physical, so the words yang and yin apply to the behavior of such a phenomenon also. The yang and yin are not simply words or compels. They are an approach to consider things that are effective and accommodating. The idea of a primordial unity that is separated into two is an all-inclusive rule in both Western and Eastern logic (Garvy, 2005, 52).

Yin and Yang are easier explained philosophically or theologically. In Western movement, the first section of Genesis in the Hebrew Bible expresses that God isolated the void or the unity into the sky and the earth, dull and light, the area and the oceans, male and female. This is the idea of an essential "twoness" of correlative alternate extremes that frame the physical world.

The Three Principles of Yang and Yin

These standards are essential. By understanding their meaning and application in real life, one can easily understand how they relate to the experiment in question. Each of the accompanying standards expands on the past one, so the least complex one is given first.

1. The essential headings in space: In and out- This is likewise the same as contracted and extended, little and substantial, thin and fat, centripetal and diffusive, and pull and push. These just require one vector to define

2. Trajectories/Directions: Straight and bended- This is the same as straight and curved. (Bended requires a second vector or bearing.)

3. Frequencies: Higher and lower- This incorporates the hues, the sound frequencies, the electrical frequencies, speed, for example, fast and slow, VHF or high recurrence and VLF or low recurrence. These criteria require no less than a third vector or heading in space to create them.

These are the three fundamental standards. There are more standards of yang and yin, yet they are blends of the above.

YANG

Yang is a material science idea that at its root implies internally moving energy. It additionally ordinarily implies downwardly moving energy. "Downwardly-moving," in this article, implies moving toward an inside, for example, the focal point of the

earth, or the central axis of the paper. So internally, moving and downwardly moving mean the same thing. In the case of the experiment, it depicts the paper sections, which is moving towards the axis up to the turning point. It is a movement of molecules or particles. These particles are moving toward one another, or toward an inside. This deep down moving movement offers ascend to the qualities that are viewed as more yang. According to Wang (2005, 55), properties of Yang include:

a) Vibration – as the particles hit one another and create motion through the paper

b) More compacted, consolidated, and/or contracted – because of the internal movement of the particles towards each other. It likewise makes yang mean higher pressure.

c) More dry, with less water, and harder – because of the particles coming closer to one another and pushing out the water and other milder matter.

d) More action and movement as the glow and close nearness of the particles rub up against each other.

e) More connected with maleness than with femaleness. The male energy is viewed as sultrier and more packed

f) More linked with emanating than engrossing. This is likewise because of the heating and compacted nature of yang.

g) More physical in light of the fact that physical matter is more thick and compacted than etheric or ethereal substance, which is more extended or yin (the inverse of yang).

h) More Full. This is because of the most prominent focus or higher thickness of particles. Conversely, yin is less filled.

YIN

At its root, yin implies particles are moving further away and as a rule in an upward course. The word upward here means far from an origin, for example, the focal point of the earth, or of the universe. For instance, the unwinding of the paper. In this sense, "moving away" and "moving upward" mean precisely the same. This kind of movement of particles offers ascend to the characteristics of yin, Wang (2005, 70) summarizes the properties of Yin as shown below.

a) More cool – as the particles are dispersed, they collide upon one another less, making less rubbing and less heat. In the case of the unwinding paper, torsion force decreases and finally changes direction.

b) More extended – as the molecules disperse, they consume up more room shaping an extended mass. It additionally makes yin mean lower pressure.

c) More loose and soft – the particles disperse, for example, water can get in, or other particles are

absorbed. Fluids are a standout amongst the most yin substances while solids are a standout amongst the most yang or concentrated substances.

d) More soft action – as the particles disperse, they "float" progressively, and it appears as though there is a moderating of movement. They additionally do not skip off one another as much, so this causes less movement, as well.

e) More involved with engrossing than with emanating. This is because of "cooler bodies in space" have a tendency to assimilate heat, while hotter ones have a tendency to emanate their warmth. So this is specifically identified with the cooler nature of yin.

f) Less physical – on the grounds that as the particles move outward in space, their mass turns out to be not so much physical but rather more ethereal or ethereal.

g) More void. This is because of the lower convergence of particles in space.

In synopsis, Yin alludes to a nature of some matter that has a tendency to be colder, more extended, more disorderly, more crumbled, and diffusive in nature (which implies moving randomly and often upward), regularly more female in nature, having a tendency to be sodden or more watery and gentler.

Explanation of the Phenomenon using Taoism, Yang and Yin and Energy Forces

Yang has a tendency to be more contracted, thicker, gathering, expanding in mass, warm with more interior warmth, more aligned out or less related to entropic, dryer, and regularly more physical. The young phase of the phenomenon is defined by the paper section that is pulling, the outer layer in the paper appears to be elastically stretched and would react to this by pulling back its particulates and tend towards the original shape, compacting. Yin has a tendency to be more extended, vanishing, less thick, more haphazard, less chaotic, wet, clammy and at times more ethereal. For instance, water is more yin, while air is more yang. The warm tropics are more yang while the regions close to the north and south posts are significantly more yin in light of the fact that they have lower temperatures. In the experiment, the inner layer of the paper tends to stretch, moving in an outward layer this tending to yin. These two forces satisfy the yang and yin condition for balance to be created.

More yang means the particles of matter are closer to each other (more contracted or compacted), and there is more friction between them, producing more warmth, and mass that is more compacted. This describes the ultimate condition reached when the particles in the pulling layer of the paper section reach maximum and close to the axis of rotation.

Conversely, more yin implies that the particles of matter are further separated (more extended). This causes less contact between them, which causes less warmth or more coldness, less light, and less mass. At the end of stretching the stretching layer of the section, attain a condition that its particles are dispersed, and small mass covers a large area.

Yang has a tendency to be a lower recurrence or slower moving waves while yin has a tendency to be a higher recurrence of energy or speedier moving vortices of energy. For the experiment, the outer part of the section is a lower recurrence and more yang, while the inner is a higher recurrence and to some degree more yin. These velocities are translated to the velocities of the vortices of energy at the two sections of the paper.

In the sense of direction, yang has a tendency to be internal moving or centripetal. It is additionally largely descending moving toward the focal point of the axis of rotation. On the contrary, yin has a tendency to be outward moving, split separated or centrifugal. It likewise has a tendency to be upward moving far from the center. A combination of centripetal force and centrifugal force acting on the opposite layer of the same material results into a rotation since they induce and anticlockwise and clockwise torques about the axis of rotation. The concept of chaos comes into play in balancing these forces. Yang is not chaotic but rather more composed or more incorporated. This is a concept explained in physics as anti-entropic. Conversely, yin is more chaotic, or more dispersed, or more deteriorated, or tended to entropic states. This chaos calls for Taoism when nature sets are to restore balance (Hu & Allen, 2005, 87-93). The centripetal force of yang suggests that the layers will keep moving in the same manner unless balanced by another force, which is explained by the Taoism energy concept, for each action there is an equal and opposite reaction force, which in this case is the yin (Practical Taoism, 2000, 37-56). Rotation of the two sides will continue about the axis with each paper section changing roles at yang and the other yin until the forces become equal and balance then it stops.

4. Conclusion

The involvement of energy vortices, golden ratio, zero point energy, yang and yin and the physics of Taoism are applicable to the explanation of the phenomenon observed in the experiment. The phenomenon is brought about by the interaction of these laws of physics working to supplement each other.

It begins with the bending of the paper into a curve, this induces stresses along the paper and reaction to overcome this stress results into spin. The

energy of this bending is transferred to the surrounding air by drag, which in turn sets the air into swirling motion in the form of vortices. By quantum physics theories, matter is made of energy vortices and not solids observable by the naked eye. All energy fields there appear to be spinning on neutral axes, making the entire system of paper and air around it to behave as a superfluid and spin continually until the forces causing the spin balance out.

Physics of Taoism supplements the explanation of quantum physics by its description of how energy flows within a system and eventually balances to create order. The relationship between yang and yin plays a critical role in elaborating how forces involved in the spinning are generated, their effect and what brings about their eventual rest. According to this explanation, for every action there exists a corrective opposite, it uses the concepts of contraction-expansion and centripetal-centrifugal to explain the direction of spin, its effect on the opposite forces and eventual stop when the forces becomes equal. In summary, the paper obeys the quantum physics of energy field perspective and operates within the yang and yin and physics of Taoism. These findings and knowledge can be used in the development of future transportation machinery (a development of Victor Schauberger machine), additionally, the understanding of energy vortices within the universe, the yin and yang concept, can be an efficient key to the development of space transportation.

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