

TAOISM: SCIENCE-BASED CONCEPTS FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

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ABSTRACT

Increasing wealth disparity, polarization of discourses, move into the Anthropocene epoch, people's migration, terrorism...are all pieces of evidence that our worldview ought to evolve quickly if we want our eco-system, our humanity to survive and to keep claiming we are the smartest species on earth.

The elements of ancient Chinese wisdom like *wu-wei*, the power of *de*, and practicing meditation, echo many of the principles which have emerged in recent years, such as *spiritual leadership*, and are also expressed in organizational models such as *Holocracy*, *Sociocracy*, or *Teal*, and in economic concepts, such as *enlightened capitalism*, all seeking at making our world more sustainable. So, what can we learn from the school of thoughts of the Warring State period, 2,500 years old, and can this help us address the wicked problems we are facing both in the West and the East?

In this article I will look specifically at Taoism through the lens of Clare Graves's human development model. Graves defined eight levels of human consciousness, six defined as *needs-based systems* and two as *being systems*. According to Graves's research, only when thinking at the latter two levels can we develop sustainable systems. When analyzing some key Taoists concepts through that lens, looking also through Ken Wilber's *trans fallacy* concept, it is hard not to conclude that the Taoist philosophy operates at Tier 2 level and offers many keys to develop a more functional eco-system.

Yet, are these Taoists assumptions and concepts plausible and viable in today's world? Can they really support the development of a more sustainable society? To answer these questions I will look at the latest research in neuroscience and social science. Focusing on Taoism, I will look at three principles.

First, the *cycle of reversion*, that is nothing should be taken to extremes or it will turn back to its original state, causing the opposite effect, a concept illustrated by the design of the Yin and Yang symbol. I will explore this principle through the work of Wegner on *the ironic effect of conscious efforts* and of Frankl on *paradoxical intention therapy*. Both showed that conscious pursuit of a goal often leads to missing that goal and it is what the Daodejing refers to as the quests of opposites. In any dyad, Laozi wants one to pursue the part one does not want: choose weakness rather than strength, darkness over brightness.

I will then look at the research on *downregulation of the prefrontal cortex* to explore the validity of the state of *wu-wei*. The state that Laozi wants one to enter into is similar to what cognitive neuroscientist Arne Dietrich referred to as *transient hypofrontality*, that is, the downregulation of our prefrontal cortex. His work on the physiology of athletes being

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

in the zone, that is, in *wu-wei*, showed that due to the intensity of the exercise the prefrontal cortex is literally shut down for a while, giving a sense of peacefulness, of living in the present, of flow, of oneness with nature and the universe. Reaching this state allows one to be more authentic, spontaneous.

Next, I will look at the notion of *categorical rigidity*. Zhuangzi was very concerned by the risk presented by language. This categorical inflexibility hinders what is often referred to as *divergent creativity*. This human limitation has now been proven scientifically, for instance, by the work of Guilford on the development of *unusual alternative task*.

I will finally present an environmental project showing how Taoists principles, based on system thinking, can enhance biodiversity.

I will conclude that Ancient Chinese wisdom, Taoism in particular, provides very valuable elements to help humanity develop a more sustainable world.

Keywords: Taoism, sustainability, Eco-system

INTRODUCTION

There is not a single week during which a new example of enormous wealth disparity is not spotted; Not a single week when we do not hear a polarizing discourse from an influential person or not; Not a single week not giving us evidence that we are moving, and most likely have moved, into the Anthropocene epoch; Not a single week when a new sad story about migrant people is not on the news; Not a single week when an act of terrorism is not committed in what we would consider a safe environment. All these events are here to alert us about the urgency to reconsider how we think about our development model. They are pieces of evidence that our worldview ought to evolve quickly if we want our eco-system, our humanity to survive and to keep claiming we are the smartest species on earth. Once this is acknowledged, the question becomes: change towards what model and how?

The beliefs of ancient Chinese wisdom like *wu-wei*, the power of *de*, or practicing meditation, echo many of the principles which have emerged in recent years through various frameworks, such as *spiritual leadership*, through organizational models such as *Holocracy*, *Sociocracy*, or *Teal*. They are also reflected in economic concepts like *enlightened capitalism*. These emerging ways of thinking, of operating seek at making our world more sustainable. The similarities I observed between these modern concepts and ancient Chinese wisdom triggered my interest to look deeper.

During my PhD journey, and living in China at the time, I got the opportunity to explore ancient Chinese wisdom through the lens of Clare Graves's human development model. The first part of this article will review the notion of worldview, Graves's human development model and the distinction between *human having* and *human being* to help define how one should think to define a sustainable model of society. I then will present

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

several months of research on Taoism and how Taoist thinking matches Graves's view of a *human being*.

As many people, rightly so, are questioning how relevant Taoism could be in today's society, I will share the data I collected on recent western neuro and social science research for some of the Taoist ideas and look at whether or not they seem plausible for our today's world. I will finally share the eye-opening biodiversity project carried out in China by the UK-based Alliance for Religion and Conservation across the Taoists sacred mountains.

With this paper, my aim is to contribute at building bridges between science and the daily world, between the ancient and the modern world, between the West and the East and all other combinations between these six views. All these elements do not exist in insulation; they are just lenses by which we look at a single system: our eco-system.

DEFINITION OF WORLDVIEWS

On its online edition, the *Oxford English Dictionary* defines worldview, or world view as well as world-view, as a "particular philosophy of life or conception of the world". Sigmund Freud describes *Weltanschauung*, the German word for worldview, as an intellectual construction which solves all the problems of our existence uniformly on the basis of one overriding hypothesis, which, accordingly, leaves no question unanswered and in which everything that interests us finds its fixed place. Worldviews embed what we consider most important, and the ways we see our relationships, the world and ourselves and include stories, rituals, myths, and metaphors used by a group or individual, helping create shared meaning. Not being aware of one's own worldview makes it easy to impose it to others advertently or not. Through his quest for a definition of psychologically healthy mature adults, Clare Graves, American psychologist (1914-1986) realized that people's answer to this question relates to their word view or *Memes*: "Meme reflects a world view, a valuing system, a level of psychological existence, a belief structure, an organizing principle, a way of thinking or a mode of adjustment" (Beck & Cowan, 1996, p.51).

To give any relevance to the notion of worldview and its influence on people's behaviors, one needs first to agree that our lives are not solely determined by our genomes, a reductionist worldview, but that they evolve through the interactions with our surrounding. This is what biologists refer to as *epigenesis*.

CLARE GRAVES HUMAN DEVELOPMENT THEORY

In order to understand the analysis of the Taoist thinking through Graves's model, it is important to comprehend the model itself. This is the purpose of this section.

Background

Dr. Clare Graves dedicated his life at exploring the differences in personalities of mature adults as they relate to their human experience. Through his research, Graves

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

started to conceptualize his idea of an evolutionary cycle that alternates between phases where individuals attempt to make the world fit to them that is expressing self and phases of adaptation to the world as it is, that is denying/sacrificing (Lee, 2009). Graves matured his model that he referred to as the “Emergent Cyclic Double Helix Model of Mature Adult Bio-Psychosocial Development” (Graves, 1970). *Emergent* implies that individuals evolve as they face new life conditions. *Cyclic* refers to the repeated switch between express self and deny/sacrifice self. *Double Helix* refers to the coupling of the life conditions and mind capacities and to the notion that the development of human beings is not finite (Graves, 1974). *Mature adult* refers to the type of individuals Graves studied. *Bio* refers to that which is necessary for development. *Psychosocial* refers to subjective, interior development.

His model, also referred to as ECLET for Emergent Cyclical Levels of Existence Theory contains so far eight levels of development (Cowan & Todorovic, 2005):

Express self to stay alive as an organism and perpetuate species, changing to
Sacrifice self to the traditions of one’s elders, changing to
Express self impulsively at any cost, changing to
Sacrifice self now for reward later, changing to
Express self in calculating fashion and at the expense of others, changing to
Sacrifice self now for getting acceptance now, changing to
Express self as self-desires but not at the expense of others, changing to
Sacrifice self to existential reality of existence and adjust to it.

These eight systems represent for Graves the different life conditions human beings have been experiencing so far and the mind capacities they have developed to respond to the problems generated at each level of life condition. As individuals go up the spiral their degrees of behavioral freedom increase. Graves also demonstrated that beyond the second level of existence, there is no correlation between the individual states on the spiral and their level of intelligence (Lee, 2009). He also noticed that while the first six states of human evolution are driven by *deficiency motivation*, that is issues of subsistence ranging from physiological survival to mastery of materialism, the last two systems are abundance motivated, that is focusing on the higher purposes of being human (Cowan & Todorovic, 2005). To conceptualize the different levels of potential of his double-helix theory, Graves decided, for the first six state of existence, to use the first six letters of the alphabet A-F to represent the life problems and letters N-S to represent the *neurological coping systems*. He primed the letters A, B, N, O to illustrate tier two life conditions and related mind capacities. The eight value systems are therefore represented by the following interactions: A-N, B-O, C-P, D-Q, E-R, F-S, A’-N’, B’-O’ (Graves, 1974).

The eight value systems (Cowan & Todorovic, 2005)

A-N (Beige value Meme or ^VMeme)

Survival instinct and animalistic behavior characterize the beige ^VMeme. It is an express-self system although the concept of self is not fully developed. Graves describes

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

it as the autistic, automatic and reactive existential state where the notion of space and time does not exist. Recurring physiological needs are the focus of our attention: food, shelter, and sex. Efforts are a response to immediate needs or desires. The notion of God, leadership, organization, ethical thinking, time or space does not exist. New born babies are naturally operating in beige mode. These people are not primitive but simply use mind capacities the most suited for their environment.

B-O (Purple)

The next step in the evolution, the purple ^VMeme, focuses on safety and security. People in purple state satisfy their safety and security subsistence needs through superstition and tribal life. Cause-and-effect relationships start developing, giving predictability to a seemingly chaotic world. As the need for dependency increases, mutual reciprocity develops and the individual now exists through the tribe or clan and traditions, rituals are the prime values to find safety. One sacrifices self to the traditions of one's elders and ancestors. Purple individuals are animistic assuming the presence of a life force in everything. They seek harmony with nature's power and trust in blood relationships.

C-P (Red)

At this developmental stage, humans move for the first time to a more individual/self-expressive experience with a differentiated sense of self, realizing their personal power and their ability to impact the world. Red creates a society where the one at the top runs the show and others subsequently bow to their direct superior, where some have and other have not. Feeling threatened by the environment and others, human in red condition seek domination as a way to cope with this threat. Even if red is often witnessed in its unhealthy expression, it is a critical stage to embrace in its healthy expression for any of us to develop creativity, sense of power, freedom, fun, and notion of control.

D-Q (Blue)

With obeisance as its prime value and a sacrifice of self-desire now to get a lasting reward later this human absolutistic existential state emerges when our neurological system, rich in adrenaline, is activated by our higher awareness of similar death problems for the "haves" and "have nots" and a need for higher safety and order in the chaotic world created by the C-P level. It results in an ethnocentric worldview where the conception is that the world is orderly, predictable and unchanging, that there is only one truth and that those that are different are not living correctly. As we transcend through this ^VMeme, we find meaning and purpose, control impulses, and experience guilt. There is a sense of good and bad, right and wrong and that what occurs in life is predestined by some higher power, most often conceived as God.

E-R (Orange)

Express self for what self-desire without shame or guilt is the central theme of the orange ^VMeme. It is time when science takes over religion, when societies move from sacred to secular, knowledge and information define the life individuals should live. The belief in divine fate switches to a belief that man can improve things by himself. In opposition to the absolutistic blue level, the orange system is multiplistic. Because most

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

things are linked to an economic value and that what matters most is self-achievement and control of one's world, people or organizations operating in a pure orange ^VMeme can be strategic, manipulative and materialistic which can lead to greediness and lust. The focus on science, efficiency, rational thinking, autonomy, independence, search for material abundance here and now of the orange system has been the source of most of the innovation the worlds knows today, though one can argue here that major Chinese innovations are not a result of these processes but rather come from Taoist concerns such as the preparation of elixirs of immortal lives and a sense that each and everything is connected (Needham, 1981).

F-S (Green)

Once he discovered that material wealth does not bring fulfillment, that self-achievement insulate him from most in this world, man seeks consensus, group recognition, stronger human bonds. Like blue, F-S is a sacrifice-self system but here the sacrifice is for the benefit of being accepted now. Green values equality, community and focuses on feelings and thoughts and moves from a multiplistic view to a relativist one. Empathy is more valued than logic and this is how others are accepted in contrast to pity in the red ^VMeme, compassion in blue and consideration in orange. Relationships are more important than individual power and decision are based more on feelings than knowledge, rules or information. At this ^VMeme, man reveres diversity, but the strong need to be accepted leads to consensual decisions supported by the entire group. Humanistic and egalitarian values prevail and environmental and social sustainability are the hallmarks of green. While acceptance and inclusion are praised, the green level can be rigid in its demands for open-mindedness.

G-T or A'-N' (Yellow)

Express self but not at the expense of others is the first being system, in contrast to previous subsistence needs based systems, and the beginning of the second tier triggered by a second set of survival problems such as nature depletion, overpopulation, individualism,... It is when one's shifts focus from one's own survival to the being of the entire spiral, when man starts considering that the highest caring attitude is not to impose to others. A key characteristic of yellow individuals is their absence of fear. They are not afraid of lacking food (A-N) or shelter (B-O), not afraid of predatory man (C-P) or of God (D-Q), not afraid of lacking consideration or leave their mark in this world (E-R) due to their awareness and trust in the ebb and flow of the universe. This lack of fear and absence of compulsiveness makes them more capable at trying new alternatives to solve problems in a very collaborative way. The yellow man "has ambition but is not ambitious and its purpose of living is to be independent within reason. He seeks at continuously developing a *natural pathway* without focusing on doing or having and by considering other's ideas as interesting but not critical. As yellows peaks, one has full consciousness of all tier one levels of the Spiral and their healthy expression is seen as a necessary contributor to the viability of the Spiral. Not trapped by fixed rules imposed by external authorities or dogma but driven by an "inner-directed core", yellow has the ability to adapt and navigate up and down the spiral according to the circumstances. This is what Becks and Cowan (Beck & Cowan, 1996) define as *FlexFlow perspective*. This also gives him the ability to demonstrate authoritative or democratic behaviors as

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

circumstances require. Yellows, who belong in the category of systems that are expressive rather than sacrificial, aim at finding clear solutions which can embrace perceived paradox without negatively impacting individuals or the society. They are pragmatic, integrative and systemic and focus on what adds value. They seek for win-win-win solution that is serving me, you and the Spiral. With them status symbols and privileges disappear. The most capable, no matter their level or tenure are the ones who gain authority. They have the certainty that their needs will be met in some form and do not feel the need to compete, do not need to harm others to achieve their personal freedom. From a blue standpoint yellow seem disrespectful and inconsistent. To orange they appear “unwilling to commit themselves fully to achieving objectives”. Distant, cool, not spontaneous is how yellow is perceived by green. As yellow people evolve, they start being concerned by *why* and *who* questions rather than *what* and *how* questions. They realize that individuals cannot solve the world’s problems, a global and collective view start emerging under the in the transition to the turquoise ^VMeme.

Beyond Yellow

In his research, Graves found six individuals that exhibited a different conceptualization of the psychologically healthy mature adult in operation than the previous seven systems. This limited sample gave birth to the eighth level of human existence referred to as H-U or B’-O’, also called Turquoise. Beck and Cowan described it as *The Holistic* ^VMeme with a “focus on the good of all living entities as integrated systems”. Detached from any problem of existence and driven by human faith and knowledge, B’-O’ man adjusts to a world he will never really know, following his senses rather than any established order. Like in B-O, the focus is on safety, security and kinship but this time applied to the whole spiral. Simplicity and minimalist living are the norm at this ^VMeme. The *coral* ^VMeme, named for the depth of the ocean is the last ^VMeme currently identified and illustrates the never ending quest of human beings.

When compared to other human development theories (Lee, 1999) such as the psychoanalytic (Freud), personality (Loevinger), behavioral (Watson), humanistic (Rogers, Maslow), moral (Kohlberg), cognitive (Piaget) theories or the more recent work of Kegan, Graves’s ECLET offer the most comprehensive and cross-cultural approach to understand how different value systems have shaped the worldviews of healthy mature individuals across the world as it incorporates cognitive development with social, psychological, and values concepts of development within both the individual and social structures.

KEY ELEMENTS OF TAOISM ANALYZED THROUGH GRAVES’S LENS

The Taoist philosophy (Daojia) has been expressed in the *Daodejing*. Like in Confucianism, *Tao* and *Te* are the two major concerns of Taoism but while it means a way of something for Confucians, for Taoist it means completely independent identity and replaces heaven in all its functions (Lin, Ho & Lin, 2012). It makes no assumption on human nature (Wong, 2010) and seeks at developing a true self in harmony with nature through expression rather than repression (Lin, Ho & Lin, 2012). It prefers liberalism

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

when Confucianism prefers collectivism and the ethical characters (jen, chung, shu, hsin, yi) are no longer the focus in Taoism (Lin, Ho & Lin, 2012).

Taoism presents very intriguing elements when looked at through a SD lens. After several readings, I present hereafter a comparison between what Robinet (Robinet, 1997), one of the most renowned expert in Taoism, as well as a few other authors say in their books or research papers on Taoism and what Cowan and Todorovic (Cowan & Todorovic, 2005), two of the most prominent researchers using Spiral dynamics, report from Clare Graves' research.

Laozi advocates...	Ref.	Graves says about Yellow stage people...	Ref.p.*
Holistic worldview	1, Loc.401**	they think systemically	378
Spontaneous way of life	1, Loc.433	If opportunity is there fine, if not, fine too	377
Impartiality to all possible point of views	2, p.94***	Always consider several interpretations as legitimate	377
Not to matter if praised or denounced	2, p.94	Not worried about what others think of him	377
Failures or successes are not important	1, Loc.100	Things done well preferred but made poorly does not matter	377
One self is nothing	1, Loc.100	Personal life absolutely not important	377
stay untroubled with desire	1, Loc.1184	Gets pleasure from simple things	377
Weak ties to organization and society	1, Loc.100	Unaffected by social reality	379
Laozi advocates...		Graves says about Turquoise stage people...	
For a new beginning / begin without end / constant renewal	1, Loc. 295/288/288	Man must return to his beginning and travel again his road at a higher level	397
Shutting oneself out of the exterior world	1, Loc.529	Autistic existence	397
That ultimate truth cannot be reached	1, Loc.441	you can only be not really know	397
Letting your body be right/that too much knowledge is destructive	1, Loc.529/521	Values what he feels not only what his knowledge tells him	398
Questioning, being poet	1, Loc.312/3289	Values wonder, poetic perception	398
None intervention (wu wei)	1, Loc.433	Values None interfering	398
Not to matter if praised or denounced	2, p.94	receiving plaudts of others mean little	398
Taoist sage should not rule	1, Loc.487	care not to dominate	398
Full harmony with nature	2, p.93	Learn how to live without balance of nature being upset	399
Chose to be weak and submissive	2, p.94	Chosen passive adjustment	400
Existential experience	1, Loc.184	Experientialist existential state	395
Yin and Yang in every thing and that binary values make up a single world	1, Loc.189/3056	Accept existensial dichotomies	395
Adjusting oneself	3, Loc.841****	Adjust to the realities of one's existence	395
For natural propensity to be marginal, of anarchistic nature	1, Loc.388	not concerned with proper behavior and rules	398

* Cowan & Todorovic (2005) ** (1) Robinet (1997) *** (2) Lin, Ho & Lin (2012) **** (3) Witt (2007)

Though one must keep in mind that Laozi has been translated from ancient Chinese to modern English and that many interpretations of the Daodejing have been made (Robinet, 1997), these tables show staggering thinking similitude between Laozi or Zhuangzi and the AN and BO worldviews of Clare Graves. Whether the notion of caring about the whole spiral is also a concern of Laozi and Zhuangzi is not absolutely

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

clear but one may wonder how to interpret what Laozi meant when he said that “each human being is a little universe” (Robinet, 1997). It is also worth noticing that for both Laozi and people at B’O’ stage, the passive adjustment to the world is self-chosen rather than determined, a significant difference with the B-O state. Yet both Laozi and Zhuangzi lived right at the end of the main C-P phase of China history and some 2,400 years before the A-N state emerged.

Let’s put back Laozi and Zhuangzi in their context. Like Confucius they lived in the midst of the *red* Warring States and like all other thinkers of that period they tried to identify how to reestablish some stability to a system at best in *beta condition* (time of doubts) and most likely in a *gamma trap* (time of turbulences). As Graves identified, in such circumstances some people or systems can move upward or downward on the spiral. Confucius seems to have taken the upward route by defining a worldview which fits pretty well Graves’s D-Q state. On the other end, Laozi and Zhuangzi may have been tempted to reconsider earlier life conditions. As Lee, Crawford, Liu and Chen (Lee, Crawford, Liu & Chen, 2007) analyzed, food, at least cereals, was abundant during the Zhou dynasty. Agriculture was well developed with all kinds of irrigation and harvesting devices already in use around the fertile Yellow river. One can then probably argue that a society at this level of development had also most likely found ways to protect itself against main predators. One could then conclude that this society had overcome its basic physiological and safety needs and was therefore not inclined to return to earlier stages because AN or BO life conditions would have re-emerged.

Other troubling elements are reported by Robinet (Robinet, 1997) when she states that Taoists were the ancestors of scientific thoughts, and that the Daodejing is considered as the seed of the world of multiplicity, a worldview which emerges at the E-R level. It sounds like if Taoists already had conceptualized some ideas of the orange state well before it emerged, though driven by very different purposes as mentioned earlier (Needham, 1981). Obviously the blue worldview was known to them as contemporary Mohists and Confucianists were advocating for it.

Could we then conclude that Laozi and Zhuangzi were actually not regressing but returning to the beginning and travelling the road at a higher level? Shall we count them among the rare exceptions operating with mind capacities preceding the corresponding life conditions as mentioned by Cowan and Todorovic (Cowan & Todorovic, 2005)?

To complete the analysis made so far and be able to answer those questions, let’s look at the notion of *pre* and *trans fallacy* of Ken Wilber (Wilber, 2013). According to Wilber, one can easily reduce trans-rational spiritual realization to pre-rational regression, or one can elevate pre-rational states to the trans-rational domain. From there, it is easy to assume that all non-rational states are spiritual, though pre-rational states are very different from trans-rational states. That is, the *oneness* felt by a child is not the same as the *oneness* experienced by a mature, responsible adult. The former is more a state of fusion when the latter is a state of deep connectedness in which the ability to use the mind is fully present, at least for those adults reaching that level of consciousness.

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

Let's look at the notion of *Te* under this lens. Children have limited knowledge and few desires. From that perspective they are not far from acting according to the original *Te*. Lao Tzu says: "The sage treats all as children...does not make them enlightened, but keep them ignorant" (Fung, 1976, p.9). Here, the word ignorant must be understood as simplicity and innocence, the translation of the Chinese *yu*. But can one consider the *yu* of the sage to be the same as the one of the child? "Certainly not" asserts Fung Yu Lan (1976). "The *yu* of the sage is the result of a conscious process of cultivation...higher than knowledge, something more, not less...great wisdom...not the *yu* of the child or of ordinary people"(1976, p.21). Fung Yu Lan further argues that the kind of *yu* experienced by children can be considered as a "gift from nature" while the one of the sage is "an achievement of the spirit" (1976, p.23).

Based on the above review of Laozi and Zhuangzi thinking as expressed in the Daodejing, keeping in mind the risks associated to the various possible interpretations of the original authors' meaning and translation variations, I am inclined to conclude that the Taoist worldview embraces elements from the tier one levels BO and DQ but above all reflect what Graves calls the tier 2 levels of thinking and being, A'N' and B'O' levels.

TAOISM THROUGH MODERN NEURO AND SOCIAL SCIENCE

A lot of neuro and social science work carried out in recent years seems to suggest that a number of principles enunciated by ancient Chinese philosophers are very plausible. I selected a number of these works supporting the behaviors of the people I could interview during my research and who fully embody ancient wisdom, Taoism in particular. As a word of caution, one needs to stay mindful that in today's world, the distinction between the various schools of thought from ancient Chinese wisdom is often blurred.

The cycle of reversion

In Chapter 9 of the Daodejing, Laozi talks about a wine vessel with a round base, which, as it gets filled, goes from being stable to tipping over and getting emptied due to the weight at the top. What Laozi wants to say here is that nothing should be taken to extremes or it will turn back, *fan*, to its original state, that is, causing the opposite effect (E. Slingerland, personal communication, November 28, 2015). For Laozi, it is a metaphysical law of the universe. This is illustrated by the design of the Yin and Yang symbol. When the white or the black part of Yin and Yang symbol reaches its maximum size, the opposite color starts to emerge. Similar to the notion of *dukkha* in Buddhism, it is actually a negative view of life, a never-ending suffering. Pursuing too much happiness, will bring sadness, too much strength, weakness.

Daniel Wegner (2003) did a lot of work on what he called the ironic effect of conscious efforts. His work showed that when one tries to suppress a thought, it gets amplified, someone trying to be relaxed gets anxious, someone with the strong desire to be happy, may get depressed. This shows that instructing someone not to do something behaviorally seems often the best way to have this person do it. Victor Frankl (1975) used

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

this to develop what he called *paradoxical intention therapy*, for instance, asking insomniac patients to stay awake to fall asleep more easily.

This example also demonstrates that the more one tries to reach something, the more one is likely to fail. The conscious pursuit of a goal often leads to missing that goal and it is what the Daodejing refers to as the quests of opposites. To be more specific, in any dyad, Laozi wants one to pursue the part one does not want: choose weakness rather than strength, darkness over brightness. This is what the *dao* values and one needs to follow it rather than people's advice. Being in harmony with the *dao* is Laozi's soteriological strategy and this means also that one should value what is not valued by society to get what one needs (E. Slingerland, personal communication, November 28, 2015). In the context of the Warring State, Laozi sent a strong message to Confucius by saying that seeking too much moral virtue will generate vices.

Downregulation of the prefrontal cortex

The state of *wu-wei* is for Laozi the most accomplished. Though he does not explain explicitly how to reach it, he refers to a number of practices, as in Chapter 10 of the Daodejing. Similar to the notion of *koan* in Buddhism, Laozi talks about paradoxical situations or statements. Creating confusion aims at breaking down people's rational thinking and brings them back to their real nature. Physical practices concentrating on one's breath, *qi*, are also mentioned with analogies to the empty mirror, as in Buddhism. This type of practice looks much like what today is called meditation.

The state that Laozi wants one to enter into is similar to what cognitive neuroscientist Arne Dietrich (2003) referred to as transient hypofrontality, that is, the downregulation of our prefrontal cortex. His work on the physiology of athletes being in the zone, that is, in *wu-wei*, showed that due to the intensity of the exercise, the body lacks energy and makes allocation decision. The prefrontal cortex, the energy intensive seat of the cognitive control of decisions, of our consciousness and emotions, of little use in that context, is literally shut down for a while. As Edward Slingerland (personal communication, November 28, 2015) highlighted, being in such a state gives a sense of peacefulness, of living in the present, of flow, of oneness with nature and the universe. Interestingly, Laozi uses the metaphor of getting back to one's child mind when talking about *wu-wei*, to get back to naturalness or *ziran*. The following passage of Chapter 25 of the Daodejing illustrates the importance of this notion:

People model themselves on the earth.
The earth models itself on Heaven.
Heaven models itself on the way
The way models itself on what is natural.

(Waley, 2012, p. 51)

The prefrontal cortex only develops around the age of 18 or 20; therefore, this makes perfect sense from a contemporary perspective. Reaching this state allows one to be more authentic, spontaneous. For Laozi, the ruler needs to embrace this naturalness. This element and practice is certainly the most widely observable across the participants in this study. How often it is practiced, how it is practiced, and with what depth depends probably on personal needs.

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

Categorical rigidity

Zhuangzi was very concerned by the risk presented by language and the derived tendency to socially learn representations of objects. This phenomenon is best illustrated by the example of damaged gourds, which could not be used for their original intent and were therefore considered useless, without thinking about what else they could be used for, for example, building a raft (Hall, 1984). This categorical inflexibility hinders what is often referred to as “divergent creativity” (Slingerland, 2014, p. 146). Zhuangzi wants to show when talking about this example, or when describing the story of the monkey, or the one of the mirror which reflects whatever is in front of it, that one can help others react properly to the world when being flexible. Not interposing preconceived ideas built from past experiences gives clarity. For Zhuangzi, this degree of emptiness makes us more receptive (E. Slingerland, personal communication, November 28, 2015).

This human limitation has now been proven scientifically, for instance, by the unusual alternative task developed by Guilford (Bonk, 2003), where people are asked to come up with as many possible uses of an object within a given period of time. Young children are the best at this test and this is due to the fact that their prefrontal cortex is not yet developed. This is our prefrontal cortex, which imposes this rigidity on us. It is then not surprising that the business leader described in Example 3 is taking all key decisions through meditation, one way to downregulate the prefrontal cortex.

This list is far from being exhaustive but illustrates that modern science experiments support many assumptions and principles established by ancient Chinese wisdom traditions. In fact, in many respects, they appear to be more plausible, a better fit for human nature than a number of foundational elements that drive today’s Western society.

TAOISM AND BIODIVERSITY

I would like to end this paper by sharing an example on how Taoist thinking can support bio-diversity, another important element for making our world more sustainable. In the early 1990s, Chinese Taoists started to regain access their temples and sacred mountains which had been confiscated under Chairman Mao’s era. In 1996, The Alliance for Religion and Conservation (ARC) initiated a conservation and biodiversity study on the five Chinese sacred mountains. Flora, fauna, culture, landscape and religion was mapped out by experts for each defined mountain area. Two years later, ARC was able to conclude that the land managed by Taoists had a healthier diversity than other lands (Stikker, 2014).

These results are the outcome of a non-anthropocentric and systemic worldview. The Taoist philosophy states that “nature is the fundamental principle all human behavior should be based on” (Stikker, 2014, p.97). The principles of compassion, moderation and humility apply not only among humans but between humans and nature. For instance, no animal should be killed without a good reason. Endangered species cannot be used for

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

traditional Chinese medicine, a medicine originally developed by Taoists, because it would backfire on humans.

Conclusion

Since the feudal time under the Zhou dynasty, China has been influenced by several value systems, each of them carrying its own worldview. Among those, Taoism has played a major role throughout Chinese history, though it has lost importance in recent past. In its quest to modernity, China seems to have embraced many of the western “ideals” such as innovation defined by the search of truth and a sense of cause and effects rather than being guided by virtue and a higher sense of synchronicity (Wilhelm, 2011), by a compartmental thinking rather than its traditional system thinking as expressed in Taoism. Yet this western ideal is showing its limits in China and across the world.

As this paper tried to illustrate by looking through the research of Clare Graves and more recent western neuro and social science research, Taoism seems to offer a very interesting development alternative to create a meaning making world *Zhongguo meng*, a super ordinate goal that can inspire not only China but the entire world to sustain all living species, to benefit without creating harm. The bio-diversity project described in this paper is a concrete and inspirational experiment of a day-to-day application of this thinking.

For that to happen, the world needs to stay open to ideas from all other the planet. In China, Taoism will need to overcome these adages that every Chinese is a Taoist when failing (Nisbett, 2010) or Confucian-by-day-Taoist-at-night (Kleinman, Yan, Jun, Lee, & Zhang, 2011). This ISSS conference is a great opportunity for these ideas to be explored, for these bridges across worldviews, across East and West to be made to help create a more sustainable world.

TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

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TAOISM: FOR A MORE SUSTAINABLE GLOBAL ECO-SYSTEM

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