

SYSTEMIC AGEING POLICIES - A GLOBAL PROBLÉMATIQUE AS AN EXAMPLE FOR SYSTEMS SCIENCES AND SYSTEMS PRACTICE WITH CYBERNETICS AND ANCIENT-MODERN EAST-WEST SYSTEMS THINKING.

Abstract ID: 3956

Name (do not enter name on first submission)

Author's Affiliation (do not enter name on first submission)

Contact Information (do not enter CI on first submission)

Abstract

Active and healthy ageing has been investigated by the World Health Organisation WHO and governments in many countries. If anything is an open system, then the Elderly system could not be closed! Problems that have risen from the reductionistic close system perspective include age discrimination, elder abuse, capitalism biases against socialism, youth biases against elderly, social isolation, city migration, elderly rights vs youth duties, and such like. Therefore we need to tune the boundary openness and investigate the possible and important connection between the Elderly system and other systems, so that new systems can emerge and evolve themselves. A healthy society would require tuning policies for the dynamic balance among different sub-systems and the environment, and for the emerged systems to evolve healthily. We would like to compare the two possible solutions from a reductionistic approach and that of a systemic one. This would involve systemic wisdom from different SIGs to work together to address issues arise from the current balancing points of different Yin-Yang spectrums, and tune them with Cybernetics and Ancient-Modern East-West Systems Thinking strategies. Possible spectrums could be the elderly-youth spectrum in population system, retirement-workforce spectrum in society, duties-rights spectrum in ethical perspective, ancient-modern spectrum on culture establishment in societies. This would involve concepts from Confucianism, Buddhism, Taoism, and Traditional Chinese Medicine. The human body will fail eventually with ageing, but systems scientists have the responsibility to implement systemic strategies that could help the elderly to fail gracefully and systemically. Elderly healthcare is not only about the physical body but also involves Mental, Emotional, Behavioural, and Spiritual aspects. Innovation is the process arises from the emergence of functional new systems supported by various stakeholders-observers who could realise the new connections between different existing sub-systems. Therefore stakeholders-observers' involvement and support is of utmost importance. Systemic analysis and systems practices showed a better picture of the whole problem. This allow us to implement strategies with a much better direction, and to realise the effective strategies that are already implemented in a systemic way unintentionally. Such an active and healthy systemic ageing systemic proposal could well be applied to ISSS itself.

Keywords

Active and Healthy Aging, Ancient-Modern East-West systems thinking, Five-elements Society System EMSCE: Economics-Management-Social-Cultural-Environmental, Confucianism - Buddhism - Taoism - Traditional Chinese Medicine, Mentor-Successor Education System

1 | Introduction

Active and healthy ageing has been investigated by the World Health Organisation WHO and governments in many countries. Active Ageing has been analysed systemically as a Global Problématique again lately (FINLAYSON 2016?). If anything is an open system, then the Elderly system could not be closed! Hence we need to investigate the possible and important connection between the Elderly system and other systems. A healthy society would require a dynamic balance among different sub-systems and the environment with careful tuning of the openness of the boundary to provide both freedom and stability.

We would like to investigate the problems that have risen from the reductionistic close system perspective, including age discrimination, elder abuse, capitalism biases against socialism, youth biases against elderly, social isolation, city migration, elderly rights vs youth duties, and such like.

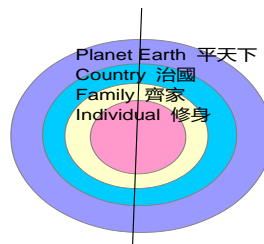
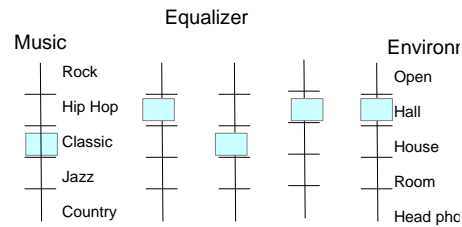
Common suggested solutions so far include more government funding, more subsidies, more emphasis on elderly human rights, and such like. However, we wish to investigate the more systemic perspectives and strategies that involve a shift of the dynamic balancing points among systems to improve the overall performance of the human society system. This would involve systemic wisdom from different SIGs of some international society such as ISSS or IFSR. SIGs may include Action Research, Balancing Individualism and Collectivism, Systemic Approaches to Crises and Disasters, Health and Systems Thinking, Organisational Transformation and Social Change, Science, Spirituality and Systems Science, Systemic Ethics, Designing Educational Systems, Student SIG, and others. Systemic scientists from different SIGs could work together to address issues arise from the current balancing points of different Yin-Yang spectrums. Such spectrums would involve two extreme opposite sides and all the possible balancing points in between. These sets of points would suit different situations of different problems. For example, playing different musics (system) would required a different setting of all the different specturms on the equalizer. Playing the same music in different surroundings (Environment) would also need different specturms settings on the equalizer, as shown in exhibit 1.

Exhibit 1. Tuning Equalizer for different music and the surrounding

Yin-Yang spectrums included in the Active Ageing problem would be the elderly-youth spectrum in population system, retirement-workforce spectrum in society, duties-rights spectrum from the ethical perspective, and ancient-modern spectrum on culture establishment in societies.

Balance between super and sub systems involving the whole local-national-regional-global structure forming the *Levels-spectrum* and should also be attended. By comparing the common reductionistic problématique solutions with those of systemic problématique solutions would help decision makers to have a better understanding of systems sciences and systems practice.

Exhibit 1. *Levels-spectrum*



2 | Ageing - A Global Problématique

Ageing is unavoidable since the record of human history. While some animals such as lions would dump their elderly into the environment, other animals such as monkeys would look after their elderly and let them remain within the society system. Basic units of couple, family, race, neighbourhood were employed in the ancient times to look after the elderly. However, with the value biased much more towards the freedom and privacy side and away from the stability and sharing side (stability-freedom, sharing-privacy), these basic group-units are gradually disassembling, and hence elderly become a new Problématique in modern city based society that would require some new kinds of assembly.

Many strategies and policies has been implemented in different countries. Understanding wether the strategies belongs to reductionistic approaches or systemic approaches would help us improve our efficiency, efficacy and other such goals.

3 | Ageing Policies – A Reductionistic Approach 1+1=2

Different stakeholders-observers always try to gain more shares of the same cake because $1+1=2$ at all times in their perspective. These stakeholders-observers supports different perspectives and usually would try to maximize their shares through controlling each other. However, AIC systems theory (SMITH 2008) suggested that control, negotiation (influence) and adaptation (appreciation) should be employed depending on the situations. In this section we tried to investigate five different perspectives.

Exhibit 1. Five perspectives with Reductionistic approaches

31 | Economical perspectives to maximise profit

The goal of these perspectives would be to balance the *budgets* that would balance the interests of different groups of people! Money, goods and services, profit or loss would be the major considerations. Rich population would like to remain rich! If the elderly did not work hard to make their saving while

young, they deserve no more! Information Technologies innovations should be employed to increase efficiency and efficacy through the use of hardware, software and communication. Such perspectives alone would cause wealth inequality and this situation is getting worse as our world is currently heavily biased towards Capitalism, maybe it is time to tune the system back towards Socialism side of the socialism-capitalism spectrum.

32 | Political perspectives to maximise re-election

The goal of political perspectives would be to retain power, control, and please the stakeholders with fiscal and monetary policies. Powerful population would like to remain powerful. They would please the elderly if their votes are influential.

33 | Cultural perspectives to maximise ethical values

Constitutional dreams of a race, country, or planet would define carefully of the cultural perspectives. Dreamers would like to keep their hope achievable. Brotherhood, neighbourhood, family relationship (elderly-youth relationship), couple relationship should be instated at all cost.

34 | Environment perspective to maximise the use of natural resources

Land (unusable-usable), minerals (mixed-pure), Oxygen-pollution, food-rubbish, transportation-containment, Water pure-polluted, trees-waste, animals-death could be the spectrums of natural resources that are concerned by the environmentalist, and they would like the environment to be sustainable and thrivable. Population and individual consumption should be minimized. Elderly should not be allocated too much resources which should be saved for the next generation.

35 | Society perspectives to maximise the stability of the country

The main goal of the society perspectives is to stay together. Spectrums of freedom-stability, rights-duties, togetherness-separation are their main concern. They would see elderly as part of the society and hence should be well looked after.

Exhibit 1. Reductionistic approaches with closed boundary



Reductionistic approaches assume a totally closed boundary between the object of interest and the environment, while assuming totally opened boundary for different *sub-objects* within the object of interest. Therefore they would isolate the elderly as separate part of the population to implement strategies. Reductionistic approach would hence try to maintain the closed system and supply resources such as money, human resources, including administration personnel, social workers, clothes-food-

accommodation-transportation (衣食住行), entertainment (吃喝玩樂), and body-mind-spirit (身心靈) healthcare with medicine-information-religion, different modern Information Technologies with hardware, software and communication systems such as climate change strategies, smart city structure, robotics caring system and such like.

A more neutral governance would try to find a balancing point between the interest of the different stakeholders-observers supporting these five proposed perspectives. Such approaches might seem to include mostly known perspectives already and hence is thought to be holistic thinking, however, we will show in the next section that there is much more in systems thinking.

4 | Systemic Ageing – Systems Thinking and Systems Practice

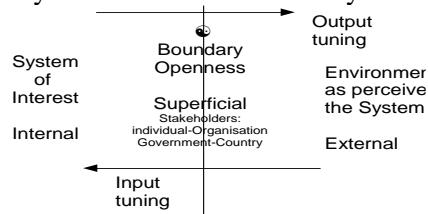
The human body will fail eventually with ageing, but systems scientists have the responsibility to implement systemic strategies that could help the elderly to fail gracefully and systemically. So the questions are: What is Systems thinking? What is Systems Sciences? How to do Systems Practice?

4.1 | System of Interest–Boundary–Environment – from Taichi Yin-Yang to 13 elements structure

System of Interest can be understood as the object of interest and in our case, the Elderly system. The common understanding of Environment could be the forest, energy, air, water, and the planet Earth. In systems theory we could understand *Environment* as the surroundings of the systems. In our case of Elderly system, the Environment could be the rest of the population and the common environment. (Uexküll 2015) suggested how living beings perceive their environment(s). He argued that organisms experience life in terms of species-specific, spatio-temporal, 'self-in-world' subjective reference frames that he called Umwelt, translated as surrounding-world, phenomenal world, self-world, environment. That is, the Environment should be classified subjectively according to the structure of the System of Interest, because the environment contains all the possibilities for the system. The *Boundary* separates the System of Interest from the Environment. System of Interest–Boundary–Environment form the basic structure in systems thinking as shown in Exhibit 3.

A *close system analysis* is the traditional reductionistic approach where the boundary is totally closed. Systems thinking is the approach where the boundary is allowed to be opened, and Systems practice is largely about the tuning of the *openness of the boundary*.

Exhibit 3. System of Interest–Boundary–Environment



Systems Thinking is the study of the object you are interested, both internally and externally, but most importantly superficially on the boundary that differentiate the internal and external. In Chinese thinking, it is named as the *Taichi Yin-Yang combo* (太極陰陽) corresponding to the *Boundary External-Internal* combo respectively (WONG 2007). The boundary could facilitate the input and output for the object. Chinese thinking use the concept of *Five-elements* 五行 consists of Wood-Fire-Earth-Metal-Water

to correspond Input-Facilitation-Internal-Output-External respectively. Note that the *Five-elements* 五行 is not a one to one matching with the Indo-European *Five-elements of Ether, Air, Fire, Water, Earth* suggested by Ayurveda and Aristotle.

Internal systems thinking is to observe the structure and function (整體體用) of the object of interest, its parts and their corresponding properties (局部體用), and most importantly on how the parts are connected together to achieve the structure-function of the system of interest. When the observation is studied through time, we name the changing object as *System* (分合 : 體用). The Five-element of *Wood-Fire-Earth-Metal-Water* would correspond *Parts-Connections-Structure-Function-Properties* respectively (WONG).

Exhibit 3. *Internal systems thinking vs Reductionistic thinking*
parts-connections-structure-function-properties
sum of parts = whole

Input-Facilitation-Internal-Output-External emergence of parts = whole

External systems thinking is to observe the resources for the system which provide all the *possibilities* for the changes of the system. This would include all the *possible parts, possible connections, possible structures, possible functions, and possible properties*, and would correspond to *Wood-Fire-Earth-Metal-Water* respectively in Five-elements theory (WONG). Note that the input of new possible properties into the system would change the fundamental unit in the system and would hence create a totally new series or systems. That is why in some theory the possible properties are called *possible possibilities* (SAUTOY) or *multi-verse* (PALMER). When the external observation is studied through time, we name the changing resources as *Environment*. We believed that the Environment should be as seen by the system *subjectively* and categorised relatively to the categorisation of the *System* (Uexküll 2015), rather than us reductionistic approaches of categorising the environment objectively.

Superficial systems thinking is to observe the boundary that facilitate the input and output of the system from and to the environment. This facilitation would allow advantageous changes for the system and reduce disadvantageous changes. Hence the boundary could be a neural network that can learn and adapt with time to *evolve*. The Five-element of *Wood-Fire-Earth-Metal-Water* would correspond *Input-Boundary-System-Output-Environment* respectively.

Chinese thinking use the concept of Trinity of Heaven-Human-Earth 天地人 to represent the External-Superficial-Internal respectively. If we use 3 levels to represent Environment-Boundary-System as i+1, i, i-1 respectively, we would have the following as shown in exhibit 4.

Exhibit 4. 3 levels of 5 elements in External-Superficial-Internal

- Heaven level i+1: *Environment emerged from possible parts, possible connections, possible structures, possible functions, and possible properties*
- Human level i: *Boundary differentiation → Input-Boundary-System-Output-Environment*
- Earth level i-1: *System emerged from Parts-Connections-Structure-Function-Properties*

Therefore the *13 Elements theory* emerged out of the process of *Boundary differentiation* is: *Input-Boundary-Parts-Connections-Structure-Function-Properties -Output- possible parts- possible connections- possible structures- possible functions- possible properties.*(WONG 2016a)

Systems sciences should be the study of using modern mathematics and science to rationalise systems thinking. However some properties of the systems thinking exceed the fundamental principles of common sciences including precision and repeatability, but instead systems thinking is more related to controversial science like chaos and fractals. We believe that systems thinking is so fundamental and highly abstracted so that a *General Systems Theory* should be able to explain modern mathematics and sciences the other way around.

Systems practices are the applications of systems thinking and systems sciences on real life problems. The process should help us formulating strategies that are more efficient and effective because more aspects and more systems would be able to work together as a whole. Redundancy, bottlenecks and conflicts may be reduced with systems practices.

42 | Systems Emergence 1+1=3 through boundary openness

When two systems find new connections between them, a new system would *emerge* with the support of stakeholders-observers. New cakes are grown out of the old cake and we call this phenomenon *emergence* in systems thinking.

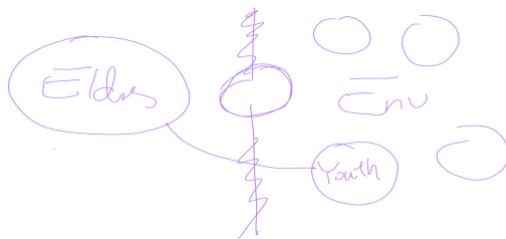
For example, the *Elderly-youth system* would emerge when the boundary between them is opened and new connections are established. Below are the possible emerged systems and some of them are already in practice:

- Nursing Home-Preschool system (BROWN 2015)
- Elderly Zoom tuition or homework helping for children in Hong Kong
- Elderly act as field trip guidance for children in Hong Kong

Retirement-workforce system would emerge when the boundary between them is opened and new connections are established. Below are the possible emerged system and some of them are already in practice:

- Elderly act as Tourist guiding in airport in Japan and Hong Kong.
- Business organisations have supports from elderly consulting companies that only employ seniors over 80yrs old in Japan.

Exhibit 3. Example



Government could acting as middle man to facilitate funding, management, insurance and such like for individual or social cooperate (社會企業) that manage such emerged systems. On the other hand, the government should make sure the compliance of such cooperate so that they do not create instability in the overall system. That is, the government should act as the environment of the system and

help the boundary to establish compliance themselves rather than being controlled by the government all the time.

Stakeholders-observers The emerged systems need supporters in order to be sustainable and thrivable. The supporters that have involvements or shares in the emerged systems are called Stakeholders, while supports that are only interested in the system and keep observing are called observers here. Therefore the Stakeholders-observers group should be gathered by the governance through different kinds of policies so that the emerged system could be self-organised and evolve themselves.

Mentor-Successor System – Elderly-Youth system Emergence The elderly-youth relationship should be a more *mentor-successor relationship* on different levels from family, organisation, country, and all the way to the whole world. Mentor-Successor System could help the Youth to keep gaining the experience from the Elderly. Such systems has already been in operation in Traditional Chinese Medicine practitioners, lawyers, architects, and engineers. It would be of beneficial to the society if such systems can be extended to other fields of practice in a systemic way.

44 | Dynamically Balancing of the Yin-Yang Spectrums – Cybernetics for boundary openness tuning Should the boundary be more open or more close? How could we find the best balancing point for a good system? Here we introduce the concept of Yin-Yang Spectrum, Dynamic Balancing, and Cybernetics to deal with these questions. Open system allows *diversity* while close system can protect *stability*. Totally opened systems would be the Yin side of the spectrum while totally closed systems would be the Yang side of the spectrum. At a glance, two sides seem to be opposite to each other, but together they form a *Yin-Yang spectrum* of possible combinations of open and close systems, for example, mathematically in the middle is 50% open and 50% close in terms of space and/or time. *Dynamic Balancing* of the spectrum is the shifting of the current point on the Yin-Yang spectrum, so that from time to time the corresponding combination of Yin-Yang, here Open-Close, will keep the system survive, sustainable, and thrivable. *Cybernetics* is the theory and practice that could tune the system to find the dynamic balancing point and hence could gain more of the advantages of both ends of the spectrum. Cybernetics has many definitions but we reckon the followings are closer to our applications (UMPLEBY 1982):

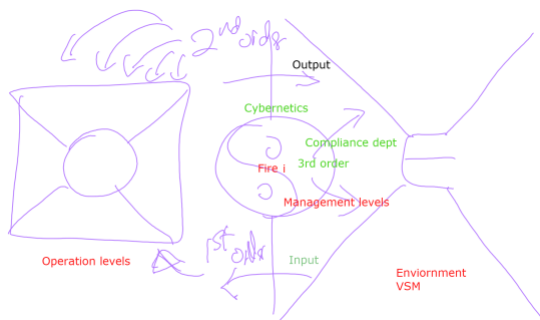
- “Cybernetics as the art of steersmanship” (Ashby)
- “The science of control and communication in the animal and the machine” (Norbert Wiener)

Ancient Chinese Systems Theory employed a holistic approach to deal with problems. They used the concept of Taichi to represent the initiation/distinction/boundary, which will result in the formation of Yin and Yang to represent Environment and System (WONG 2008). The different possible ratio of Yin-Yang in a system will form a Yin-Yang spectrum. For example, a system of chair design (Taichi) would form the structure (Yin) and function (Yang) components. The different possible ratio between structure-function will form the Cold-Hot spectrum. The Cold side of the spectrum represent a chair design with a lot of structure but very little function, for example, a solid big strong sphere for one person to sit on. While the Hot side of the spectrum represent a chair with very little structure but a lot of functions, for example, a long chair for 10 persons to sit on but is made up of thin single thread copper wires. Both extreme sides are not a stable chair design and will not have many stakeholders-observers supporters. The extreme Yin is a complete waste of resource and the extreme Yang is a completely unsafe chair. Hence the

goal is to find the dynamic balancing point in between the two extremes that is supported by the current stakeholders-observers (WONG 2018). A COLD elderly system is when too many seniors and too little juniors are involved. A HOT nursing_Home-Preschool system would be too little seniors playing with too many children at the same time at one place or at many different places.

The re-balancing of these Yin-Yang spectrums require financial supports, policy supports and different modern Information Technologies supports. In the case of elderly-youth spectrum, strategies would include climate change strategies, smart city structure, robotics caring system and such like.

Exhibit 3. Example



The Yin-Yang spectrum arise from the formation of the boundary (Taichi) would be the Close-Open spectrum that represent the “openness” of the boundary. Note that the boundary itself is also a system, namely *Fire system @i*. The regulation of the fire system in the boundary would require strategies starting from simple on/off switch of 1st order Cybernetics to multiple algorithm in 2nd order Cybernetics. However, the governance could not take care of the interest of only one system, so the system would also require to abide by the restrictions of other systems in the environment and the super-systems above. For example, a company could operate in many ways it desire (2nd order) but need the compliance department to make sure it does not brake the laws of the super-systems such as the government and community of different countries. (Ashby 2020) suggest the 3rd order cybernetics to investigate the restriction of the environment and abide by them within the *Fire system @i*, while the second order cybernetics investigate the possibilities of the system.

Exhibit 3. The Fire system with neural-network filtering the input-output and learning from the input-output



A *reductionistic approaches* to problems may only see one side of the spectrum and supporters would employ all their powers to push the society towards either ends, causing reductionistic conflict (WONG 2015c). For example, our rights have been over emphasised against duties and it is time for us to tune the dynamic balancing point between Individualism and Collectivism, that is, to tune the the Collectivism-Individualism Spectrum and the Duties-Rights spectrum. *Systemic approaches* would tune the systems and negotiate the dynamic balancing points on the spectrum so that the stakeholders of interest (and observers) could survive together in the same society with harmony. Investigations has been done to determine the possible Yin-Yang Spectrums that could arise from the differentiation of Systems and the Environment (WONG 2019), and it seems that new spectrums emerged from the ratio between the 13 elements of *Input-Boundary-Parts-Connections-Structure-Function-Properties -Output- possible parts- possible connections- possible structures- possible functions- possible properties*.

45 | Ancient-modern Spectrum for Society Structures

Ancient family and society structures could serve as examples for reference for systemic change. Confucius classic 《圍爐夜話》 concluded that “Greed is the worst of all unwholesome deeds, filial piety is the foremost among all wholesome deeds.” (萬惡淫為首，百善孝為先). Another fundamental concept is that the parents should have unconditional love towards the children while the children should have filial piety towards the parents (父慈子孝). Buddhism has a classics called Śukasūtra 《佛為首迦長者說業報差別經》 that taught us the important merits of filial piety. Taoism classic DaoDeJing 《道德經》 18 said “Filial piety and unconditional love arise only when there are conflicts between relatives. 六亲不和有孝慈”. Traditional Chinese Medicine said "Have an elderly at home is like having a treasure. 家有一老，如有一寶。". The elderly is a living encyclopedia with all the practical healthy daily-life knowledge on mental, emotional, physical, behavioural, and spiritual healthcare. TCM education system stress on the mentor-successor relationship (師徒制度). Therefore the balance between the Yin-Yang spectrums of *filial piety* and *unconditional love*, mentor-successor relationship, and individualism and collectivism, may hold the key to the active and healthy systemic ageing issue. Japan, South Korea, and China has been implementing these Ancient-Modern Society system to deal with the ageing issue, and Systems thinking should provide a betting understanding of the application and provide directions for tuning the Elderly system while achieving harmony for the whole society.

46 | Freedom-Stability spectrum - open more or close more.

The downfall of Ancient family structure was caused by the desire for change and freedom. And the desire arose from the long-term suppression of people due to the biases towards bureaucracy. It is believed that the cause is not the *Confucius system* of the *filial_piety-unconditional_love spectrum* itself, but is that the stakeholders abused the system. The correction is not to destroy the ancient system nor force the ancient system to be biased totally towards the freedom side. By tuning the system from the stability side towards the freedom side through negotiation between the stakeholders would solve the problem. Such systemic negotiation methodologies were investigated (SMITH 2009)(Gerald 2020).

Opening up the boundary allows the emergence of new systems. But our society has a system that is too open and *closing the boundary* may produce a better system for our Ageing problematique. The *money system* allows the free transfer of goods and services within a country and among countries. One of the conflicts in Ageing problematique is that rich people would have a lot of high quality ageing goods and services while the poor ones only have little. If we close down the money system so that the *Ageing-credits* that people gained while serving the elderly is non-transferable and non-liquidable, then poor people can use their Ageing-credits for high quality ageing goods and services instead of using money. This could then reduce the conflicts that arise from *wealth inequality* causing Ageing goods and services quality. Northern Europe and China already started using Ageing-passbook for recording such Ageing-credits ().

Individualism – Collectivism spectrum would be a super-spectrum including the Freedom-stability spectrum, the Duties-rights spectrum, and others. These issues are discussed in detail in the ISSS Individualism and Collectivism SIG ().

46 | Innovation – Maintenance (Compliance) spectrum – Newer or Older.

Innovation is the process that arises from the emergence of functional new systems supported by various observers who could realise the new connections between different existing sub-systems (Klein & WONG 2012). Supporters' involvement is of utmost importance. Maybe the active and healthy systemic ageing issue also exists within ISSS.

On 2022 01 08 SIG SAT meeting, the development direction of ISSS was discussed and the balancing point on the theoretical-practical spectrum was on focus. We suggested that even though we may not be able to influence the important governmental decision makers directly, it does not mean that we cannot perform a systemic analysis of a “Global Problematique” as an exercise for all the members of our society. Suggestions can then be made public or even published as a set of papers.

The process would involve suggestions of ideas/concepts/strategies from different SIGs. Possible connections between these suggestions could then be investigated and new systemic suggestions may emerge. With each emerged system, different functions/strategies would be realised by different stakeholders-observers, hence completing the cycle of systemic design process.

47 | Distributed-Centralised Spectrum – where is the power.

Ancient society systems are mostly *centralized* with a *hierarchy* structure, while modern systems are getting more and more *distributed* with structures such as *networks*. Instead of totally abandoning the centralised system, we may just shift the dynamically balancing point from being centralised to become more distributed on the *Distributed-Centralised spectrum*. *Blockchain* seems to be able to incorporate the benefit of *integrity* in a centralized system but at the same time distributing the integrity into the networks, so that every one on the networks would have the same logbook for integrity. China already started employing blockchain and matching apps similar to Uber for people to gain and spend their Ageing-

credits in their Elderly-Youth system (ZUO 2018), so that the integrity will hold disregards of location and time.

5 | Five-elements System Platform

It seem that a five-systems structure pattern is found in different systems at different levels. Would this pattern be a *fractal structure*? Where is such properties coming from? Why does it keep coming up? Could it be related to the limitations of our observations ability, concepts distinction, thinking process, understanding, and practice? If such a universal pattern exists, then it would be related to the structure-function of our consciousness, and would hold the key to the understanding of knowledge, Intelligence, and even wisdom. A platform to achieve *unity in diversity* is then possible for different *General Systems Theories GST* to communicate with and understand each other (WONG 2019a).

51 | Five-elements Healthcare System: Physical-Mental-Emotional-Behavioural-Spiritual

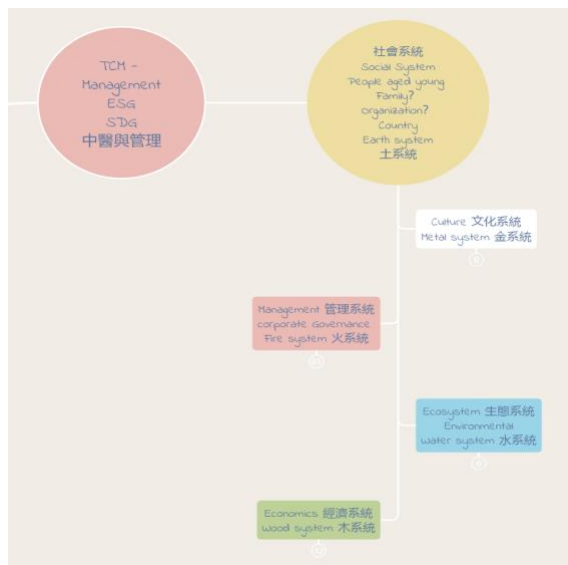
Healthcare is not only about the physical body but also involves Mental, Emotional, Behavioural, and Spiritual aspects, as suggested by the five-elements systemic healthcare system (WONG), body-mind-spirit healthcare, and the physical-mental-social healthcare of World Health Organisation WHO (WHO). Considerations should not be only from a western medicine's point of view but also from that of Traditional Chinese Medicine, Ayurveda Medicine, Homeopathy, Vipassana meditation, religious groups, and others.

52 | Five-elements Society System EMSCE: Economics-Management-Social-Cultural-Environmental

The performance of the society or companies should not be accessed only from the economical and management perspective, but also from that of social, cultural (ethical), environmental. Other theories also consider similar perspectives such as

- Environmental, Social, and Governance ESG (Wikipedia 2022a),
- Economic, Social, and Environmental Performance (Libraries 2022)
- The Social And Cultural Environment (Pressbooks 2022)
- The impact of political, economic, socio-cultural, environmental and other external influences (HealthKnowledge 2022)
- Social, Cultural, Economic Impact Assessments: A Literature Review (TURNLEY 2017)
- Ecosphere, Sociosphere, and the Ecosphere (FRIEND 2016)

Exhibit 3. Example



53 | Five-elements and Trinity – 13 elements

It is believed the three levels of five elements, forming the 13 elements structure could be applied to different discipline (WONG).

6 | Conclusion

By comparing analysis and solutions arise from the reductionistic approach and those from the systemic perspectives, we hope to provide alternative holistic perspectives for the same problématique. The systemic approach seem to provide more dynamic and viable solutions that are more flexible and feasible, and able to self-organizing and self-evolving.

Starting from the basics of systems thinking seem to be able to branch out into different fields of systems sciences and systems practices. Therefore *unity in diversity* is possible in systems theories.

The five-elements systems theory could be used as a platform for different systems theories to communicate and understand easy other deeper and easier. Further work would be to promote other systems scientists to establish other platforms from their systems science perspectives.

7 | Recommendations

Here are the steps to follow to start systems practices:

- Identify the Systems of Interest, its corresponding Environment, and the superficial Boundary
- Tune the boundary openness to allow connections to be formed and new Systems to emerge
- allow the stakeholders-observers to implement strategies and policies for the new systems to evolve with 1st and 2nd order cybernetics or operation levels in Viable System Model
- help the stakeholders-observers establish compliance with the environment in the form of 3rd order Cybernetics or management levels in VSM. DSRP systems thinking (Cabrera) and Relational-therapy (Kineman 2013) also have similar structure (WONG 2016a)
- Implement strategies to let more stakeholders-observers understand the benefit of the new systems and hence increase supports

- Resolve the reductionistic conflicts between the opposite sides of the Yin-Yang spectrums by helping them to understand each other and negotiate the new dynamic balancing point on the Yin-Yang spectrums, by employing Systemic strategies such as 13-elements systems theory. AIC model (SMITH 2009) or Boundary Critic (Gereld) also deals with the boundary problem

8 | Acknowledgements

Supporting Agencies: Ancient Balance Medicine Research and Education Fund Foundation Ltd.
古中醫科研教育基金會; Citizen of Macau SAR of China 中國澳門市民.

9 | References

- American Psychological Association. (2013). *The Basics of APA Style*. Retrieved from American Psychological Association: <http://www.apastyle.org/learn/tutorials/basics-tutorial.aspx>
- Ashby, M. (2020). Ethical Regulators and Super-Ethical Systems. *Systems* 2020, 8, 53.
<https://doi.org/10.3390/systems8040053> ; <http://ashby.de/>
- BROWN, GENEVIEVE SHAW. (2015). Seattle Preschool in a Nursing Home 'Transforms' Elderly Residents, 'Present Perfect' explores a preschool housed in a nursing home. *abcNEWS*
<https://abcnews.go.com/Lifestyle/seattle-preschool-nursing-home-transforms-elderly-residents/story?id=31803817>
- Cabrera, Derek and Laura. (). <https://www.cabreraresearch.org/>
- CHINADIALY. (2021). 如果延遲退休勢在必行，區塊鏈如何助力“養老助老”？ If the delay of retirement is a must, how can blockchain help ageing. 鏈報CHAINDAILY.
<https://www.chindaily.cc/posts/e3e36108ddf30d84a64e6eba025c5e10>
- FRIEND, Antony. (2016). System of Accounts for Global Entropy-Production (SAGE-P): The Accounting in the Topological Domain Space (TDS) of the Econosphere, Sociosphere, and the Ecosphere. *Green Economy Reader* pp 99–137. Springer.
https://link.springer.com/chapter/10.1007/978-3-319-38919-6_6
- Health Knowledge. (2022). The impact of political, economic, socio-cultural, environmental and other external influences. HealthKnowledge.org.uk. <https://www.healthknowledge.org.uk/public-health-textbook/organisation-management/5b-understanding-ofs/assessing-impact-external-influences>
- Investopedia (2022). Environmental, Social, and Governance (ESG) Criteria. Investopedia.com.
<https://www.investopedia.com/terms/e/environmental-social-and-governance-esg-criteria.asp>
- Libraries. (2022). *Economic, Social, and Environmental Performance*. University of Minnesota.
<https://open.lib.umn.edu/principlesmanagement/chapter/1-6-economic-social-and-environmental-performance/>
- Kineman, John. (2013) <http://relationalscience.org/home>
- Klein, Louis; Wong, T S L; Huang, E C Yan (2012). The Yin and Yang of Changes: Systemic Efficacy in Change Management [Full Paper]. *Leadership through the Classics: Learning Management and Leadership from Ancient East and West Philosophy, International Conference on Leadership and Management in a Changing World: Lessons from Ancient East and West Philosophy* (pp .475-486 Part VII Chapter 32). www.leadershipclassics.org Athens, Greece, 12-14 June 2011, Also published in *Leadership through the Classics: Learning Management and Leadership from Ancient East and West Philosophy, Edited by: Gregory Prastacos, Fuming Wang and Klas Eric*

- Soderquist*. ISBN: 978-3-642-32444-4 (Print), 978-3-642-32445-1 (Online) Springer-Verlag Berlin Heidelberg 2012
- MIDGLEY Gerald. (2021). A systems theory of marginalization and its implications for systemic intervention. *Proceedings of the 65th Annual Meeting of the ISSS, Corvallis Oregon US*. ISSS. <https://www.issso.org/online-2021/>
- Palmer Kent D. (2004). The Foundations of General Schemas Theory – As an Extension to Systems Theory to Form a Mathematical and Philosophical Basis for Systems Engineering, USA. *Conference on System Engineering Research CSER 2004*. www.schematheory.net
- Pressbooks. (2022). The Social And Cultural Environment. Washington State University. <https://opentext.wsu.edu/cpim/chapter/3-2-the-social-and-cultural-environment/>
- SMITH William E. (2008). *The Creative Power - Transforming Ourselves, Our Organizations, and Our World*. ISBN: 978-0-415-39360-7. Routledge. <https://odii.com/>
- Uexküll Carlo Brentari, Jakob von Uexküll. (2015). *The Discovery of the Umwelt between Biosemiotics and Theoretical Biology*, (pp. 56). Springer.
- TURNLEY, Jessica Glicken. (2022). Social, Cultural, Economic Impact Assessments: A Literature Review. National Institute of Standards and Technology, US Department of Commerce. https://www.nist.gov/system/files/documents/2017/05/09/EPA_Social-Cultural-Economic-Impact-Assessments-2002.pdf
- UMPLEBY, Stuart. (1982). Definitions of Cybernetics. *America Society of Cybernetics*. <https://asc-cybernetics.org/definitions/>
- Wikipedia a. Environmental, social, and corporate governance. *Wikipedia*. https://en.wikipedia.org/wiki/Environmental,_social,_and_corporate_governance#History
- Wong, T S L; Huang, Yan 黃炎. (2008). THE QUEST FOR A GENERAL SYSTEM THEORY FOR ANY PARTICULAR PERSPECTIVE – does it ever exist or has it been there all the time?[Full paper] *Australia and New Zealand system Society's ANZSYS conference 2008*. Edith Cowan University (ECU), Perth, Western Australia, Australia, 1 -2 December 2008. Available at: http://www.ec-balance.org/edu/anzsys_observer.htm
- Wong, T S L; Huang, Yan 黃炎 (2015c) Systemic resolutions for the reductionistic conflicts – Harmony is of utmost importance [Abstract Presentation]. *Proceedings of the 59th Annual Meeting of the ISSS – 2015 Berlin, Germany*. ISSS
- Wong, T S L; Huang, Yan 黃炎. (2016a). Synthesising Traditional Chinese Medicine and Engineering through Systems Engineering: Traditional Chinese Medicine Engineering. [Full paper] 以系統工程學綜合中醫藥與工程學 – 中醫藥工程學. *Proceedings of the 60th Annual Meeting of the International Society for the Systems Sciences (ISSS)*, Vol 1, No 1 (2016), Boulder, US. ISSN: 1999-6918. <http://www.yinyangbalance.asia/blog/?p=2191>
- WONG. (2018). Systems Thinking : unlocking the myth of Tree of Life. Attempts in co-relating the theory of Tree of Life, Taichi Yin-Yang Five Elements Trinity $i\pm 1$ System, Traditional Chinese Medicine Differential Diagnosis-Cure Process, Schemas Theory, Relational Science, DSRP Theory, Five Aggregates of Human Mind System by Buddha, and Cognitive Process of Consciousness. [Abstract presentation]. *Proceedings of the 61th Annual Meeting of the ISSS, Corvallis Oregon US*. ISSS. <http://www.yinyangbalance.asia/blog/tree-of-life-taichi-yin-yang-five-elements-tcm-schemas/3026/>
- WONG. (2019a). Our Journey from Traditional Chinese Medicine to General Systems Theories TCM2GST – The Development of an Integral Ancient-Modern East-West Systems Thinking Platform 從中醫藥到一般系統論 – 構建一個融合古今中外系統思維的平臺. [Workshop].

AUTHOR 1, 2, OR 3 LAST NAME

- Proceedings of the 62th Annual Meeting of the ISSS. Corvallis Oregon US. ISSS*
<http://www.yinyangbalance.asia/blog/our-journey-from-traditional-chinese-medicine-to-general-systems-theories-the-development-of-integral-ancient-modern-east-west-systems-thinking/3258/>
- WONG. (2021a). What is Environment? a System? — Ancient-Modern East-West General Systems Theory perspective for the Unity in Diversity 什麼是環境？一個系統？ - 以古今中外廣義系統論的觀點來求同存異. [Abstract Presentation]. *Proceedings of the 65th Annual Meeting of the ISSS. Online. ISSS.*
http://www.yinyangbalance.asia/blog/environment_n_system/4418/
- Wong, T S L; Huang, Yan 黃炎 (2021b) The complexity and directions of Ancient-Modern East-West systems thinkings 探討古今中西系統思維的複合性與發展性. [Workshop]. *Proceedings of the 65th Annual Meeting of the ISSS. Online. ISSS.*
http://www.yinyangbalance.asia/blog/iss2021_pre-conference-workshop-complexity-n-directions-of-ancient-modern-east-west-systems-thinkings/4415/
- Wong, T S L; Huang, Yan 黃炎 (2021c) Active and Healthy Systemic Ageing – how to fail gracefully systemically 活躍及健康老齡化 – 怎樣優雅地衰敗. [Workshop]. *Proceedings of the 65th Annual Meeting of the ISSS. Online. ISSS.* <http://www.yinyangbalance.asia/blog/active-and-healthy-systemic-ageing/4462/>
- ZUO MeiYun 左美云. (2018). Wise Elderly Care: Connotation and Pattern 智慧养老：内涵与模式. Tsinghua University publishing house co., ltd清华大学出版社 ISBN9787302509080. pp286
Ch9.5Wise Elderly Care and Blockchain Elderly Care 9.5智慧养老与区块链养老286
<https://baike.baidu.com/item/%E6%99%BA%E6%85%A7%E5%85%BB%E8%80%81%E5%BC%9A%E5%86%85%E6%B6%B5%E4%B8%8E%E6%A8%A1%E5%BC%8F>