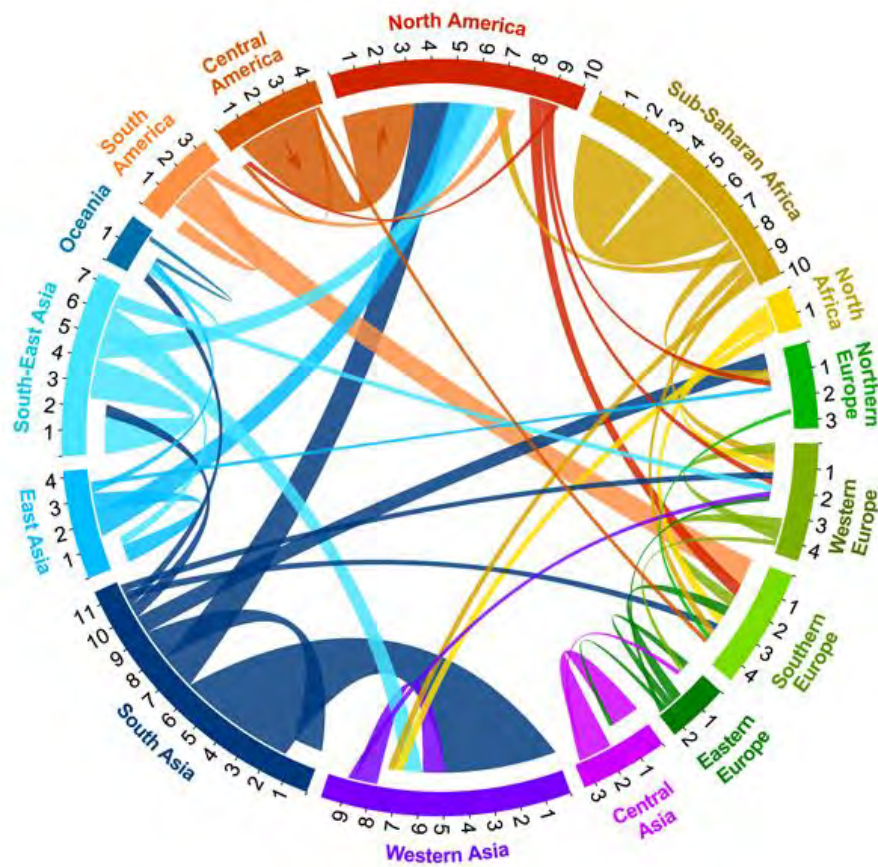


# COMPLEXITY AND INTERCONNECTION



# Complexity and Interconnection

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# COMPLEXITY AND INTERCONNECTION



## Caveat

*This essay is an attempt to make sense of disparate philosophies, texts, concepts and human conquests. It is a patchwork of very diverse sources, and I am not sure that it is worth much.*

*It is above all personal, the current milestone towards an endless exploration of our complex identity and connection to the social structures.*

*Those who know me will recognize the provocateur –at times brutal, biased, intolerant and partial. These are words –not admonitions, wise admonitions, or guidelines. They are perishable, within seconds.*

*As most kin, I am not rational; emotions, feelings are often overwhelming. My sense of justice, the respect of each one, ethics may be swept aside by anger, whim or vagary.*

*Just quit when you are annoyed, weary, or simply bored.*

## By Way of Introduction

After escaping “by the skin of my teeth” the gas chambers and crematorium of the Final Solution in December 1942, I spent two very long years in a series of refugee camps built hastily by the Swiss in abandoned sanatoriums, dilapidated hotels; or working summers in farms for food and shelter. In the camps, I was always hungry. But we survived, watching others die from malnutrition, chronic severe stress, flaring tuberculosis, typhus or suicide on the electrified barbed wired fence.

I was told, at the blooming age of eight, that it was due to religion: my grandparents [who did not escape the above-mentioned “Final” one] were born in the “*wrong*” one. But then why us? Why children? Why treat us worse than pigs? Why submit us to the might and absolute power of anonymous Swiss military or bureaucrats? “*They saved our lives*”; barely. After their dogs, fowl, cattle, pigs; these were fed better.

Then we came back to France, which, magically on August 25<sup>th</sup>, 1944, was changed from a racist, foremost accomplice of the Nazis, country into a self-liberating

## COMPLEXITY AND INTERCONNECTION



democratic, Allied one. Charles de Gaulle, better than changing water into wine, accomplished this miracle. Smoke and mirrors as expected.

I encountered the sad, true, vicious reality plus the educational system codified by Jules Ferry to manufacture cannon fodder for his (and followers') colonial wars of the 19th & 20th century. Rigid programs directly inspired by the centuries of catechism and Catholic fundamentalism; soon after this appetizer, the Lycée Henri IV offered the full menu, concocted in 1802, unchanged. But I was a glutton reader, surrounded by sons of partisans, communists, or anarchists. We shared our thoughts, our books, our dreams, our hopes. We discovered "*What is Property?*" by Pierre-Joseph Proudhon who defined anarchy as "*the absence of a master, of a sovereign*"; he was a pacifist –for us after the millions massacred a few months earlier. Mikhail Bakunin said that Proudhon was the first person to claim to be an anarchist. But, for me, his motto was a revelation: "*Ni Dieu, Ni Maître*" [No gods, No masters]. I was 13. It was mine; it still is.

What the experience of WWII taught me is that the "*Brain Empathy Gap*", as described by Emile Bruneau of MIT, is still universal and courted by political pimps and priests of all denominations. Faith must reign supreme. Hence belief in perpetuity; what was "*true*" a generation ago remains true... forever.

As a correlate this means the negation of time; hence the negation of life, its rhythms, its evolution, and eventual end – or revival.

It also means the negation of freedom, of hazard, of chance, of Einstein's "*dice*". The perpetuation of authority [*"the elders always know better"*], most of it self-proclaimed or "democracy". Keep in mind that the "rule of the people" (δημοκρατία: etymology of democracy) belonged in 500 BCE Athens' to ~30,000-60,000 citizens only, out of a population of ~200,000-400,000 residents. The people were few and imposed their views and laws to most. This is truer today than then.

We need to re-read Jonathan Swift, and George Orwell's *Animal Farm* and 1984.

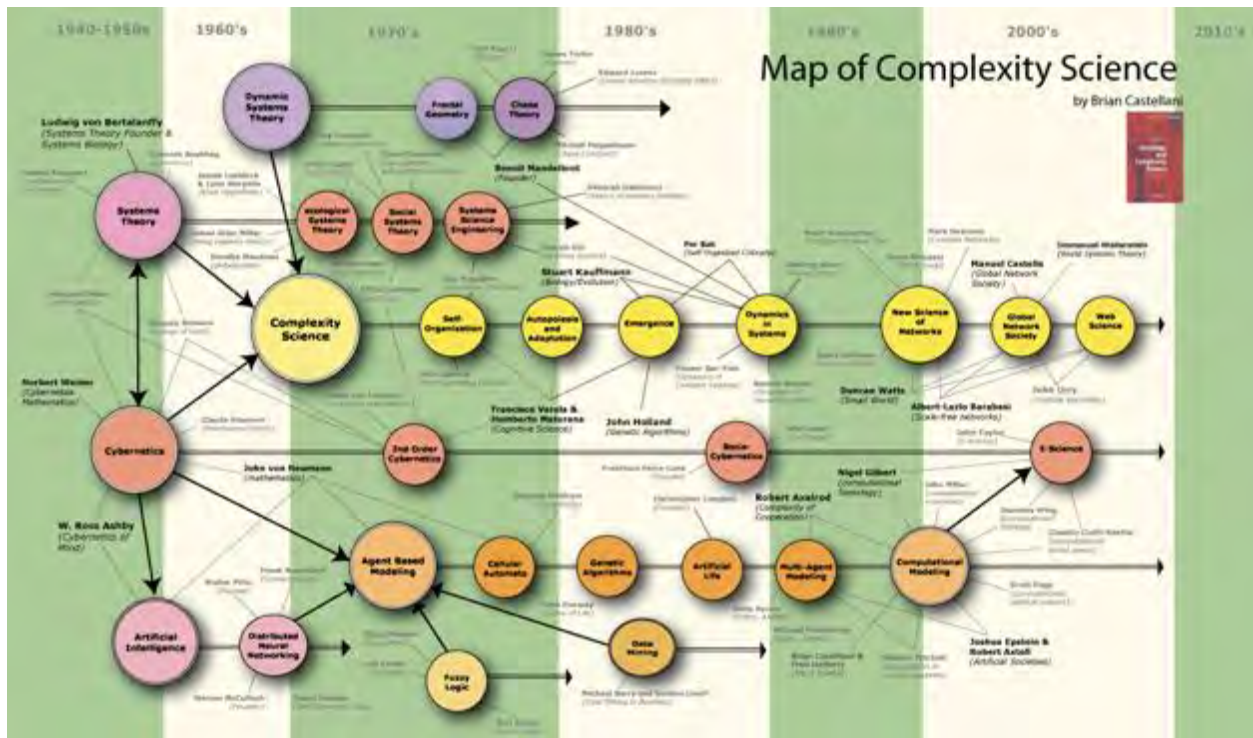
As a rabid survivor, I have for seven decades swallowed my pride and too many bitter pills; almost no one would be interested, even listen. The intricacy and intertwining of the mind and the body had always been obvious to the layman, but the scholars could not/cannot endorse or teach it: it would ruin their edifice and blow up their reputation. Fortunately, the progress of science proved it. Genes and epigenes

# COMPLEXITY AND INTERCONNECTION



control and are controlled by both body and mind.

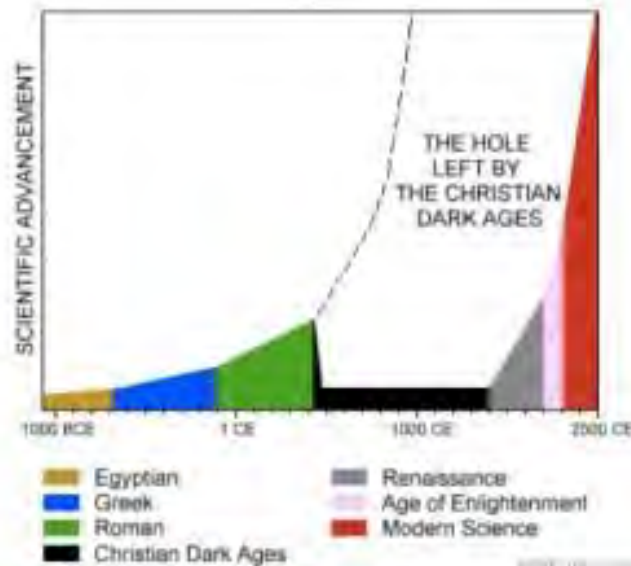
But that's not all. It gets more diverse, richer; in a word, more **complex**.



Science as we live it, explore and develop it, admire it and depend upon is a Western creation. It started long ago and developed its philosophy and basic rules around the Mediterranean basin, with increased Eastern influences from China and India via the Arab invasions.

Then the curtain fell on science with Christianity: it contradicted the Scriptures. The thirst for knowledge was (almost) eradicated for over a millennium.

# COMPLEXITY AND INTERCONNECTION



During these dark ages, China progressed steadily – until the end of the Ming Dynasty in 1644 CE.

This catastrophe in China coincided with the influence of Francis Bacon (1561-1626) who founded the principles of modern science. For his biographer William Hepworth Dixon, Bacon's influence in modern world is so great that *"every man who rides in a train, sends a telegram, follows a steam plough, sits in an easy chair, crosses the channel or the Atlantic, eats a good dinner, enjoys a beautiful garden, or undergoes a painless surgical operation, owes him something"*.

He inspired the positive transition from the *Rinascimento* to the Enlightenment.

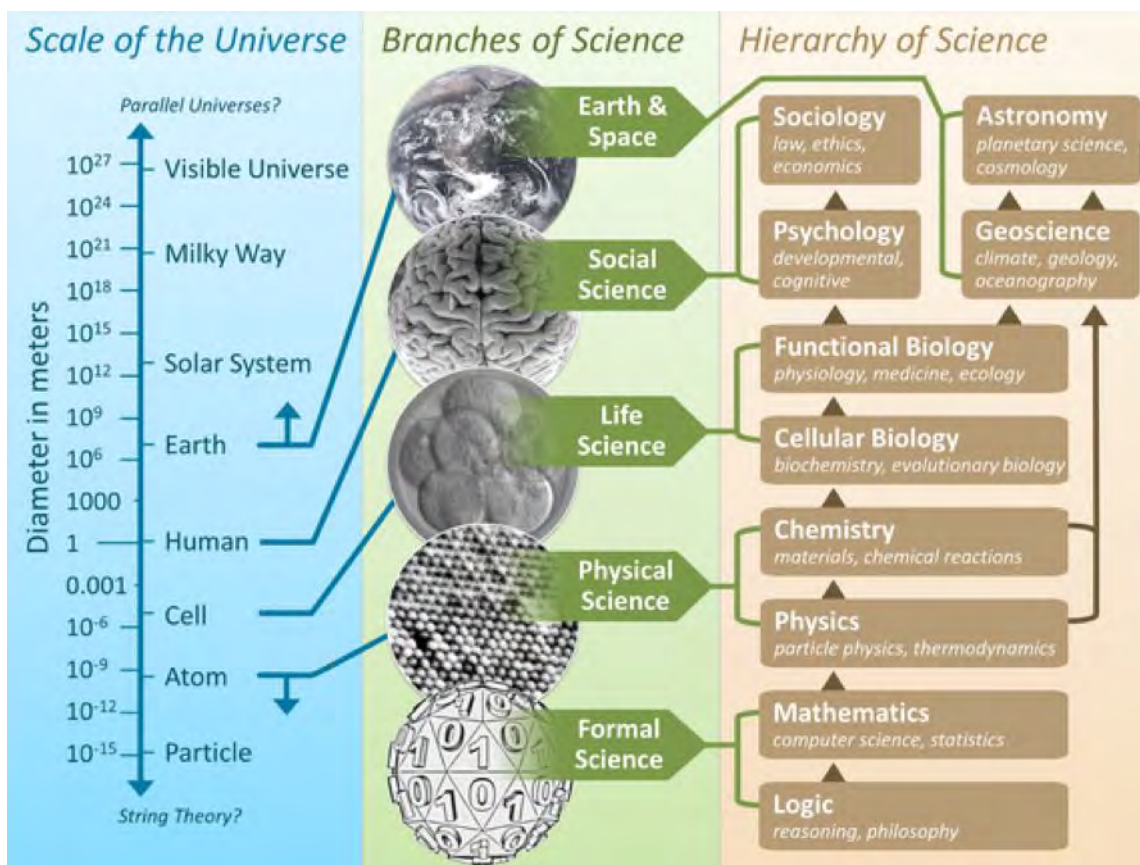
*"If a man will begin with certainties, he shall end in doubts; but if he will be content to begin with doubts, he shall end in certainties."* —Francis Bacon (1605) *The Advancement of Learning*, Book 1, v, 8

However, science is not faith; it is doubt, questioning more. It has no dogma, just tools and methods. No theory is ever considered strictly certain as science accepts the concept of fallibility. Karl Popper sharply distinguishes truth from certainty. He writes that scientific knowledge *"consists in the search for truth"*, but it *"is not the search for certainty ... All human knowledge is fallible and therefore uncertain."*

# COMPLEXITY AND INTERCONNECTION



Despite or because of this methodology the progresses and conquests of science have been immense. Our planetary world (the Earth) has been changed in too many ways to be cited. Our exploration of the universe –now multiverse- is beyond belief. The internal structures of the atom, and their interactions [see Quantum Biology] offer new and changing paradigms. In Biology and Medicine, we live in what authors of science-fiction did not even imagine.



To cite just one example: in 2010, Dr. Siddhartha Mukherjee published *The Emperor of All Maladies: A Biography of Cancer* which won the 2011 Pulitzer Prize for General Nonfiction. On March 30, 2015, a series based on this book –and coproduced by S. Mukherjee- was aired on PBS; the changes in our understanding of cancer, in the treatment approaches, in the mechanisms of (inter)action and consequences, the social impacts, etc. –all these are already different by many orders of magnitude when compared to 2010. And the gap will grow.

# COMPLEXITY AND INTERCONNECTION



We owe this and almost everything to science.

But if science offers the method and the tools, it still does not answer all the questions that humans ask; about their identity, their complex nature, the social structures they have built and which they inhabit. The guts and brainy questions.

But is there a method? Is there a solution? Is there just hope?

Let us start *circa* 2,700 years ago...

Laozi 老子



## Daoism & Anarchism

Most powers are oppressive. They are imposed. Most human structured societies depend on *law* and *order*, submission, obedience, servitude. Creation must serve and be scrutinized; moral order is the rule; heretics are banned, imprisoned, burned as witches, slaughtered. Protesting is feared to open the gates to anarchy. Despots, tyrants, the “*haves*” hate anarchists and anarchism.

Anarchism is usually considered a recent, Western phenomenon, but its roots reach deep in the ancient civilizations of the East. The first clear expression of an anarchist sensibility may be traced back to the Daoists in ancient China from about the sixth century BCE. Indeed, the principal Daoist work, *Daodejing*, may be considered one of the greatest anarchist classics.

The Daoists at the time were living in a feudal society in which law was becoming codified and government increasingly centralized and bureaucratic. Confucius

## COMPLEXITY AND INTERCONNECTION



believed in the old order with ritual and that man is inherently good, so that cultivation of self in law and order in the family will result in order of society according to the rituals. The Daoists for their part rejected government and believed that all could live in natural and spontaneous harmony. The conflict between those who wish to interfere and those who believe that things flourish best when left alone has continued ever since.

The Daoists and the Confucians were both embedded in ancient Chinese culture. They shared a similar view of nature but differed strongly in their moral and political views. They both had an attitude of respectful trust to human nature; the Christian notion of original sin is entirely absent from their thought. Both believed that human beings have an innate predisposition to goodness which is revealed in the instinctive reaction of anyone who sees a child falling into a well. Both claimed to defend the Dao or the way of the ancients and sought to establish voluntary order.

But whereas the Daoists were principally interested in nature and identified with it, the Confucians were more worldly-minded and concerned with reforming society. The Confucians celebrated traditionally 'male' (*yang*) virtues like duty, discipline and obedience, while the Daoists promoted the 'female' (*yin*) values of receptivity and passivity.

Although it has helped shape Chinese culture as much as Buddhism and Confucianism, Daoism by its very nature never became an official cult. It has remained a permanent strain in Chinese thought. Its roots lay in the popular culture at the dawn of Chinese civilization, but it emerged in the sixth century BCE as a remarkable combination of philosophy, religion, proto-science and magic.

The principal exponent of Daoism is taken to be Laozi, meaning '*old Philosopher*'. He was born around 604 BCE of a noble family in Honan province. He rejected his hereditary position as a noble and became a curator of the royal library at Loh. All his life he followed the path of silence: '*The Dao that can be told is not the eternal Dao*', he taught. According to legend, when he was riding off into the desert to die, he was persuaded by a gatekeeper in north-western China to write down his teaching for posterity.

It seems likely however that the *Daodejing* which is attributed to Laozi, was not written until the third century BCE. It has been called by the Chinese scholar Joseph



## COMPLEXITY AND INTERCONNECTION



Needham '*without exception the most profound and beautiful work in the Chinese language*'. The text consists of eighty-one short chapters in poetic form. Although often very obscure and paradoxical, it offers not only the earliest but also the most eloquent exposition of anarchist principles.

It is impossible to appreciate the ethics and politics of Daoism without an understanding of its philosophy of nature. The *Daodejing* celebrates the Dao, or way, of nature and describes how the wise person should follow it. The Daoist conception of nature is based on the ancient Chinese principles of yin and yang, two opposite but complementary forces in the cosmos which constitute *Qi* (matter-energy) of which all beings and phenomena are formed. Yin is the supreme feminine power, characterized by darkness, cold, and receptivity and associated with the moon; yang is the masculine counterpart of brightness, warmth, and activity, and is identified with the sun. Both forces are at work within men and women as well as in all things.

The Dao itself however cannot be defined. It is nameless and formless. Laozi, trying vainly to describe what is ineffable, likens it to an empty vessel, a river flowing home to the sea, and an uncarved block. '*The Dao, he asserts, follows what is natural. It is the way in which the universe works, the order of nature which gives all things their being and sustains them. The great Dao flows everywhere, both to the left and the right. The ten thousand things depend on it; it holds nothing back. It fulfils its purpose silently and makes no claim.*'

Needham describes it not so much as a force, but – already! – as a '*kind of natural curvature in time and space*'.

Like most later anarchists, the Daoists see the universe as being in a continuous state of flux. Reality is in a state of process; everything changes, nothing is constant. They also have a dialectical concept of change as a dynamic interplay as opposing forces. Energy flows continually between the poles of yin and yang. At the same time, they stress the unity and harmony of nature. Nature is self-sufficient and uncreated; there is no need to postulate a conscious creator. It is a view which not only recalls that of the Greek philosopher Heraclitus but coincides with the description of the universe presented by modern physics e.g. quantum physics. Modern social ecology, which stresses unity in diversity, organic growth and natural order, further reflects the Daoist worldview.

## COMPLEXITY AND INTERCONNECTION



The approach to nature recommended by Laozi and the Daoists is one of receptivity. Where the Confucian wants to conquer and exploit nature, the Daoist tries to contemplate and understand it. The Daoists' traditionally '*feminine*' approach to nature suggests that their way of thinking may well have first evolved in a matriarchal society. While at first sight it might seem a religious attitude, in fact it encouraged a scientific and democratic outlook amongst Daoists. By not imposing their own preconceptions, they could observe and understand nature and therefore learn to channel its energy beneficially.

The Daoists were primarily interested in nature but their conception of the universe had important corollaries for society. A definite system of ethics and politics emerges. There are no absolute Daoist values; for good and bad, like yin and yang, are related. Their interplay is necessary for growth, and to achieve something it is often best to start with its opposite. Nevertheless, an ideal of the wise person emerges in Daoist teaching who is unpretentious, sincere, spontaneous, generous and detached. For the Daoists, the art of living is to be found in simplicity, non-assertion and creative play.

Central to Taoist teaching is the concept of *wu-wei* (無爲). It is often translated as merely non-action. In fact, there are striking philological similarities between '*anarchism*' and '*wu-wei*'. Just as '*an-archos*' in Greek means absence of a ruler, *wu-wei* means lack of *wei*, where *wei* refers to '*artificial, contrived activity that interferes with natural and spontaneous development*'. From a political point of view, *wei* refers to the imposition of authority. To do something in accordance with *wu-wei* is therefore considered natural; it leads to natural and spontaneous order. It has nothing to do with all forms of imposed authority.

The *Daodejing* is quite clear about the nature of force. If we use force, whether physical or moral, to improve ourselves or the world, we simply waste energy and weaken ourselves: '*force is followed by loss of strength*'. It follows that those who wage war will suffer as a result: '*a violent man will die a violent death*'. By contrast, giving way is often the best way to overcome: '*Under heaven nothing is more soft and yielding than water. Yet for attacking the solid and strong, nothing is better; it has no equal. The weak can overcome the strong; the supple can overcome the stiff*'. The gentle peacefulness recommended by the Daoists is not a form of defeatist submission but a call for the creative and effective use of energy.

## COMPLEXITY AND INTERCONNECTION



*'Practice non-action. Work without doing'*, Laozi recommends. In their concept of *wu-wei*, the Daoists are not urging non-action in the sense of inertia, but rather condemning activity contrary to nature. It is not idleness that they praise, but work without effort, anxiety and complication, work which goes with and not against the grain of things. If people practiced *wu-wei* in the right spirit, work would lose its coercive aspect. It would be undertaken not for its useful results but for its intrinsic value. Instead of being avoided like the plague, work would be transformed into spontaneous and meaningful play: *'When actions are performed without unnecessary speech, People say, "We did it!"'*

If people followed their advice, the Daoists suggest, they would live a long life and *achieve physical and mental health. One of their fundamental beliefs was that 'whatever is contrary to Dao will not last long'*, while he who is filled with virtue is like a new-born child. To prolong their lives the Daoists resorted to yoga-like techniques and even alchemy.

The most important principle at the center of their teaching however was a belief that *'The world is ruled by letting things take their course. It cannot be ruled by interfering.'* The deepest roots of the Daoist view of *wu-wei* probably lies in early matriarchal society in ancient China. The Daoist ideal was a form of agrarian collectivism which sought to recapture the instinctive unity with nature which human beings had lost in developing an artificial and hierarchical culture. Peasants are naturally wise in many ways. By hard experience, they refrain from activity contrary to nature and realize that to grow plants they must understand and cooperate with the natural processes. And just as plants grow best when allowed to follow their natures, so human beings thrive when least interfered with. It was this insight which led the Daoists to reject all forms of imposed authority, government and the State. It also made them into precursors of modern anarchism and social ecology.

It has been argued that Daoism does not reject the State as an artificial structure, but rather sees it as a natural institution, analogous perhaps to the family. While the *Daodejing* undoubtedly rejects authoritarian rule, it does read at times as if it is giving advice to rulers to become better at ruling:

*'If the sage would guide the people, he must serve with humility.  
If he would lead them, he must follow behind.'*

## COMPLEXITY AND INTERCONNECTION



*In this way when the sage rules, the people will not feel oppressed'*

For some, Daoism was used by an elite to foster passivity amongst the peasantry by denying them choice and hope.

Certainly, Laozi addresses the problem of leadership and calls for the true sage to act with the people and not above them. The best ruler leaves his people alone to follow their peaceful and productive activities. He must trust their good faith for '*He who does not trust enough will not be trusted.*' If a ruler interferes with his people rather than letting them follow their own devices, then disorder will follow: '*When the country is confused and in chaos, Loyal ministers appear.*' In a well-ordered society,

*'Man follows the earth.  
Earth follows heaven.  
Heaven follows the Dao.  
Dao follows what is natural.'*

However, a closer reading shows that the *Daodejing* is not concerned with offering Machiavellian advice to rulers or even with the 'art of governing'. The person who genuinely understands the Dao and applies it to government reaches the inevitable conclusion that the best government does not govern at all. Laozi sees nothing but evil coming from government. Indeed, he offers what might be described as the first anarchist manifesto:

*'The more laws and restrictions there are,  
The poorer people become.  
The sharper men's weapons,  
The more trouble in the land.  
The more ingenious and clever men are,  
The more strange things happen.  
The more rules and regulations,  
The more thieves and robbers.  
Therefore, the sage says:  
I take no action and people are reformed.  
I enjoy peace and people become honest.*

## COMPLEXITY AND INTERCONNECTION



*I do nothing, and the people become rich.  
I have no desires and people return to the good and simple life'.*

Contained within the marvelous poetry of the *Daodejing*, there is some very real social criticism. It is sharply critical of the bureaucratic, warlike and commercial nature of the feudal order. Laozi specifically sees property as a form of robbery (think Proudhon!): *'When the court is arrayed in splendor, The fields are full of weeds, And the granaries are bare.'* He traces the causes of war to unequal distribution: *'Claim wealth and titles, and disaster will follow'*. Having attacked feudalism with its classes and private property, he offers the social ideal of a classless society without government and patriarchy in which people live simple and sincere lives in harmony with nature. It would be a decentralized society in which goods are produced and shared in common with the help of appropriate technology. The people would be strong but with no need to show their strength; wise, but with no presence of learning; productive, but engaged in no unnecessary toil. They would even prefer to reckon by knotting rope rather than by writing ledgers:

*'A small country has fewer people.  
Though there are machines that can work ten to a hundred  
times faster than man, they are not needed.  
The people take death seriously and do not travel far.  
Though they have boats and carriages, no one uses them.  
Though they have armour and weapons, no one displays them.  
Men return to the knotting of rope in place of writing.  
Their food is plain and good, their clothes fine but simple, their homes secure;  
They are happy in their ways.  
Though they live within sight of their neighbors,  
And crowing cocks and barking dogs are heard across the way,  
Yet they leave each other in peace while they grow old and die.'*

The anarchistic tendency of the Daoists comes through even stronger in the writings of the philosopher Chuang Tzu, who lived about 369-286 BCE. His work consists of arguments interspersed with anecdotes and parables which explore the nature of the

## COMPLEXITY AND INTERCONNECTION



Dao, the great organic process of which man is a part. It is not addressed to any specific ruler. Like the *Daodejing*, it rejects all forms of government and celebrates the free existence of the self-determining individual. The overriding tone of the work is to be found in a little parable about horses:

*'Horses live on dry land, eat grass and drink water. When pleased, they rub their necks together. When angry, they turn around and kick up their heels at each other. Thus far only do their natural dispositions carry them. But bridled and bitted, with a plate of metal on their foreheads, they learn to cast vicious looks, to turn the head to bite, to resist, to get the bit out of the mouth or the bridle into it. And thus, their natures become depraved.'*

As with horses, so it is with human beings. Left to themselves they live in natural harmony and spontaneous order. But when they are coerced and ruled, their natures become vicious. It follows that princes and rulers should not coerce their people into obeying artificial laws but should leave them to follow their natural dispositions. To attempt to govern people with manmade laws and regulations is absurd and impossible: *'as well try to wade through the sea, to hew a passage through a river, or make a mosquito fly away with a mountain!'* In reality, the natural conditions of our existence require no artificial aids. People left to themselves will follow peaceful and productive activities and live in harmony with each other and nature.

In an essay *'On Letting Alone'*, Chuang Tzu asserted three hundred years before Christianity the fundamental proposition of anarchist thought which has reverberated through history ever since:

*'There has been such a thing as letting mankind alone; there has never been such a thing as governing mankind. Letting alone springs from fear lest men's natural dispositions be perverted, and their virtue left aside. But if their natural dispositions be not perverted nor their virtue laid aside, what room is there left for government?'*

The Daoists therefore advocated a free society, without government in which individuals would be left to themselves. But while pursuing their own interests, they would not forget the interests of others. It is not a sullen selfishness which is recommended. The pursuit of personal good involves a concern for the general well-being: the more a person does for others, the more he has; the more he gives to others, the greater his abundance. As the Daoist text *Huai Nan Tzu* put it, *'Possessing*

## COMPLEXITY AND INTERCONNECTION



*the empire' means 'self-realization. If I realize myself then the empire also realizes me. If the empire and I realize each other, then we will always possess each other.'*

Human beings are ultimately individuals, but they are also social beings, part of the whole. Anticipating the findings of modern ecology, the Daoists believed that the more individuality and diversity there is, the greater the overall harmony. The spontaneous order of society does not exclude conflict but involves a dynamic interplay of opposite forces. Thus, society is described by Chuang Tzu as an agreement of a certain number of families and individuals to abide by certain customs. *'Discordant elements unite to form a harmonious whole. Take away this unity and each has a separate individuality . . . A mountain is high because of its individual particles. A river is large because of its individual drops. And he is a just man who regards all parts from the point of view of the whole.'*

Daoism thus offered the first and one of the most persuasive expressions of anarchist thinking. Its moral and political ideas were firmly grounded in a scientific view of the world. Although Daoist philosophy (*Dao chia*) contains spiritual and mystical elements, the early Daoists' receptive approach to nature encouraged a scientific attitude and democratic feelings. They recognized the unity in the diversity in nature and the universality of transformation. In their ethics, they encouraged spontaneous behavior and self-development in the larger context of nature: production with possession, action without self-assertion and development without domination. In their politics, they not only urged rulers to leave their subjects alone and opposed the bureaucratic and legalistic teaching of the Confucians but advocated as an ideal a free and co-operative society without government in harmony with nature.

Daoism was not aimed by an elite at peasants to make them more docile and obedient. The Daoists social background tended to be from the small middle class, between the feudal lords and the mass of peasant farmers. Nor were they merely offering advice on how to survive in troubled times by yielding to the strong, keeping a low profile, and by minding their own business. On the contrary, Daoism was the philosophy of those who had understood the real nature of temporal power, wealth and status, sufficiently well to find them radically wanting. Far from being a philosophy of failure or quietude, Daoism offers profound and practical wisdom for those who wish to develop the full harmony of their being.

## COMPLEXITY AND INTERCONNECTION



Mark Gillespie summed it up in *Taoism and Anarchy*:

*'Anarchy and Daoism share a central premise. This premise is that only natural, uncoerced and voluntary action is acceptable. Both Anarchy and Daoism realize that any restriction to this process creates the seeds for disorder and chaos. Anarchists struggle every day against the idea that "Might makes Right." Whenever force is involved, that force carries with it the seeds of its own destruction.'*

The Dao says about this subject:

*"Weapons are meant for destruction, and thus are avoided by the wise. Only as a last resort will a wise person use a deadly weapon. If peace is the true objective how can one rejoice in the victory of war? Those who rejoice in victory take pleasure in murder. Those who resort to violence will never bring peace to the world".*

The second premise is that everyone has a right to defend their ability to live. Daoism equates natural and voluntary action with the best life. One has life, only to the degree that they may freely **act**. Putting liberty and life together has been a cornerstone of "liberationists" of every stripe. One is only alive when one is free.

The Dao says: *"The more prohibitions there are, the poorer everyone will be. The more weapons are used, the greater the chaos will be in society. The more that people seek "knowledge" for its own sake, the stranger the world will become. The more laws that are made, the greater the number of criminals."*

It also gives us the cure for all of these ailments in the next verse: *"Therefore the wise*



## COMPLEXITY AND INTERCONNECTION



*person says: I do nothing, and people become good by themselves. I seek peace, and people take care of their own problems. I do not meddle in their personal lives, and the people become prosperous. I let go of all my desire to control them, and the people return to their natural ways.”*

The Daodejing is very much based in observable reality, and Laozi observed his society and noticed different things that caused troubles. He mentioned that:

*“The highest good is not to seek to do good, but to allow yourself to become good. The ordinary person seeks to do good things and finds that they cannot do them continually, and thus is able to accomplish their task. The ordinary person who uses force, will find that they accomplish nothing. The kind person acts from the heart and accomplishes a multitude of things. The righteous person acts out of pity, yet leaves many things undone. The moral person will act out of duty, and when no one will respond will roll up his sleeves and uses force. When people cease acting in a natural way, they create “righteousness.” When righteousness is forgotten, they create morality. When morality is forgotten, they create laws. The law is the husk of faith, and trust is the beginning of chaos. Our basic understandings are not from the Natural Way of Life because they come from the depths of our misunderstanding that way. The wise person abides in the fruit and not in the husk. They live in a natural way, and not behind the things that hide it. This is how one becomes wiser.”*

This is the third premise that Daoism and Anarchism share. The premise that all of the states’ constructs are shoddy replacements for what would occur if we were free to act. We cannot be charitable when the state takes our “surplus.” We cannot share when the state steals from us to give to someone else. We cannot be peaceable when the state prevents us from protecting our own lives. We cannot learn how to interact with each other when the “law” gets in the way. In short, the state and any other force wielding organization cannot deliver what they promise. This much should be obvious to all. We can be more generous, sharing, and caring by being allowed to do so. Until everyone realizes that, we will never have the prosperity, peace and freedom that we could have.

However, we cannot and should not reduce Daoism to a simple precursor of Anarchy. The Daodejing is much, much more. It is radically nondualist, since it insists on the unique particularity or difference and the interdependence of things. This dynamic non-dualism is a wider feature of Chinese thinking, as one can see with the word *xin*

## COMPLEXITY AND INTERCONNECTION



心. Xin is usually translated as heart and/or mind but should be as thinking and/or feeling. This text also realizes the aesthetic harmony, balance, and need to keep the center precisely in embracing the transformation and change, the fluidity and flow, of this world. One is thus centered in being decentered and spontaneous in being receptive and yielding.

Daoism embraces the mutuality of opposites. It speaks through saying and unsaying, affirming and denying, to evoke the nameless (*wuming* 無名), the namelessness that is the “*fetal beginning*”.

Laozi’s Daoism is a provocative philosophical way of thinking, since it presents us with a form of nonreductive naturalism. It is nonreductive, since it embraces both the wholeness and singularity of nature. It is naturalistic, since (1) it does not devalue immanence and (2) it avoids and critiques the humanism (in its Confucian guise) which reduces the significance of things to human purposes and values. The Daodejing is anti-humanistic without being anti-human, since humans find their significance in relation to being underway themselves. The text also develops a critique of morality that is still in some sense ethical. Although intervention in the name of helping all things is rejected when it undermines the sage’s own course (*ziran* 自然), compassion is seen as the fruit of noncoercive activity.

Thus, the Dao reflects and illustrates the complexity of human nature, as well as human society; we are social animals. We depend on others.



# The Marquis de Sade and Anarchism

*“Are not laws dangerous which inhibit the passions? Compare the centuries of anarchy with those of the strongest legalism in any country you like, and you will see that it is only when the laws are silent that the greatest actions appear.”* (Marquis de Sade)

Donatien Alphonse François, Marquis de Sade, was born on 2 June 1740 in the Hôtel de Condé, Paris, to Jean Baptiste François Joseph, Count de Sade and Marie Eléonore de Maillé de Carman, cousin and Lady-in-waiting to the Princess of Condé. He was educated by an uncle, the Abbé de Sade. Later, he attended a Jesuit lycée, then pursued a military career, becoming Colonel of a Dragoon regiment, and fighting in the Seven Years’ War. In 1763, on returning from war, he courted a rich magistrate’s daughter, but her father rejected his suitorship and, instead, arranged a marriage with his elder daughter, Renée-Pélagie de Montreuil; that marriage produced two sons and a daughter. In 1766, he had a private theatre built in his castle, the Château de Lacoste, in Provence. In January 1767, his father died.



Sade, who died in 1814, was a revolutionary, politician, philosopher and writer, famous for his libertine sexuality. His works include novels, short stories, plays, dialogues and political tracts; in his lifetime, some were published under his own name, while others appeared anonymously, and Sade denied being their author. He is best known for his erotic works, which combined philosophical discourse with

## COMPLEXITY AND INTERCONNECTION



pornography, depicting sexual fantasies with an emphasis on violence, criminality and blasphemy against the Catholic Church. He was a proponent of extreme freedom, unrestrained by morality, religion or law. The words sadism and sadist are derived from his name.

Sade was incarcerated in various prisons and in an insane asylum for about 32 years of his life; 11 years in Paris (10 of which were spent in the Bastille), a month in the Conciergerie, two years in a fortress, a year in Madelonnettes, three years in Bicêtre, a year in Sainte-Pélagie and 13 years in the Charenton asylum. During the French Revolution he was an elected delegate to the National Convention. Many of his works were written in prison.

He was also a passionate gourmet, and especially loved baked apples and vanilla custards for dessert. He also fancied Provençal delicacies such as quail stuffed with grape leaves, very fresh cream of chard soups and chocolate cake. *“I wish for a chocolate cake so dense,”* he once wrote his wife from one of his stints in jail, *“that it is black, like the devil’s ass is blackened by smoke.”*

Sade, one of the few men in history whose names have spawned adjectives, was just as finicky about his clothes, and wrote his wife from jail that he wished for *“a little prune-colored coat, with suede vest and trousers, something fresh and light but specifically not made of linen.”* He was equally particular about matters of personal hygiene and liked to bathe every day — a habit totally foreign to his 18th century contemporaries, who might have bathed twice a month at the most. He loved dogs, he loved children as long as they abided by his orders and he delighted in family games such as blind man’s buff and musical chairs.

One of the most interesting and least-emphasized aspects of Sade’s character is his thorough dislike of his own peers and of the corrupt nobility of his time. Sade hated Paris, and Versailles even more; his eventual demise was in great part caused by the fact that he refused to pay court to the king, refused to network with his fellow nobles, refused to work the room in any aristocratic milieu whatsoever. And this haughty aloofness from circles of power, which he shared with his very rustic, reclusive wife, left him without any base of social support in those frequent cases when he got into trouble with the law.

He made all his friends, ironically, amid those very classes of society that were

## COMPLEXITY AND INTERCONNECTION



preparing the Revolution of 1789 — amid the lawyers, tradesmen and artisans of Provence, and also among the more liberal clergy. Sade's romantic attachment to his Provençal Chateau de La Coste was closely connected to this hatred for France's central government, and to his archaic political ideals. That ideology can only be described as a very bizarre blend of radical libertarianism and robber-baron elitism. He felt intense nostalgia for those anarchic eras of the early middle ages, before the rise of nation-states, when every warrior lord had total control over his vassals and was not constrained by the edicts of any other ruler.

So why bother with Sade at all? What is there to learn from this creep who makes us want to puke, who makes us want to take a shower every 10 minutes, and who above all often bores us into a stupor, this buffoon who, two centuries before Marcel Duchamp, Andy Warhol and Damien Hirst, pioneered the very notion of boredom as an aesthetic value? And what do we as readers do with the Marquis de Sade? How do we relate to these scatological fantasies of carnage, sperm and rape whose repugnance is far more conducive to chastity than to any libidinous behavior? (As Simone de Beauvoir put it, "*Sade's perverse bucolics have the grim austerity of a nudist colony.*")

The answer is that we're forced to deal with a man who's had a profound influence on artists such as Gustave Flaubert, Charles Baudelaire, Guillaume Apollinaire, Luis Buñuel and Octavio Paz. Moreover, the interface between morality, literature and censorship lies at the heart of the question, "*What do we do with Sade?*" Gruesome deeds have been depicted with relish by many classic authors, from Sophocles to William Faulkner, and if we're going to judge literary works by their harvest of bloodshed, we might consider burning the Koran and the Bible (for example, *the Book of Judges*, Chapter 20, in which a Levite carves up his unfaithful concubine into 12 parts and sends one section of a limb to each tribe of Israel.)

Moreover, for true modernists who look on art as an irritant, a stimulant and a problem rather than a balm, who read for ideas rather than pleasure, Sade might be worth studying, if only as a historical curiosity, because he expressed several notions that were quite novel to Western thought. Beyond advancing the most extremist doctrine of individual liberty ever set forth, he proposed a revolutionary view of the human psyche. He broke with his contemporaries, who had limited their scrutiny to the surface of observed behavior, and explored those more hidden inclinations,

## COMPLEXITY AND INTERCONNECTION



which we now call the subconscious. Deriding the Enlightenment's Pollyanna-ish pieties concerning natural goodness, he emphasized the grim ambivalence of erotic and destructive impulses, of love and hate, that color most human attachments. A century before Freud, he saw that the manner in which these conflicting drives were repressed or fulfilled might provide the master plan of every individual personality.

Sade's single most lucid 20th century commentator is possibly the British philosopher Stuart Hampshire. Hampshire sees him as a "*serious figure in the history of thought*" because he was the first to understand "*the non-logical, or contradictory, nature of men's original attachments,*" and because he dared to discard "*all civilized restraints*" in depicting a primeval stage of humanity not yet curbed by the most fundamental taboos.

Sade was equally prophetic in his highly androgynous views of the human libido. Few thinkers since Plato have more eloquently argued that heterosexual relations are not any more "*normal*" than homosexual ones. Not unlike advocates of contemporary "*queer theory,*" Sade championed a highly polymorphous view of erotic impulses in which heterosexuality was only one of many possible expressions of libidinal impulses, one fragment of the sexual spectrum available to human needs.

Another way the more adventurous reader might deal with Sade is to see him as the principal forerunner of modernism, a claim usually made for Nietzsche. He created a revolutionary and indeed sadistic new relationship between the reader and the author that forgoes the pleasure principle of traditional narrative and deals instead with insult, alienation and boredom. One of the most maddening and most modern — if not postmodern — aspects of Sade's writing is that he is programmed himself to foil most methods of decoding and typification. He never lets us know his true intent; there is no way of knowing whether he is writing on a level of subversive irony, whether he takes his wacky anarchist ideas seriously or whether they're incited by his buffoonish exhibitionism.

Sade is a modernist, or even a postmodernist, because he brutally abolishes the traditional pact of trust between reader and writer; because he cracks, through his excesses, any traditional critical grid through which we might evaluate him; because he forces us to play his own game, which works through principles of indeterminacy and sadomasochistic traumatization. Sade was perhaps the first to propose that the goal of art is not pleasure, but the investigation of all possible boundaries.

## COMPLEXITY AND INTERCONNECTION



About Anarchy (or Anarchism), best is to let Sade express himself.

By reading carefully *Juliette* or *La Philosophie dans le Boudoir* one can find some dissertations and dissertations that evoke anarchism. But specific texts, deliberately philosophical (and political) are more convincing. Hereunder are two examples –in his own words:

*(The following is a portion of a conversation between two Italians in Rome.)*

*“A. If we were convinced of the indifference of all our actions, if we realized that those we call just and unjust are seen quite differently by Nature, we would make less false calculations. But the prejudices of childhood deceive us and will continue to lead us into error as long as we have the weakness to listen to them. It would seem as though the torch of reason only lights us when we are no longer in a position to profit from its rays, and it is only after folly has succeeded folly that we manage to discover the source of all those that ignorance has made us commit. The laws of the land still almost always serve us as compass to distinguish the just from the unjust. We say such an action is forbidden by the law, therefore it is unjust; it is impossible to find a more mistaken manner of judging than this, for the law is founded on the general interest; now nothing is more in contradiction with the general interest than particular interest, and at the same time nothing is juster than the latter; therefore nothing is more unjust than the law which sacrifices all particular interests to general interests. But man, you object, wishes to live in society and therefore must sacrifice some portion of his private happiness to that of the public.*

*Agreed; but why do you want him to have made such a pact without being sure of gaining as much as he sacrifices? Now, he gains nothing from the pact he has made in consenting to the laws; for you inhibit him far more than you satisfy him, and for one occasion in which the law protects him, there are a thousand when it stands in his way; therefore either the laws should not be consented to or they should be made infinitely milder. The only use of law has been to postpone the annihilation of prejudices, to keep us longer under the shameful yoke of error; law is a restraint which man has placed on man, when he saw with what ease he broke all other restraints; how, after that, could he suppose the supplementary restraint could ever be of any use?*

*There are punishments for the guilty; agreed, but I only see in them cruelties and no means of making man better, and that is, to my mind, what one ought to work at.*

## COMPLEXITY AND INTERCONNECTION



*Besides one escapes these punishments with the greatest ease, and that certainty encourages the spirit of the man who has made up his mind. Let us convince ourselves once and for all that laws are merely useless and dangerous; their only object is to multiply crimes or to allow them to be committed with impunity on account of the secrecy they necessitate. Without laws and religions, it is impossible to imagine the degree of glory and grandeur human knowledge would have attained by now; the way these base restraints have retarded progress is unbelievable; and that is the sole service they have rendered to man. People have dared declaim against the passions and enchain them with laws.*

*But compare the one with the other; let us see whether passions or laws have done more good to mankind. Who can question the truth of Helvetius' remark that passions in the moral sphere correspond to movement in the physical? The invention and the marvels of the arts are only due to strong passions; they should be regarded, the same author continues, as the productive germ of the spirit, and the mighty spring of great actions. Individuals who are not animated by strong passions are merely mediocre beings. It is only strong passions which can produce great men; when one is no longer, or when one ceases to be passionate one becomes stupid. This point established, how dangerous are not laws which inhibit the passions? Compare the centuries of anarchy with those of the strongest legalism in any country you like, and you will see that it is only when the laws are silent that the greatest actions appear. If they regain their despotism a dangerous lethargy dulls all men's spirits; if you no longer see vices, you can hardly find a virtue; the springs get rusty and revolutions are prepared.*

*B. Then you would do away with laws?*

*A. Yes. I maintain that man, returned to a state of nature, would crimes."*

*(This theme is again developed at length in the last volume of Juliette by another "Italian" ...)*

*"Give man back to Nature, she will lead him far better than your laws. Above all destroy those vast cities, where the conglomeration of vices forces you to repressive laws. What need has man to live in society? Give him back to the wild forests where he was born and let him do there all that he can; then his crimes, as isolated as he, will do no harm and your restraints become useless: savage man knows only two needs: copulation and food -both natural, and nothing which he can do to obtain either can be criminal. All that produces in him other passions is the work of civilization and society "*



## COMPLEXITY AND INTERCONNECTION



Philosophy is at the heart of Sade's work. His major philosophical contribution is his continual reference to an englobing multiplicity that cannot be reduced to the sum of its englobed elements and where the difference and singularity of these englobed elements is protected. There is no distinction between theory and practice in Sade, like there is no distinction between body and mind.

Philosophy becomes a praxis that says everything and anything, but that also opposes prejudices, laws, and imagined beliefs that may limit the saying of this "everything." In this context, philosophy is still associated with a truth, a truth of the universe where chaos and anarchy prevail and where human laws and institutions are nothing but limited and limiting pockets.

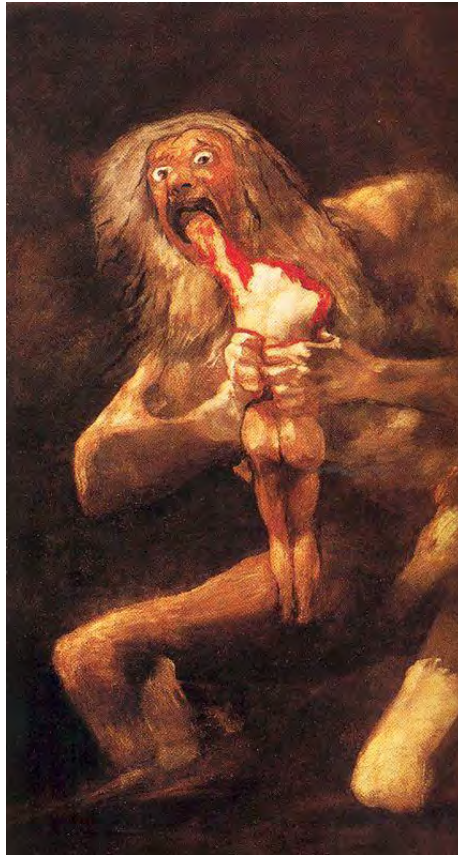
For Sade, it was a question of bringing the battle to the hypocrisy inherent in morality and of adding the liberation of individual impulses to the political and collective revolution of his era –which would be identical with the refusal of all violence against the people exercised by the State or religion.

Didn't Nietzsche need to read Sade to conclude that "*all the religions are, in the final analysis, systems of cruelty*" (*The Genealogy of Morals*)?



## A Short History of Time

*“Time is very slow for those who wait; very fast for those who are scared; very long for those who lament; very short for those who celebrate; but for those who love, time is eternal.” (William Shakespeare.)*



**Time** is a measure in which events can be ordered from the past through the present into the future, and also the measure of durations of events and the intervals between them. Time is often referred to as the **fourth dimension**, along with the spatial dimensions.

Sir Isaac Newton had a realist view of time, with events occurring in sequence, as part of the fundamental structure of the universe. Conversely Gottfried Leibniz and

## COMPLEXITY AND INTERCONNECTION



Immanuel Kant held that *time* is neither an event nor a thing, and thus is not itself measurable nor can it be travelled; space and time “*do not exist in and of themselves, but ... are the product of the way we represent things*”, because we can know objects only as they appear to us. Modern physicists generally believe that time is as *real* as space—though others, such as Julian Barbour in his book *The End of Time*, argue that quantum equations of the universe take their true form when expressed in the timeless realm containing every possible *now* or momentary configuration of the universe, called ‘*platonía*’ by Barbour.

Until Einstein’s profound reinterpretation of the physical concepts associated with time and space, time was considered to be the same everywhere in the universe, with all observers measuring the same time interval for any event. Non-relativistic classical mechanics is based on this Newtonian idea of time.

Einstein, in his special theory of relativity, postulated the constancy and finiteness of the speed of light for all observers. He showed that this postulate, together with a reasonable definition for what it means for two events to be simultaneous, requires that distances appear compressed and time intervals appear lengthened for events associated with objects in motion relative to an inertial observer.

The theory of special relativity finds a convenient formulation in Minkowski spacetime, a mathematical structure that combines three dimensions of space with a single dimension of time. In this formalism, distances in space can be measured by how long light takes to travel that distance, e.g. a light-year is a measure of distance, and a meter is now defined in terms of how far light travels in a certain amount of time. Two events in Minkowski spacetime are separated by an *invariant interval*, which can be either space-like, light-like, or time-like. Events that are time-like cannot be simultaneous in any frame of reference, there must be a temporal component (and possibly a spatial one) to their separation. Events that are space-like could be simultaneous in some frame of reference, and there is no frame of reference in which they do not have a spatial separation. People travelling at different velocities between two events measure different spatial and temporal separations between the events, but the *invariant interval* is constant and independent of velocity.

The brain’s judgment of time is known to be a highly distributed system, including at least the cerebral cortex, cerebellum and basal ganglia as its components. One

# COMPLEXITY AND INTERCONNECTION



particular component, the suprachiasmatic nuclei, is responsible for the circadian (or daily) rhythm, while other cell clusters appear capable of shorter-range (ultradian) timekeeping.

Psychoactive drugs can impair the judgment of time. Stimulants can lead both humans and rats to overestimate time intervals, while depressants can have the opposite effect. The level of activity in the brain of neurotransmitters such as norepinephrine and dopamine may be the reason for this. Such chemicals will either excite or inhibit the firing of neurons in the brain, with a greater firing rate allowing the brain to register the occurrence of more events within a given interval (speed up time) and a decreased firing rate reducing the brain's capacity to distinguish events occurring within a given interval (slow down time).

Mental chronometry is the use of response time in perceptual-motor tasks to infer the content, duration, and temporal sequencing of cognitive operations.

## The Wheel of Time

Light from the sun sustains life on earth. The 24-h rotation of the earth exposes a vast number of plants and animals to the light/dark cycle. Consequently, the behavior and physiology of numerous living organisms exhibit circadian rhythms. The word "*circadian*" is derived from Latin *circa diem*, which means "*about a day*." Behavioral rhythms such as sleeping, food seeking, and predator avoidance are thought to help animals survive. Physiological rhythms such as body temperature, blood pressure, and metabolism also anticipate and adapt to predictable changes in the environment to maintain the overall well-being of animals. Circadian rhythms are controlled by evolutionarily conserved internal clocks residing in most tissues of the body. The central clock is located in the suprachiasmatic nucleus (SCN) of the hypothalamus and is entrained directly by light. This master pacemaker can synchronize circadian oscillators in peripheral tissues, yet underlying neural and humoral mechanisms remain obscure. Besides light, other external cues such as feeding and ambient temperature are also powerful Zeitgebers (from German for time givers) for peripheral clocks. How these time cues act in concert to entrain tissue-specific

## COMPLEXITY AND INTERCONNECTION



oscillators and evoke diverse physiological responses is poorly understood. Nevertheless, these processes clearly involve the endocrine system.

The rhythmic production and circulation of many hormones and metabolites within the endocrine system is instrumental in regulating regular physiological processes such as reproduction, blood pressure, and metabolism. A broad range of metabolites—such as glucose, free fatty acids, cholesterol, and bile acids—also exhibit diurnal fluctuation. Several hormones and metabolites serve as ligands for nuclear receptors that direct a large array of transcriptional programs involved in lipid and carbohydrate metabolism. Together, these observations suggest a complex interaction between the circadian clock and nuclear receptor signaling. Several recent studies lend further insight into an elaborate “*wheel of time*” composed of molecular clocks and nuclear receptors, which together help shape an emerging perspective on “*design principles*” and biological implications of the clock–receptor signaling network.

Peripheral clocks appear to act as the integrators of signals from the light-sensing central clock and other physiological cues. The nature of the signals that entrain peripheral clocks in individual tissues remains obscure. Serving as endocrine and metabolic sensors, several nuclear receptors have been implicated in clock entrainment.

Direct protein–protein interactions between clock components and nuclear receptors are emerging as a crucial mechanism for the working of the circadian clock. Virtually all physiological processes—such as growth and differentiation, immune responses, and reproduction—have intrinsic rhythms. The links between the circadian clock and rhythmic cellular and physiological processes are just beginning to be unveiled. A remarkable example is the discovery of the connection between the circadian clock and the cell cycle.

The immune system exhibits distinct diurnal features. Recent studies provide compelling evidence that these diurnal variations are ascribed to intrinsic clockworks in immune cells.

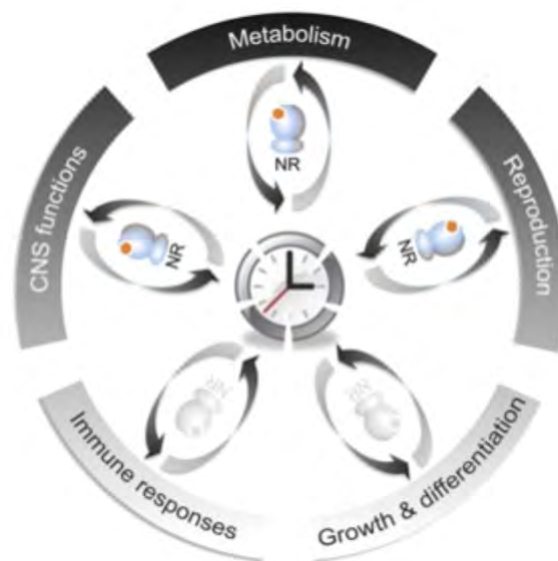
To date, the prevailing view of the circadian system is a hierarchical structure in which the light-sensing master pacemaker and other environmental cues synchronize numerous peripheral oscillators via the “*input*” pathways and,

# COMPLEXITY AND INTERCONNECTION



subsequently, drive rhythmic physiologic “*outputs.*” Much effort is focused on the identification of molecular components of the input and output pathways. However, as exemplified by the interactions between the circadian clock and nuclear receptors, feedback loops are pervasively present at the molecular, cellular, tissue, and systems levels. The boundary between the input and output pathways is dissolving. Thus, it is probably time to revisit the role of the circadian system in whole-body physiology. In addition to keeping internal physiology synchronized with the environment—predominantly the light/dark cycle—circadian clocks may serve at least two other ancient purposes: (1) to temporally separate chemically incompatible metabolic processes, such as anabolism and catabolism; and (2) to coordinate distinct physiological processes to maintain dynamic homeostasis. Evidence for these scenarios is emerging.

As illustrated in the figure below, it seems that connections between the circadian clock and most (if not all) physiological processes are bidirectional. Therefore, the circadian system might provide a potential means of communications between different physiological domains. In view of the dissolving boundary between different physiological processes, the circadian clock is probably not merely a timekeeper, but also a guardian of physiological homeostasis.





# Time and the Dao

“Time is a created thing. To say ‘I don’t have time,’ is like saying, ‘I don’t want to.’”  
(Laozi)

Time is implicit in the *Daodejing*. The term *Dao* means a road and is often translated as “the Way”. This is because sometimes *dao* is used as a nominative (that is, “*the dao*”) and other times as a verb (i.e. *daoing*). *Dao* is the process of reality itself, the way things come together, while still transforming. All this reflects the deep-seated Chinese belief that **change** is the most basic character of things. In the *I Ching* 易經 (*Classic of Changes*, or *Book of Changes*) the patterns of this change are symbolized by figures (the “*Ten Wings*”) standing for 64 relations of correlative forces and known as the hexagrams. *Dao* is the alteration of these forces, most often simply stated as yin and yang. The *Xici* is a commentary on the *I Ching* formed in about the same period as the *Daodejing*. It takes the *Taiji* 太極 (Great Ultimate) as the source of correlative change and associates it with the *dao*. The contrast is not between *what* things are or *that* something is or is not, but between Chaos (*Hundun* 混沌) and the way reality is ordering (*de*). Yet, reality is not ordering into one unified whole. It is the 10,000 things (*Wanwu* 萬物). There is the *dao* but not “*the World*” or “*the cosmos*” in a Western sense.

A central theme of the *Daodejing* is that correlatives are the expressions of the movement of *dao*. Correlatives in Chinese philosophy are not opposites, mutually excluding each other. They represent the ebb and flow of the forces of reality: *yin/yang*, male/female; excess/defect; leading/following; active/passive. As one approaches the fullness of *yin*, *yang* begins to horizon and emerge.

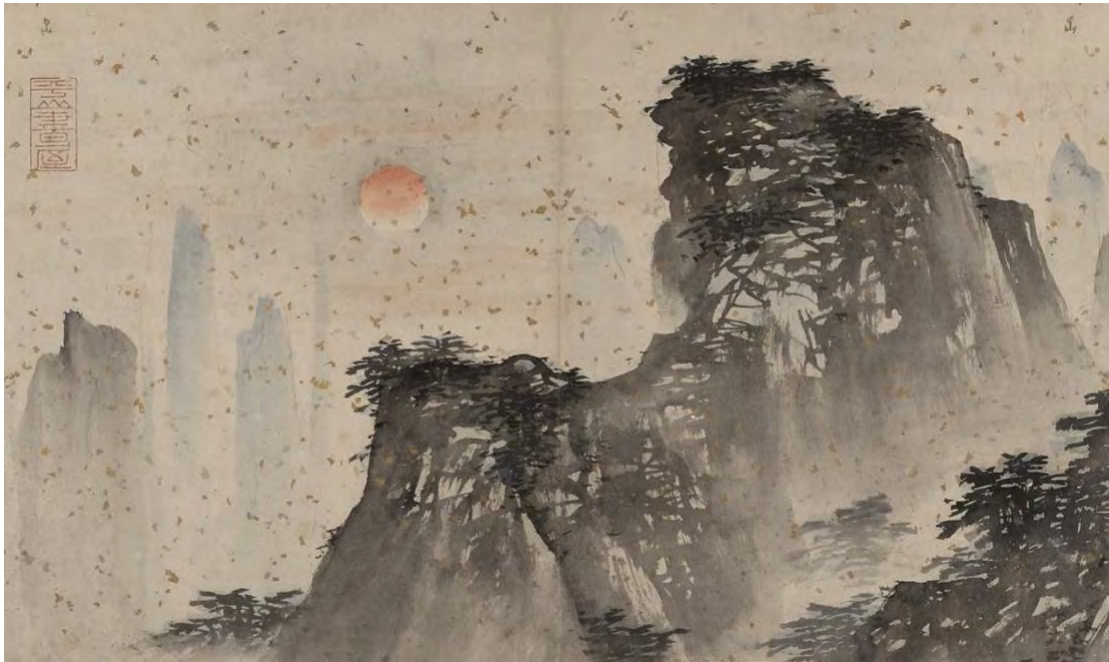
John Zerzan has extensively studied and commented the *Daodejing*; for him time can be seen as the master and measure of a social existence that has become increasingly empty and technicized. Time is expressed as history, which also limits humanity. History is eternal becoming and therefore eternal future; Nature is become and therefore eternal past. Hence the complexity of the *YinYang* symbol and its universal value.

## COMPLEXITY AND INTERCONNECTION



“There has never been a time when this article didn’t exist.”

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*View of Mountains* from an album of 18 Daoist paintings by Zhang Lu (1464-1538 - ©Wikipedia)

In the February 17, 2021 of *Psyche Magazine* (published by Aeon Media Group Ltd) he offered an essay titled ***There has never been a time when this article didn’t exist.***

Here it is:

Daoism is one of the formative schools of thought in ancient China, and its conception of time remains one of the most ingenious in human history. By considering how Daoism conceives time, we can better grasp its argument that many of the convictions we hold about the world are incomplete and contingent



## COMPLEXITY AND INTERCONNECTION



upon a particular approach to thinking. The primary contribution Daoism makes to our understanding of time lies in its view that time is not linear but circular. What is more, the central concept of Daoism – the Dao – cannot be said to exist within or beyond time, which would imply it either has being or is without being. Rather the Dao is concurrently being and non-being.

So, Daoism rejects the belief that time is human-centric, arguing instead for the natural temporality of the universe. This cosmological time, however, must be compared to something else if we are to know it, and that otherness is non-time of the Dao. The *Zhuangzi*, Daoism's central text, explains what this is:

*The Dao has reality yet no place where it resides; it has duration yet no beginning or end. Something emerges, though through no aperture – this refers to the fact that it has reality. It has reality, yet there is no place where it resides – this refers to the dimension of space. It has duration but no beginning or end – this refers to the dimension of time ... The 10,000 things come forth from non-being. Being cannot create being out of being: inevitably it must come forth from non-being.*

We can illustrate the above by way of the four seasons. While each season has its own traits, all of them exist in a state of continuous change. Where one arises, another declines, where one peaks, another has already bottomed out. Given that one season cannot occur without the disappearance of the one preceding it, this cycle of change is not only self-perpetuating, it occurs in a spectrum of time unknowable to those who mark time in halting, linear steps. Indeed, human-measured time is premised on the artificial distinction between self and other, progression and regression, being and non-being, and so forth. These distinctions don't occur in Daoism.

Time is thus a metaphor for a person's closeness to the Dao. This is because the natural world doesn't know of human-measured time; it only knows the unnamed, undifferentiated milieu of the cosmos. The closer a thing is to the Dao, the less important time becomes. Conversely, the more distant a thing is from the Dao, the more reliant it is on absolute distinctions to inform its life choices. The myriad creatures of the world are an example of the former, while human beings are an example of the latter.

Let us return to the example of the four seasons. How we order them affects how

## COMPLEXITY AND INTERCONNECTION



we judge them, and how we judge them affects how we view the world. All of these decisions, however, are colored by our preferences and prejudices. Those who favor winter will see it in more positive terms than the other seasons. Within this group of winter-lovers, those who feel at home in the snow will stand apart from those who disdain it. What's more, winter that lasts only one or two months will pale in comparison with that which stretches on for six months. So, the conditions and durations we use to define 'winter' are no more than the result of our own, limited perspectives.

This is why Daoism argues that humanity's perspective of reality is inherently limited, so long as we engage things from the standpoint of our own being. Human-measured time is but a mental construct designed to ease the anxiety we feel over our own mortality. Daoism holds such anxiety to be illogical in that all things are born, and all things perish. The difference between ourselves and the natural world is that the latter doesn't question the timing of its birth and death, nor attempt to alter its fate. Human-measured time, therefore, is unable to account for the variegated changes that happen in the world because some of them help to prolong life while others work to shorten it. Our linear way of thinking is hence shattered when we encounter a situation wherein time can't be counted or visualized. This cosmological time is more genuine than human-measured time insofar as it dissolves the need for a carefully delineated temporal order to which we can attach the names past, present and future.

To be clear, cosmological time is not an altogether different kind of time. Rather, it's a new way to experience time, a way of seeing through the convention of human naming that forces our limited perspectives on to the natural world. There's a story in the Zhuangzi about the death of Zhuangzi's wife. When asked by a friend why he stopped grieving her, Zhuangzi replied:

*"I looked back to her beginning and the time before she was born. Not only the time before she was born, but the time before she had a body. Not only the time before she had a body, but the time before she had a spirit. In the midst of the jumble of wonder and mystery, a change took place, and she had a spirit. Another change and she had a body. Another change and she was born. Now there's been another change and she's dead. It's just like the progression of the four seasons: spring, summer, fall, winter."*

## COMPLEXITY AND INTERCONNECTION



There has never been a time when Zhuangzi's wife didn't exist. Even though her corporeal presence has come and gone, what makes her existence (and non-existence) possible is the Dao. The Dao doesn't create things *ex nihilo* but uses the nothingness that's its own resting to create a clearing into which things can emerge. This is why Daoism frequently speaks of voids, hollows, clearings, stillnesses, quietudes and so forth. The Dao is inseparable from things, including the Universe, and Daoism says that human beings becloud their awareness of the Dao by pursuing things that are unnecessary to life, such as fame, wealth and avoiding death. If life and death are simply two perspectives of time, what better way to conjoin them than to do away with human-measured time?

This is why we should observe things on the level of cosmological time. In the nameless harmony that is cosmological oneness, time persists, but at a level too subtle for humans to recognize. The reason for this is that we're inherently limited in what we can know (physically, mentally, spiritually). By retraining ourselves to reside in the in-betweenness of things, we can release ourselves from the notion that time is being-centric and consider the alternative: time is the resting nothingness of the Dao. This non-being is not a nihilistic threat to being but its natural counterpart. As the root of being and non-being, the temporal and spatial nature of the Dao cannot be limited to either of these terms. The Dao, therefore, operates in the time of non-time and resides in the space of non-space.

This all might sound rather mystical. Indeed, early Sinologists labelled Daoism as much. However, describing the Dao and its connection to the myriad things of the world in this manner does not mean the Dao is unknowable. In fact, quite the opposite. Prior to human beings, the Dao was unnamed and undisturbed, and the Universe existed in perfect equanimity and quietude. Cycles of change and processes of transformation fulfilled themselves without obstruction and the fate of things was unquestioned. It was human beings who introduced the practice of naming and the concept of time to interrogate the nature of the Dao and justify our self-elevated standing in the world. This is why Daoism shines a spotlight on the sage, for only the sage is able to live without names, desires, moral norms, and dwell in the non-temporality of nothingness.

The sage also teaches us that the future is not a progression of the past and the past is not overcome by the present. Indeed, past and future as designators of

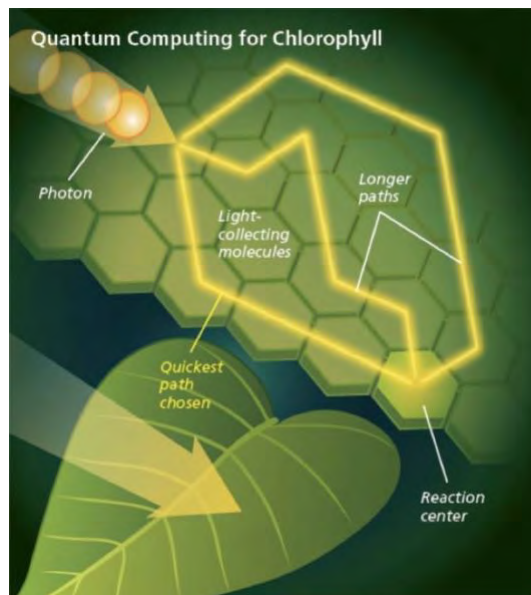
# COMPLEXITY AND INTERCONNECTION



motion can be replaced with an emerging from and a returning to cosmological oneness. Standing in the non-time of the Dao is thus to stand in the pivot between being and non-being and having relocated ourselves to this position of no-self, we can know what it means to be simultaneously in and out of time, alive yet dying. Indeed, the objective of Daoism is to educate humanity about the fallacy of many of our convictions, especially those that endanger ourselves and the natural world. Given that time is one of the most misunderstood aspects of reality, is it any wonder Daoism tried so hard to shatter our illusions of it?

## Quantum Biology Takes Us Back to Laozi

The field of quantum biology applies quantum mechanics to biological objects and problems. It can be defined as the study of quantum phenomena within biological systems.



Many biological processes involve the conversion of energy into forms that are usable for chemical transformations and are quantum mechanical in nature. Such processes involve chemical reactions, light absorption, formation of excited electronic states, transfer of excitation energy, and the transfer of electrons and

# COMPLEXITY AND INTERCONNECTION



protons (hydrogen ions) in chemical processes such as photosynthesis and cellular respiration. Quantum biology uses computation to model biological interactions considering quantum mechanical effects.

Some examples of the biological phenomena that have been studied in terms of quantum processes are the absorbance of frequency-specific radiation (i.e. photosynthesis and vision); the conversion of chemical energy into motion; magnetoreception in animals; DNA mutation and Brownian motors in many cellular processes.

Recent studies have identified quantum coherence and entanglement between the excited states of different pigments in the light-harvesting stage of photosynthesis. The theory of orchestrated objective reduction argues that coherent quantum processes within microtubules are the origin of consciousness.



One of the most influential people to link quantum physics and biology was Erwin Schrödinger, whose book *What is Life?* inspired, among others, DNA pioneers James

# COMPLEXITY AND INTERCONNECTION



Watson and Francis Crick.

In fact, Schrödinger's view was based on biophysicist Max Delbrück's theory, put forward in the so-called Three-Man Paper, written with geneticist Nikolay Timofeev-Ressovsky and biophysicist Karl Zimmer in 1935. Schrödinger argued that if Delbrück's view of mutation was wrong, then "*we should have to give up further attempts*", meaning we would have to give up on using physics to explain genes. Delbrück's approach was correct only at the most general level, and the discovery of the nature of mutations did not refer to his ideas at all.

Experimental studies at the interface between quantum physics and the life sciences have so far been focused on two different questions:

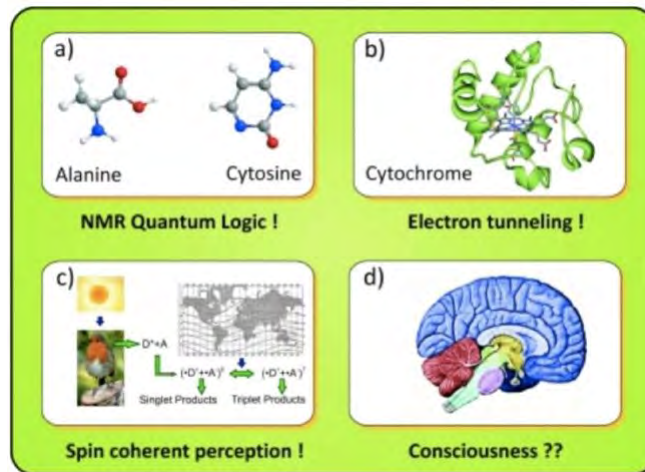
- (1) Can genuine quantum phenomena be realized with biomolecules?

Photon antibunching in proteins, the quantum delocalization of biodyes in matter-wave interferometry and the implementation of elementary quantum algorithms in nucleotides are some recent examples. These experiments are optimized for revealing fundamental physics, such as quantum statistics, delocalization, and entanglement. But they all also show that quantum phenomena are best observed in near-perfect isolation from the environment or at ultralow temperatures, in order to avoid the detrimental influence of decoherence and dephasing. They are thus not representative for life as such.

- (2) Are nontrivial quantum phenomena relevant for life?

Nontrivial quantum phenomena are here defined by the presence of long-ranged, long-lived, or multiparticle quantum coherences, the explicit use of quantum entanglement, the relevance of single photons, or single spins triggering macroscopic phenomena. Photosynthesis, the process of vision, the sense of smell, or the magnetic orientation of migrant birds are currently hot topics in this context. In many of these cases the discussion still circles around the best interpretation of recent experimental and theoretical findings.

# COMPLEXITY AND INTERCONNECTION



(a) The nuclear spins of amino acids have been used as qubits in quantum computing demonstrations.

(b) Electron tunneling on nanometer scales has been established as a common phenomenon in life, for instance, in reactions with cytochrome.

(c) Electron spin entanglement and coherent spin transport are part of an explanation for the magnetic orientation of migratory birds.

(d) Speculations about the influence of quantum physics on human consciousness are regarded as inspiring.

Fascinating combinations of physics and biology can be understood already now. We have identified a large number of interconnects between quantum physics and the life sciences and the status of present experimental skills is great. But the complexity of living systems and high-dimensional Hilbert spaces is even greater.

As Schrödinger and others have demonstrated, once we get inside the atoms of the nuclei of our cells, quantum physics apply; this means that we move into an imprecise, non-linear area where prevalence (not certainty) reigns. We rejoin the philosophy of Laozi. This affects us universally –as well as the universe.



# Where do we go from here?

“The Daoists relate that at the great beginning of the No-Beginning, Spirit and Matter met in mortal combat. At last, the Yellow Emperor, the Sun of Heaven, triumphed over Shuhyung, the demon of darkness and earth. The Titan, in his death agony, struck his head against the solar vault and shivered the blue dome of jade into fragments. The stars lost their nests, the moon wandered aimlessly among the wild chasms of the night. In despair the Yellow Emperor sought far and wide for the repairer of the Heavens. He had not to search in vain. Out of the Eastern sea rose a queen, the divine Niuka, horn-crowned and dragon-tailed, resplendent in her armor of fire. She welded the five-colored rainbow in her magic cauldron and rebuilt the Chinese sky. But it is told that Niuka forgot to fill two tiny crevices in the blue firmament. Thus began the dualism of love—two souls rolling through space and never at rest until they join together to complete the universe. Everyone has to build anew his sky of hope and peace.

*The heaven of modern humanity is indeed shattered in the Cyclopean struggle for wealth and power. The world is groping in the shadow of egotism and vulgarity. Knowledge is bought through a bad conscience, benevolence practiced for the sake of utility. The East and the West, like two dragons tossed in a sea of ferment, in vain strive to regain the jewel of life. We need a Niuka again to repair the grand devastation; we await the great Avatar. Meanwhile, let us have a sip of tea. The afternoon glow is brightening the bamboos, the fountains are bubbling with delight, the sighing of the pines is heard in our kettle. Let us dream of evanescence and linger in the beautiful foolishness of things.” — Okakura Kakuza (*The Book of Tea*)*

This was a long journey, and as Laozi said: *The journey of a thousand miles begins with one step.*

Arrogant Western scientists who claim the heritage of the Enlightenment (18<sup>th</sup> Century CE) but are a product of Abrahamic religions and oppressive powers, do not even provide a tiny speck in the firmament of Chinese wisdom and culture. They congeal observations and then –by diktat- proclaim universal, timeless, eternal truth. It is laughable and insane –but that’s the new gospel of the lemming evangelists.

Where is the humility of Socrates [ἐν οἶδα ὅτι, οὐδὲν οἶδα], of Hippocrates [θεραπεία



## COMPLEXITY AND INTERCONNECTION



μερικές φορές, αντιμετωπίζουν συχνά, άνεση πάντα], of Ambroise Paré [*Je le pansai, Dieu le guérit*]; the wisdom and foresight of Richard Feynman [*Science is the ignorance of the expert*]? The Diafoiruses, the Savonaroles, the Roman Inquisition who had Giordano Bruno burned at the stake in Rome's Campo de' Fiori, the Lysenkos, the Mengeles, the Japanese 731 部隊 are back with a mission supported by blinds who claim they can see.

They imprisoned Donatien Alphonse François, Marquis de Sade for twenty-seven years –that was not the end. They designed in 1802 the *curricula* and the exams that, with a thin coat of paint, they impose today. How do you expect the world to survive and flourish – as it should?

Since my time at the Lycée Henri IV (1946-1952) I fought the “*system*”; my free days were spent in detention to the despair of my parents. (Eventually, in 1968, things changed, as I had fought for).

Then the inanity of the medical studies in France took over; these also were re-designed on February 2<sup>nd</sup>, 1802 and continue to this day.

I have traveled to and worked in 143 countries – and counting. Everywhere I found original cultures that sculpted the psyche of the peoples. Everywhere also I faced the ugly heads of the colonialism-imperialism-universalism hydra. The Inquisition is wearing new clothes, but the spirit remains intact. Doubt is not on the agenda; humility is weakness; the Crusaders, the Jihadists may at times wear lab coats, scrubs, or display Ivy League diplomas, their Western world is still ruled by excommunicating the actual heretic, or skeptic.

With a group of diverse mind/culture explorers I have tried to make sense of my juvenile –some will say “*infantile*”- revolt against these establishments. I owe them more sanity, some purpose, certainly an increased curiosity. They also invited me – firmly – to look into this caldron and try to assemble an edible menu. You will decide if it makes any sense.

Maybe – just maybe – our inextinguishable thirst for knowledge should be bathed in more wisdom. This could be the ideal blend that Laozi or Richard Feynman, or even the Marquis de Sade, would have appreciated. The tools are being created, constructed, available in greater numbers and faster every day. It is our task to use them wisely; to teach the generations to come; to free ourselves from dogmas. **And make the world a better place for all.**



## Acknowledgements

It took me much more than nine months to deliver this essay. I nursed it for >40 years, since –thanks to my wife Emiko – I discovered East Asia and made it my alternative living place two decades ago. My prejudices were monstrous; my ignorance abyssal; my brain aging fast. And as I often quip *nothing improves with age – except Great wines*.

Those who remove the scales from my eyes, improved my damaged hearing, stimulated my production of Nerve Growth Factor are many, too many to be mentioned. If I do not list them, it is not because I forgot, or lack of gratitude, but limited space. They will forgive me.

Albert B. Wong, Albert S.C. Chan, Maggie M.W. Wai, Ailsa C.Y. Yuen have mentored me with patience, experience, wisdom and more. Our daughter Emmanuelle Halpern-Mazères, Jean-Claude Guez and Yves P. Huin took time to review, edit and suggest. Brian Arthur and Douglass Carmichael reconnected me to Complexity. Andrew L.T. Sheng, Robin R. Wang, Jonathan Y.H. Sim, Jan W. Vasbinder and the team at and around the *Para Limes* Complexity Institute of Nanyang Technological University in Singapore have been the catalysts who incited me to formulate my thoughts and feelings.

But none of this could have been possible, even thinkable, without Yves P. Huin, webmaster, editor, friend, counselor, and more; and my wife Emiko Oguiss: behind her façade of calm and often reprobation, the millennia of wisdom with the perception of the future, there is deep love; she has been the permanent guide and educator that I wish everyone. She was the architect.



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This is more a collage, a cut-and-paste piece, most *verbatim*. Quoting in the text all the plunder will destroy the reading and the purpose. The references listed are the most obvious, but some remain hidden despite my efforts. Blame my senility, fatigue, or plain laziness.

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# COMPLEXITY AND INTERCONNECTION



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