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# BIOCOMPLEXITY, BIOETHICS AND INTEGRATION

生命複雜性、生命倫理與整合

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**BIOCOMPLEXITY, BIOETHICS  
AND INTEGRATION  
Hans-Martin Sass<sup>2</sup>**

**ABSTRACT**

No individual bios or species bios can live independently. The 8 C's (communication and cooperation, competence and competition, contemplation and communication, compassion and cultivation), are present in all bios. They define in their specific human settings us as individuals and our networks, including state and non-state bios in religions and corporations. We humans are not eusocial as ants and bees; thus, we have a species-specifically developed bio-ethics in religions and philosophies from the Vedic 'tat tvam asi' to Jesus' 'love your neighbor' and Fritz Jahr's 'bioethical imperative'. Bio-complex integrations provide happiness, health and long life for individuals and communities in geo-space and cyber-space.

**KEY WORDS**

adaptability, biocomplexity, bioethics, biocultural, biopolitical, integration, political body

**1. BIOS IS INTEGRATED, COMPLEX, AND ADAPABLE**

Bios is complex and it is integrated. The cells of my body are complex in their DNA, have a metabolism of their own and interact with other cells and organs; cells of blood, skin, liver, brain and other organs are different. I cannot live alone; I have a father and a mother, friends and foes, neighbors, colleagues, and other networks. I need the microbes in my intestine to co-digest foods and drinks for their and my health, happiness, and my and their good and long life.<sup>3</sup> Physics and astrophysics inform us about integrations, interactions, interferences among protons, atoms, molecules, planets, milky ways and multiverses.

Individual and collective bios displays a certain 'groupiness' expressed by species-specific and individual-specific degrees of the 8 C's capacities: 'communication and cooperation, competency and competition, contemplation and

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<sup>3</sup> My genetic heritage of active and dormant chromosomes comes from the interaction and recombination of my father's and my mother's DNA, but then modifies somewhat in epigenetic interaction with my mother's body and even after birth depending on the biotope. - My body has about 30 trillion cells and is closely integrated with roughly 100 trillion microbes, keeping each other alive; cf. Sam Kean: *The Zoo in you*, in Wall Street J, 04-19/20-2014, a review of N P Money: *The Amoeba in the Room*, Oxford U Press, M J Blaser: *Missing Microbes*, NY: Holt]. - The very personal genetic codes of my DNA and RNA integrate five different nucleobases ACGTU (adenine, cystine, guanine, thymine, uracil) and additional bases, which have been formed after my nucleoid acid chain has formed; I share these integrated and interacting bases with all forms of life, which actually differentiate bios from non-bios

calculation, compassion and cultivation'.<sup>4</sup> Biology as a narrowly defined science studies these 8 C's and their differentiations in individuals, species, and biotopes. But the world of bios is larger than traditional biology; it covers all complex adaptable systems (CAS) of natural and cultural biotopes, and of political and corporate bodies. Here is a definition of CAS, which does not come from traditional biology, but from social science and economic theory: 'Complex adaptive systems are often nested in broader systems. A population is a CAS nested in a natural ecosystem, which in itself is nested in the broader biological environment. A company is a CAS nested in a business ecosystem, which is nested in the broad societal environment. Complexity therefore exists at multiple levels, not just within the organizational boundaries; and at each level there is tension between what is good for an individual agent and what is good for the larger system.'<sup>5</sup>

The 64 hexagrams of the mythical Emperor-Dragon Fu Xi over 3000 years ago already describe these integrated complexities not just in nature but in individual humans, families, communities, society, ecosystems<sup>6</sup>. Confucius' slogan 'in harmony, different, not identical (君子和而不同) he er bu tong, Lin Yu 13:2'<sup>7</sup> describes a similar integrated and integrating bios, which hopefully succeeds in social harmony, also the 'e pluribus unum (one made out of many)' the motto of the first 13 states of the USA. Much earlier was the old Vedic wisdom 'tat tvam asi - this is also you', i.e. the dying or blooming flower, the tigress and her cubs, the snake, the suffering fellow-human, any other creature. The Tat Tvam Asi is not just a biological information, it also holds an essential bioethical message and request 'do not harm', or as the prayer of Adi Sankara holds: 'May all be happy, may all be free from disease; may all look for the good of others; may no one suffer'<sup>8</sup>. Buddhist reasoning, especially in the Mahayana tradition, has focused on 'the means-to and meanings-of liberating patterns of interdependence, based on the insight that relationality is ontologically primary and that relational dynamics are always open to significant

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<sup>4</sup> For the 8 C capacities of all bios see HM Sass; Cultures in Bioethics, Zürich 2016: 45-53.- Of course, the 8 c's represent themselves species-specific in different arrangements and representations, but even the most primitive one-cell archaea with no specific cell-skin or nucleus and minimal DNA can 'smell' and move towards foods, also 'tell' other archaea about the direction towards foods.- Protestant theologian Reinhold Niebuhr of Chicago once described the integration of 'person, community, god' as basic; I argue that neither of which will live and exist without the others; individual ants, foxes, wolves might have different interdependences; 'variatio delectat' said the old Romans; yes: diversity is enjoyable but also necessary for bios.

<sup>5</sup> Reeves M, Levin S, Ueda D: The Biology of Corporate Survival, in: Harvard Business Review 2016, 49; see also M Rothschild: Bionomics as Ecosystem, New York: Holt 1990.

<sup>6</sup> CF. HM Sass Biologies, Bioethics and Biopolitics in Integrated Biotopes, in: Formosan J Medical Humanities 2018, 19(1+2),pp. 12-18

<sup>7</sup> See Zhai XM Diversified and in Harmony, but not Identical, in: Asian Bioethics Review 2011, 3(1)31-35. – As bios is modifying itself in ongoing interaction and integration, trust plays an important role in cooperation and integration; cf. G Moellering: Reason, Routine, Reflexivity, Oxford: Elsevier 2006, discusses 'trust' as a dynamic element, not a static principle, essential for interaction and healthy integration of organizations internally and within their biotopes; similarly PP Li: Towards a multi-frame integration of trust as holistic and dynamic: Ambiguity redefined as a duality of diversity-in-unity, in: J Trust Research 1011, 1(2)133-138.

<sup>8</sup> Quoted by Kishore RR 1926-2016 Fritz Jahr's Bioethics. A global Discourse, ed Muzur A, Sass HM. Zuerich: Lit 2017:94

improvements'<sup>9</sup>. The European enlightened tradition of 'subsidiarity' holds 'that peace, respect for persons and other treasured values of a society rich in cultural and ethical values will all apart if individual freedom is not granted ... cross-cultural ethics is a visionary enterprise and a great mission, which will fail, if the dignity of fellow-human's conscience, their vulnerability, and the principles of communication-in-trust, cooperation-in-trust, discursivity and tolerance do not form the core principles'<sup>10</sup>. The father of modern bioethics, Pastor Fritz Jahr in Halle/Saale defined a 'Bioethical Imperative: Respect every living being as an end in itself and treat it, if possible, as such!'<sup>1112</sup>

## 2. INTEGRATIVE BIOLOGY OF POLITICAL BODIES

Aesop's fable of the organs rebelling against the 'lazy' belly stomach and stopping to feed him describes the biological and biopolitical integration of the body parts. Hobbes was one of the philosophers following the 'corpuscularianist school'<sup>13</sup> understanding chemical elements in interaction of alchemy; in 'De Cive' 1642 he quoted the Roman slogan 'homo homini lupus', one human is the wolf of the other'. Plants and trees, making up over 80% of the global biomass, do not limit themselves to one highly central brain as we and animals do, who simply can run away from threats. Some trees can live thousands of years in interaction and relative harmony with their biotope; they spread their capacities such as photosynthesis, and respiration throughout the entire body, interacting underground with microbes and other plants, recognizing and interacting above ground in competition with other bios. They are, describes neurobiologist Stefano Mancuso, 'the living representation of how stability and flexibility can be combined. Their modular, diffused construction is the epitome of modernity: a cooperative, shared structure without command centers, able to flexibly resist repeated catastrophic events without losing functionality and adopt very quickly to huge environmental changes. It is no coincidence, that the internet, the very symbol of modernity, is built like a root system. When it comes it robustness and flexibility, nothing can compete with plants. ... We would do well to bear this in mind when planning for our future as a species'<sup>14</sup>. Actually, dictatorships are highly centralized as

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<sup>9</sup> P D Hershock: Valuing Diversity. Buddhist Reflections on Realizing a more equitable global Future, New York: Sunny 2012:34; for integrative Buddhist biology see also David P. Barash: Buddhist Biology. Ancient Eastern Wisdom meets modern Western Science, Oxford U Press 2014.- Carolingian King Lothar (795-855) described the complex interaction and integration of individuals with their political and social biotope 'tempora mutantur and nos mutamur in in illis', times are changing and we change within them; similarly Greek philosopher Heraclites said 'you cannot go into the same river twice'.

<sup>10</sup> HM Sass Common Moral Principles and Cultural Diversities, in: Formosan J of Medical Humanities, 4(182) 2003, p. 19

<sup>11</sup> Fritz Jahr (1926) Essays in Bioethics 1924-1948, Zuerich 2013, p. 20f; cf. HM Sass: Bioethics and Biopolitics in Cultivating Bios and Biotopes, in: Darulfunun Ilahiyat. Istanbul University 2018, 29(2):167-179

<sup>12</sup> Jesus quotes the Jewish Prophet Micah when reducing the hundreds of rules and requirements in Judaic religion into the essential message 'respect God and love your neighbor as you love yourself'. Indeed, we find this essential message in all regions and religions despite their intellectual or revelational differences. Similarly, the Prophet Mohamed in a hadith said 'and when you hold all the requirements for Ramadan and other laws, but have no mercy with your brother, then Allah will have no merci with you!

<sup>13</sup> Cf. W. R. Newman: Atoms and Alchemy, U Chicago Press 2006.

<sup>14</sup> St Mancuso: The revolutionary Genius of Plants, New York: Simon & Schuster 2018, p. XI

Bosse's engraving of the Leviathan suggests. Just alike trees, states are integrated by local representations, on the county or city or state level with sometimes higher or lower levels of competence and/or corruption; some nations such as Switzerland, the USA and the FRG are 'federal republics', representing more a strong and well-integrated tree than a dictatorial man. Would it be acceptable to compare the photosynthesis from 'above', which keeps the metabolism of plants and trees alive and well, with the 'spiritual' light from above which keeps the physical and emotional metabolism of human individuals and collectives alive and well? Interesting is also the detailed comparison of the individual human body to the political body by the Muslim scholar Al-Farabi around 900 AD.<sup>15</sup>

E. O. Wilson defined sociobiology as 'the extension of population biology and evolutionary theory to social organizations'.<sup>16</sup> St Paul, probably well aware of Plato's comparison of the city with a body describes the diversity of a religious community and their interaction with Christ as 'the head of the body, the church'.<sup>17</sup> Political bodies, just as human and other bodies, have complex, integrated and interacting cells and organs. But we humans are not perfectly eusocial as the folks of ants and bees<sup>18, 19</sup>.

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<sup>15</sup> Al-Farabi: Selected Aphorisms, 2001, p.25:23: 'Both the city and the household have an analogy with the body of the human being. The body is composed of different parts ..., each doing a certain action, so that from all their actions they come together in mutual assistance to perfect the purpose of the human being's body. In the same way, both the city and the household are composed of different parts of a definite number ..., each performing on its own a certain action, so that from their actions they come together in mutual assistance to perfect the purpose of the city or the household'. For the Persian scholar Al-Farabi, who lived around 900 AD, see also the internet.

<sup>16</sup> E. A. Wilson: Sociobiology. The new Synthesis, Harvard U Press 1975.

<sup>17</sup> Colossian 1:18; cf. Corinthian 12:12ff 'For just as the body is one and has many members, and all the members of the body, though many, are one body, so it is with Christ... If the foot were to say, "Because I am not a hand, I do not belong to the body," that would not make it any less a part of the body. And if the ear were to say, "Because I am not an eye, I do not belong to the body," that would not make it any less a part of the body.... The eye cannot say to the hand, "I have no need of you," nor again the head to the feet, "I have no need of you."... That there may be no dissension within the body, but the members may have the same care for one another.... Now you are the [body of Christ](#) and individually members of it. For just as the body is one and has many members, and all the members of the body, though many, are one body, so it is with Christ... If the foot were to say, "Because I am not a hand, I do not belong to the body," that would not make it any less a part of the body. And if the ear were to say, "Because I am not an eye, I do not belong to the body," that would not make it any less a part of the body.... The eye cannot say to the hand, "I have no need of you," nor again the head to the feet, "I have no need of you."... That there may be no dissension within the body, but the members may have the same care for one another.... Now you are the [body of Christ](#) and individually members of it.

<sup>18</sup> Cox-Foster DL, Conlan S, Holmes EC et al 2007 A metagenomics Survey of Microbes in Honey Bee Colony Collapse Disorder, in: Science 312 (5848):283-287. – Recently it has been discussed that the interaction of termites cultivating their biotope and their social interaction might be copied in robotics, and by artificial intelligence in the military and elsewhere, cf. L. Margonelli: Underbug. An obsessive Tale of Termites and Technology. Scientific American: Farrer, Strauss & Giroux 2018.

<sup>19</sup> These eusocial folks never had experienced something alike the French Revolution or Lenin's or Mao's toppling of existing hierarchies; nor did they experiment with various forms of sociality such as dictatorships, anarchies, democracies, meritocracies in pure or mixed form following each other and being of different life time. As Aristotle described, meritocracies can

It was Hobbes 'Leviathan or the Matter, Former and Power of Common Wealth Ecclesiastical and Civil', 1651, which influenced political theory and praxis in Europe distrusting people and suggesting a strong dictatorship waving the sword in one hand and a ruler's crosier in the other, the political and social body consisting of people of different profession age and sex in front of a cultivated biotope of meadows, houses, machines, courts, castles and tanks.<sup>20</sup> He did not discuss benefits to health and harmony of political bodies based integrated, flexible and complex bodies of democracy as being stable strong like a good old tree. What photosynthesis does for plants, religious or other spiritual values of humans do for the metabolism of healthy social human bodies.

### 3.VARIATIONS AND MODIFICATIONS OF POLITICAL BODIES

Hegel described world history as progressively implementing individual liberty and healthy political bodies in a Eurocentric direction, guided by the 'cunning of reason' "World history travels from east to west; for Europe is the absolute end of history, just as Asia is the beginning."<sup>21</sup> Progress in history involves passions (Leidenschaften) and powerful people such as Hegel saw in Napoleon, who toppled the European monarchies riding through Jena as the 'world spirit on a horse'. But the Vienna Congress and the restitution of the ancient regimes were the result of Napoleon's wars, and a Napoleon Bonaparte crowned himself as Emperor of France. What good did the German Extermination Camps or the Japanese Rape of Nanjing do for the progress of liberty and freedom; Stalin's and Mao's cruel dictatorships and Pol Pot followed, and today we see tribal extinctions in Africa and elsewhere. The narrative of 'cunning of reason' may be good as a vision, but reality is different and as in all complex adaptable systems of individual and collective bios need permanent modification and adaption to protect and to further individual and collective bios. Humankind has made great progress in cultivating raw biotopes into cities and agricultures, inventing machines and internets of various kind. But we also use these new technologies to torture people by electricity rather than beating them with sticks and to steal via digital instruments rather than braking into houses, to make other countries military 'blind and deafen' and their social bodies sick by 'information dominance'.<sup>22</sup>

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deteriorate into nepotism, democracies into anarchies, monarchies into dictatorships. Just as my body has various different cells and organs, the political body needs bone structure, muscles, networks of blood and nerves. Being somewhat social alike wolves and cows, and more social than foxes and swans, we humans are gifted and burdened with the conflict between individual interest and group interest. Christine de Pizan, a lady writer at the Court of Charles V was the first who described 1407 in detailed anatomy and physiology of the biology of a Corps Politic; Christine de Pizan: Livre des Corps Politic 1407; cf F. Langdon Forham: The political Theory of Christine de Pizan, Burlington VT 2002; google: body politic.

<sup>20</sup> The 1651 edition in Hamburg had the impressive sketch by Abraham Bosse; cf HM Sass: Cultures in Bioethics, Zuerich 2016:209-250.

<sup>21</sup> Hegel; Vorlesungen zur Geschichte der Philosophie, Jubilaeumsausgabe, Bd. 11:63, cf also 11:45f, 151ff

<sup>22</sup> Cf HM Sass: Cultures in Bioethics, Zuerich 2016, pp.235-250. To cause an electric grid or other integrated systems to collapse or malfunction, one does not have to attack it directly, rather one can sneak into it via the suppliers of such systems such as was done via multiple contractors of those systems, cf. R. Smith, R. Barry: Russian Hack exposes weakness in US Power Grid, in: Wall Street J Jan 11, 2019 p A1, A9.

Health of social, and political bodies routinely is measured in economic terms by GNP 'Gross National Product', but that does not say anything about harmony, health and stability of the political body. King Jigme Singye Wangchuck of Bhutan, introduced at the young age of 27 years just after his coronation, the concept of GHP 'Gross Happiness Product' an index measuring issues of pride, coherence, satisfaction, knowledge, spirituality, individual emotional and physical health, harmony with the environment and balanced use of personal time, and of course a decent economic base without hunger and other basic needs satisfied.<sup>23</sup> The index includes eight specific pillars contributing to happiness: 'physical, mental and spiritual health; time-balance; social and community vitality; cultural vitality; education; living standards; good governance; ecological vitality'<sup>24</sup>. King Wangchuck would have agreed to John Lennon's insight: 'Love is the answer and you know that for sure. Love is a flower; you have got to let it grow'<sup>25</sup>. The 'gross happiness' product goes far beyond the Western bioethics expressed by Beauchamp and Childress in the interaction of 'non-maleficence, beneficence, justice, autonomy; it matches close Asian bioethical principles summarized by Tai as 'ahimsa or non-maleficence, compassion, respect, righteousness'<sup>26</sup>.

Czar Alexander provided expert diagnosis for a sickened political body; Hegel presented a philosophical vision, not a description of reality; Hobbes described a political body based on strong legal and policing powers; King Wangchuck's leadership wisdom describes and implements the most vital capacities, which make a political body and all its cells and organs healthy and happy, supported by synthesized 'heavenly' lights just as plants and trees do with photosynthesis.

#### **4. HEALTH AND HAPPINESS OF POLITICAL BODIES**

Given the 'incomplete', or better the 'species-and-culture specific' human biology, our social bodies and our individual self-understandings depend on our especially strong human competence for contemplation and calculation, i.e. finding messages, posts, commandments, rules in the cyberspaces of religions, narratives, books and

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<sup>23</sup> Policy Innovations, in: <http://www.policyinnovations.org/ideas/briefings/data/000098/>; Bhutan GNH, 11<sup>th</sup> Five-Year-Plan 2012-2018 'Self-Reliance and Inclusive Green Socioeconomic Development. GNH Foundation, XIX and 467 pp; in 2015 8.4% of the population were deeply happy, 35% extensively happy, 47% narrowly happy, 8.8% unhappy; this was a 1.8% improvement over the figures of 2010; cf Devine J, Hinks T, Naveed A 2017 Happiness in Bangladesh: The Role of Religion and Connectedness, in: J of Happiness Studies, 1-21 [<https://link.springer.com/article/10.1007/s10902-017-9939-x/fulltext.html>].

<sup>24</sup> It has been estimated that in economic terms business loses 350 billion US\$ every year due to unhappy workers; cf various wikipedia articles for more detailed information; The actual 2013-2018 plan of Bhutan details goals and estimates of cost for the support of infrastructure, communication, internet, schools, local communities, trade, environment, renewable resources, vulnerable populations, and the elderly.

<sup>25</sup> Is it this, what Stefano Mancuso prescribed when suggesting to shed our animalistic hubris and follow the wisdom of plants? Would the integrated stability and flexibility of a tree then better symbolize a political body than a human person or animal? Would photosynthesis in plants be comparable to the synthesizing and metabolizing heavenly (or perceived heavenly) powers in narratives, education, traditions, rebellions, religions and philosophies by us humans? - For the John Lennon quotes, see. the internet

<sup>26</sup> Michael Tai: The Way of Asian Bioethics, Princeton Publ (Taiwan) 2008, pp.180-193

traditions to be implemented in our individual and collective geospaces. Modern cyberspace networks our individual and social bodies more integrated and interdependent<sup>27</sup>; 500 and even 50 years ago small communities could survive on their own and individuals were multi-tasking; today I depend on electricity and internets of people and expert support and supply.<sup>28</sup> And it is artificial Emotional Intelligence which is progressing nowadays not only in devising sensitive teddy bears for demented fellow humans, but also for lonely singles such as ‘Love and Producer’ providing imaginary boyfriends for women in China.<sup>29</sup> Will new emotional cobots replace traditional lovemaking and intimacy similar to the replacement of some of my rationality by much better artificial algorithms and calculus? Will Crispr-Cas9 technologies replace traditional baby-making by a better production of improved individual and enhanced collective human bodies and spirits? Will in-vitro meat replace chicken farms and slather houses? Will traditional wars fought with guns and soldiers be replaced by permanent stages of sabotage, manipulations, falsifications, alterations of military hardware-and software, and of digital organs of non-state and state bodies?<sup>30 31</sup>.

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<sup>27</sup> CF HM Sass: The Impact of Tool Use Cultures on Ecosystems and Society, in: Journal for Artificial Intelligence, 4, 2019, pp.9-30

<sup>28</sup> We are not privy to the contemplative and calculative powers of other species; my dog barks once in while in his dreams, but I don’t know much about his cyberspace adventures and dependencies, if there are any. Religions have not always been supportive in building happy and healthy social bodies. They have encouraged groups and individuals to slaughter or torture fellow humans over such strange issues whether God is one-in-three or three-in- one. Religions also have encouraged monks and nuns to emigrate from their social community into orgasmic integration with imaginary saints, similar to fellow humans today addicted to cyberspace communication and cooperation in internet arcades while not meaningfully being integrated in their geospace. Facebook has 1.7 billion inhabitants, PR China ‘only’ 1.4 billion; the annual budget of Alibaba, Amazon or Tencent each is higher than that of 80% of nation states. The technologies and products of Artificial Intelligence are much superior to my own rational capacities, such as my 10\$ calculator does a much better job than I myself when calculating my taxes by yearend.

<sup>29</sup> Google ‘Love and Producer, cf also Jessie Li: Imaginary Boyfriends. Four of China’s biggest heartthrobs live on women’s cellphones, in: The Atlantic, Jan/Fer 2019:22 [describing the more or less intimate relationships of a single lady Ivy Deng with her imaginary boyfriends, a policeman, a scientist, a CEO and a pop star, he policeman calling her at bedtime and announcing to pick her up by motorbike the next morning to bring her to the job, but in real life he has no bike and is not a policeman, just a paid actor. – Could robots, constructed with learning-and interacting skills hurt people or even wipe out or enslave the entire humanity? Isaac Asimov has developed ‘Laws of Robots’, actually engineering requirements for humans to construct robots: ‘Law of Robots One “A robot may not injure a human being or, through inaction, allow a human being to come to harm’; Law of Robots Two: A robot must obey he orders given it by human beings, except when such orders would conflict with the First Law’. P. Lin: Would ‘deviant’ robots violate Asimov’s Law of Robots? in: Forbes, Oct 15,2018, asks whether sex robots performing BDSM services would violate Asimov’s laws and should not be allowed? google also Wikipedia ‘sex robots’, ‘teledildonics’.

<sup>30</sup> I mention six special threats to integrated social and political bodies in the 21th century: (1) Destruction or manipulation of our electric roots via natural or man-made EMP (Electric Magnetic Pulse), software manipulation in utilities, corporations, states; (2) biological risk via natural or man-made pandemics, antibiotic resistant microbes, disappearance of species (bees etc.) essential for health of integrated bios; (3) revolts and repressions by individual instigators and internet communities, by fake information from states and corporations; (4) loss of trust in not well understood complicated interactions of geo-worlds and cyber-worlds, manipulations





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by elites in states and non-states, resulting in withdraws into ‘safe’ localism and extremism; (5) risk of territorial mix-up: new cyberspace communities provide incentives and rewards which are not found in geospace; (6) loss of control, as individuals feel overpowered by complexities in economy, artificial intelligence, and complex and not well understood interactions; HM Sass: Cultures in Bioethics, Zuerich 2016, pp.205-246; cf also David Sanger: The perfect Weapon. War, Sabotage and Fear in the Cyber Age, New York: Crown 2018



## 5. STABILITY AND LONG LIFE OF POLITICAL BODIES

Humankind has, just alike a tree and all other bios, only this one geospace and we may destroy it technologically or lose it by cyberspace migration and relocation instead of enjoying and promoting good and stable complex adaptable integrations and interactions in cultivating health and happiness of individual and collective bodies, just like a good old tree with strong roots and successful photosynthesis. What can/should we do? We could follow the wisdom of John Lennon: ‘We’ve got this gift of love, but love is like a precious plant. You can’t just accept it and have it in the cupboard or just think it’s going to get on by itself. You have to keep watering it. You’re got to really look after it and nurture it’<sup>32</sup>. John Lennon’s advice comes close to the 2500 year old insight of Lao Zi: ‘Cultivate yourself and virtue will be real; cultivate the family and virtue will be proliferate; cultivate the village and virtue will grow; cultivate the

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<sup>32</sup> Cf the internet: John Lennon quotes

country and virtue will be abundant; cultivate the world and virtue will be everywhere'<sup>33</sup> I translate this Daoist wisdom for myself into the present moment of integrated realities in 21th century and say: 'Cultivate yourself and virtue and, bios and life will be real; cultivate family and networks and social bios will proliferate; cultivate geospace and cyberspace in communication and cooperation, competence and competition and health and happiness will be plentiful; cultivate global bodies in nature, culture, business, and politics and our integrated worlds will be strong, healthy and happy.' <sup>34</sup>. Following John Lennon's recommendation, we can combine Asinov's 'Law on Robotics' and Jahr's 'Bioethical Imperative' with Jesus' 'love your neighbor' in a Biocultural Imperative: 'Support direct human inter-action and common-sense as an end in itself and use robots and other artificial intelligence as tools only in stabilizing human cultures, enjoyable and open to the future'.<sup>35</sup>

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<sup>33</sup> Dao te Ching 54; cf. Hou Cai: *The Guodian Bamboo Slips Lao Zi*, Zuerich: Lit 2017: 91. -Confucian scholar Mencius once described in detail the complex interactions of individual bodies within social bodies: 'Between father and son, there should be affection; between ruler and minister there should be righteousness; between husband and wife there should be attention their different functions; between the young and the old, there should be a proper order; and between friends there should be faithfulness'<sup>33</sup>. Can we translate Mencius' wisdom into the complex interactions of geospace and cyberspace in the 21th century and request: 'Between partners on Alibaba and Amazon platforms there should be mutual respect; between internet friends on social sites there should be fairness and trust; between colleagues in professional cyberspace sites there should be scientific integrity; between neighbors in old villages and in modern high-rise there should be neighborly solidarity, respect and mutual aid; between providers and users of various internet information sites there should be a joint fight against fake information, clear terminology for the lay users and reliable and unbiased and verifiable consultation by the providers; between experts and customers there should be adequate competence and compassion, between teacher and student there should be indoctrination-free and fact-based information and critical and value-based discourse; between different ethnic or religions, communities in society there should be mutual respect, mutual aid and tolerance; between peoples and machines there should be proper order; between sovereign states there should be respect for human and civil rights; between states and non-states, communities and corporations, and among each of us there should be cooperation and competition in protecting and cultivating our natural and cultural bios, our natural and cultivated environments and our social and cultural habitats for a good and healthy future of all integrated bios'.

<sup>34</sup> Cf HM Sass: *What is Bios and how to Protect and Promote its Cultivation*, in: *The International Symposium on Bioculturology: Guangdong Life Culture Association Conference 2014*, p. 8f

<sup>35</sup> CF HM Sass: *The Impact of Tool Use Cultures on Ecosystems and Society*, in: *Journal for Artificial Intelligence 4*, 2019, p.226