The Human Brain/Mind, Natural Limits of Social Cooperation, And Options for Sustaining Complex, Civilized Society

2019

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This essay relates an aspect of the human brain to a natural limitation in the scope of human intimate, cooperative social relations. In light of this situation, the essay then considers the options humanity has to increase the extent of its cooperative reach so as to be able to address the significant global challenges that humanity currently faces.

"Natural" Limits of Social Cooperation Among Humans

The human conscious mind arrives very late in the evolutionary process and sits "atop" the bulk of the mental capability that led to humanity's survival as one of the late primate species. The conscious mind correlates with the expansion of the prefrontal cortex and especially of the neocortex. It is this development that is associated with the origination of full symbolic language and the ability to manage social relations in larger groups – key requirements for complex society.

As a social scientist, it is particularly interesting to note the relation of the development of the size of the neocortex to social group size among primates. A smaller volume neocortex correlates with a group size of about 12 which is prevalent among grooming cliques of monkeys. An intermediate size/volume neocortex is in evidence among apes with group sizes of 20-30. The largest neocortex size/volume occurs in modern humans and corresponds to group sizes of about 150 members. This is an especially revealing number since it is about the average size of a small traditional aboriginal tribe. Interestingly, this 150 number also corresponds to the average number of combined family members and close friends in the networks of most individuals in complex societies. So, this social set persists into the modern context where we live in cities, states and nations of millions of people. Why? The key is the nature of these relationships. They are what are known as personal relations rather than impersonal relations, where impersonal relations are characteristic of the great majority of social relations in complex societies. Personal relations are based on knowing the individuals in one's network "in the round" – in many different roles and historically over time. In short, we know these individuals intimately. These are individuals that in general we can trust, that we can depend upon, who depend upon us in multiple ways, and with whom we can and often do cooperate. This is the fundamental set defined by full social cooperation.

On the social continuum from these 100-150 intimate relations to more distant friends to acquaintances to fellow citizens to foreigners to outright strangers to enemies, we see the ties between individuals and groups slowly weaken and disappear. And with this dissolution, our orientation to cooperate shrinks and our caution level and competitive stance rises. Importantly, this situation is not just a function of culture. Distinguishing between familiars and strangers is permanently built in from infancy at the unconscious level. Long before language and culture exercise their influence, babies smile at known faces but cry when presented with the faces of strangers. As adults, about 150 is the maximum number of individuals that exist in our social networks that fall into the highly familiar and very cooperative realm. When we transition into the higher numbers associated with the realm of impersonal relations, we are trending away from relations with whom we are naturally "built" to cooperate.

Humans have lived in bands and tribes where social relations are mostly personal and more or less fully cooperative for 96% of their history. This is the condition for which humans have evolved as reflected in the development of the volume/size of the neocortex of the human brain. Yes, traditionally humans can and do develop relations in larger groups – to larger tribes of 600+ and tribal federations of 2-3,000, but full cooperation becomes periodic and more tenuous in these larger group relations.

So, what happens in modern complex, civilized society, which has only been around for most humans for the last 2-3,000 years – no time at all from the evolutionary perspective? In some stable village settings, where the numbers are more "manageable" and resemble that of a tribe, individuals may relate on a mostly familiar basis. But in the cities, states and nations of multiple millions of people – to which we supposedly "belong," social relations are among individuals who are mostly strangers to one another, but who tolerate one another as "fellow citizens." We form most other social relations in complex society along some singular strand – as a doctor, a store clerk, a mechanic, a customer, a teacher, etc. And to the extent we are socially oriented, we may develop 2-400 additional relationships where we know these individuals in two or three respects as acquaintances and colleagues.

We are humans living within the vast, impersonal social relations of modern complex society, while we remain genetically/physiologically/mentally tuned to live most successfully in bands and tribes where personal relations are the norm and where cooperation is expected and easily offered among individuals. Works

like Leonard Mlodinow's Subliminal (2012) reveal the extent to which our primal unconscious is geared in a great many ways to operate most productively in this highly personal, small group context, and how it often constitutes an impediment to achieving cooperation at the much grander impersonal social scales that pertain in complex society.

Options for Promoting Cooperation and Sustaining Complex Society

Is it realistic to expect our conscious mind together with the input of culture to be able to impose the rational process and social goals for global level cooperation on the rest of our being and society when this much older and significantly more established mind/self is not built to support this process and these goals? Complex, civilized society is just an experiment at the very tip of human development that remains in the initial phase of being tested for its viability. The development of this complex social condition and the technological progress that science has been achieving within this social setting is indeed impressive. But is it sustainable given the built in social limitations of who we fundamentally are as homo sapiens?

At the present time [2019] and under current mental and cultural conditions, I would offer six to one odds that "No" is the correct answer to this question. So, if there is no significant change in this current situation in a rather rapid time frame, in my estimation the "prognosis" for civilized humanity by 2050 to 3000 is dire indeed. Are there any really viable options?

Technological Fix.
The assumption here is that the practical application of scientific discoveries [technology] supported by private enterprise and national governments can offer solutions to address/resolve our current major challenges. This may be possible for many issues: energy and food needs, cyber and satellite security, population control, climate change, pandemics, etc. But, will these technological fixes arise for everyone and in a timely manner, and what potential do they offer for resolving the challenges of potential nuclear and biological holocaust? As more and more nations of the world gain nuclear capability, and as the potential development of highly destructive biological agents advances, are there any technological solutions? As long as humans in nationally structured complex societies remain fundamentally oriented more strongly to competition than cooperation, it seems that technological advancement may offer both "solutions" to some issues while at the same time it cannot address others and may even open doors to additional global level problems on other matters.

Biological Fix.
Humanity is on the cusp of full fledged genetic engineering offering the possibility of determining the course of the specie's evolution both mentally and physiologically. So, can we "engineer" our way to a cooperative condition for humanity – along with the many other "desirable" traits and capabilities that we might wish to see implemented? Again, this option sounds good, but how do we responsibly deal with the vast humanity that is "left behind?" And who has access to and who determines and implements this developmental process? Ethical concerns abound. And what is to stop this process from becoming competitive in itself – with American, Russian, Chinese, Japanese, European versions of this newly constructed super human race? Do we just end up with competition/warfare among these differently "evolved" human groups? And, how do we determine what the ongoing evolution looks like for these super evolved humans, especially when they gain full "self" determination?

Android Fix.
All the same issues arise in this option as for the Biological Fix, plus sustaining the electro-mechanical challenges!

Earth Escape Fix.
We can design select androids or super evolved humans to escape what may become an uninhabitable Earth and settle planets and moons elsewhere first in our solar system and then in other solar systems of our galaxy. Sounds good, but again what evolved humans/androids to be developed by whom are selected to pursue this option? Are we just buying time by projecting our underlying challenges on Earth into space? And if we design these super humans to be fully cooperative, do they end up having to compete first among themselves and later if and when they encounter other predatory species? Is there a built in competitive-cooperative "switch" that can be activated, and by whom, under what circumstances? Is there time for this option to even mature to the point of successful implementation before our current challenges overwhelm humanity?

Energetic/Non-Physical Fix.
Can humans evolve as an immaterial, energetic species leaving behind all of the problems/limitations of having to provide for material physicality? If so, this fix is akin to the contention that eventually individual minds can be downloaded to an electronic form and "stored" in the "cloud" – assuming that the mind is the human being. Non-dualists, spiritualists, and religious groups that believe that the soul is the only significant aspect of the human being are allied with this

camp, focusing on the subjective as the exclusive zone of existence. In a fully energetic form, humans have no physical needs to support, and the basis for competition seems to disappear. In this state, Being becomes focal rather than Doing. There is participation, but motivation to "do" is irrelevant? And there is a crux issue: as an exclusively energetic species, how are separate identities/ entities retained/maintained at any level? Energy is not discrete; it is infinitely connecting as a field phenomenon. Are humans "adrift" in this extreme state of interconnected "existence?" In this fix, it is challenging to even imagine what constitutes life, or a life, or multiple lives, or "social" relations among lives.

No doubt there are other fixes that can be suggested. On the surface, all of these "fixes" initially seem to offer "answers." But on closer examination, significant ongoing problems/questions emerge for all of them.

Considering who we are as modern humans living in the condition of complex society, it seems most likely that we will eventually explore and try out all of the above options – if we have the time. And, for all but the non-physical fix, these optional versions of humanity will have to sort themselves out in an ongoing competitive arena – just as is and has been the case with all other species. As desirable and as necessary as cooperation seems to be, when we postulate any physical entity based version of humanity, we just cannot avoid competition constantly arising as a major driving/defining force. It seems that competition is an inherent component in any form of material existence for humans.

Social/Cultural Fix.

As we discover obstacles in all of the "other" potential fixes, we return to consider what humans can do from within complex society itself to promote the greatly expanded level of cooperation needed if we are to successfully address our major global challenges. A potential answer includes at least twelve components, many of which are themselves complex and difficult to achieve:

1) **Create a Global Government**. First and foremost and most difficult, humans must make the shift to the next and most inclusive level of societal and governmental integration. The nations of the world must come together, commit to, and fully support a global government that is empowered to develop, implement, direct and oversee the rest of the actions identified in this list. This global government must be constructed to be truly fair and fully representative, to coordinate and provide direction to national governments, to encourage increased connections and respect across different groups at all scales, to reduce competitive tensions among all groups, and to conduct mandated

arbitration and legal dispute resolution between and among any and all contesting parties. This can be a federally structured government allowing nations considerable autonomy beneath their required global level commitment.

Humanity cannot achieve the needed level of integration/cooperation needed without making this essential move! If we humans continue to just debate the internal directions of our separate and competitively oriented state and national governments, we will never get to the level of coordination necessary to address our global challenges – in a timely manner, before catastrophic consequences emerge. In our development to the current condition of complex society, and as difficult as it has been in light of our genetic constitution, humans have managed to move through the sequence of increasingly comprehensive social structures: from bands to tribes to chiefdomships to city states to nation states to nations to federations of nations. Humanity must make the shift to the truly global level of structural coordination.

Clearly a fully integrated global government and societal condition will not emerge all at one time; it will probably move through phases to address the other elements identified in the list below. Integration will likely proceed from a preliminary phase in which the developed nations rapidly come together and accept that while they have achieved significant progress intellectually, technologically and in terms of their standard of living, they have simultaneously ignored both the huge negative impact of their exploitative activities on the ecology of the planet and the inequality of the distribution of benefits to humanity. These developed nations can then construct, implement and model a comprehensive plan to achieve true resource sustainability with equal access across all of humanity while preserving humanity's ability to make "progress." As this preliminary phase is being implemented, the process of creating a truly global government for all of humanity can be pursued through its own phases: most likely beginning with a political, judicial and military integration phase to be followed by phases to address the multiple issues in the list below. Achieving an integrated global human society will be extraordinarily difficult, but the experimental period in exploring this development first with the League of Nations and then with the United Nations is now over. Humanity either recognizes the potential peril of the situation it is now in and begins the process of developing a real global government, or it may put itself at risk of survival.

2) **Sustainable Economy**. Currently, what has become the capitalist oriented world economy is devoted to the principle of an ever expanding condition with both corporations and nations taking on enormous associated debt which they expect to "outgrow." This is not sustainable for several reasons, not the least of which are the limits of natural resources and the associated detrimental

environmental and ecological consequences. Corporations and the nations of the world must move to a sustainable economy – the balanced condition that pertained for all of human history until the advent of complex society itself.

3) **Population Reduction**. Currently with 7.7 billion plus humans, there are just too many of us on the planet placing too great a pressure on the planet's resources. And as the very large, less developed areas of the world come to expect a standard of living equal to that of the developed countries, the resource demand from the current population will increase enormously. This situation does not factor in the effects of climate change or the expected 2 billion population increase that is anticipated in the next century. A total human population of 5 billion is probably excessive, but it represents the initial target for humanity if we are to begin to live within the actual resource limits of the planet.

4) **Sustainable Environment, Ecology, and Natural Resource Use.** In the rush of individuals, cities, states and nations to "progress" and achieve an ever increasing standard of living, corporations and developed nations especially have excessively exploited and abused the resources of the planet. Species extinction has reached an alarming level, air and water pollution is pervasive, and the potentially catastrophic effects of human caused climate change are recognized worldwide by climate experts. At the global level, natural resources cannot come close to supporting the current level of use of developed nations – especially the U.S. Achieving real and timely solutions for these complex ecological and natural resource issues can only be achieved through a fully coordinated effort led by an empowered global government.

5) **Restrict Militaries, Armed Citizens and Violence in Media and Sports**. With required arbitration of all conflicts among groups and nations as an essential function of a global government, the need for countries to support separate militaries for purposes of defense is essentially eliminated. The huge economic, technological, and natural resources that these enterprises now consume can and must be redirected to address other critical human needs. In this scenario, the potential threat of catastrophic nuclear and biological warfare will all but disappear. While conflicts are inevitable among nations, a strong global government can stop tensions from escalating into violent contests. With this overall shift to a more peacefully defined world, no justification remains for citizens to be armed with weapons for "self" protection or for media and sports to offer or encourage excessive displays of violent behavior.

6) **Redirect Science and Technology**. Science and technology must be oriented to providing solutions to our global challenges without being viewed as offering a panacea. The results of these efforts must be available to all parties and not restricted by national secrecy or private/corporate patents. Human genetic engineering must be limited to eliminating weaknesses with all explorations of genetic "improvements" conducted exclusively under global government control, and very carefully supervised. Human genetic engineering that looks to "improvement" must be focused on increasing the human predisposition to cooperate across larger groups, and not on increasing individual human abilities that are likely to be expressed in competitive behavior.

7) **Corporations and State and National Entities Must Be More Responsible to the Larger Community and Ecology.** Presently, corporations are legally defined in most states and nations as for-profit enterprises designed to exclusively benefit their shareholders/investors. This definition must be altered to require all corporations to include in their mandates an evaluation of the impacts of their activities on their employees, on their communities at all levels, and on the local and global ecology. State and national governments should undergo the same process to justify their activities. In this regard, actions by all organizations in pursuit of self-interested goals should undergo careful review/examination at the appropriate governmental level.

8) **Reduce Inequality**. Inequality is usually thought of in terms of economic variables as it relates to the distribution of wealth among citizens. But equality/inequality is a much broader matter. Access to natural resources, to education, to health care, to security, to justice, to protection under the law, etc., are all areas of concern that often raise the issue of inequality. And then there is the basic zone of human rights. Equal rights with respect to ethnicity, race, religion, nationhood, sex/gender, age, class, etc. are critical in a just society. Equality on all of these matters is desirable so long as we respect at the same time the need to reward creativity, industry, and the level of contribution to the public good. Excessive personal, corporate, or national gain as well as various forms of populism that feed on divisive appeals across group boundaries are too often celebrated or tolerated rather than being exposed and condemned. Government at all levels must work to assure a generalized condition of equality. The difference between CEO compensation and the salary/wage of the average employee should not exceed a factor of 10-20 times. Global government can address this challenging inequality issue by affirming universal social values and providing direction and regulation where needed at lesser organizational levels.

9) **Promote Quality of Life, Not Longevity, and Giving Rather Than Taking.** As modern medicine and better nutrition improve the lives of more and more people, individuals are living longer in many areas of the world. While this may seem desirable, it is more important to promote the quality of these lives whatever their duration. Humans must insist that the activities of all individuals contribute to the common good and not just to personal well being. Governments and organizations at all levels need to celebrate the givers rather than the takers and recognize the quality of lives in these terms. It is the givers who are the nurturers and cooperators while the takers are most often the self-interested competitors. All humans inherently have both of these inclinations, but culture can insist that they must be at least balanced if not favoring the giver-cooperator side as humanity struggles to coordinate at the global level. Success can no longer be allowed to be measured in terms of acquisition and accumulation, whether at the individual, corporate, or national level.

10) **Assure Access to Work**. With the advent and prospects of robotics combined with artificial intelligence and big data, more and more jobs in the commercial sector have been "lost" or have come under the threat of loss in more and more fields at higher and higher levels of occupational competency. At the same time the population is growing. Human self-esteem is tied to a sense of being productive; leisure is desirable only secondarily. In this context, the government is going to become more and more important in identifying and assigning meaningful work to its citizens as opportunities in commercial and industrial areas shrink. More and more jobs will need to be found in the former community benefit and philanthropy zones. Dealing creatively with this issue is important, and it will be challenging! In this regard, we may well be looking at the need to guarantee a minimal annual income so long as individuals contribute to the common good <u>to the best of their abilities</u> – no free rides, no "retirement"! There are a great many ways for elders to continue to participate and contribute! Children and adolescents need to be in ongoing association with older adults.

11) **Promote Universal Education and a Common Worldview**. Universal education is a foundational need in complex society. Every human has a vested interest in seeing the goals of this education achieved; and so, this education must be fully supported at all levels by society. But, agreeing upon the components [curriculum] of this universal education will be one of humanity's greatest global level challenges. Humanity must understand that it cannot get to commitment to a fully integrated and empowered global government without agreeing on what constitutes this education!

In complex society, the first stage of education begins with learning basic skills: physical movement, interacting with others, reading, writing, mathematics, computer manipulation, and relating sustainably to the surrounding ecology. As these skills grow, stage two arises – incorporating basic knowledge [the essential facts] in a number of areas. The criteria for distinguishing fact from opinion is learned in this phase. As skills and knowledge grow, step three emerges – the crucial step of developing and learning to apply the extremely important abilities to think logically and to intuit insightfully. Critical thinking [reason, rationality] is the mental process for evaluating/analyzing objective, material reality. Intuiting [insight, inspiration] is the synthesizing tool for exploring and understanding the connected realm of subjective, immaterial reality. For most human tasks, both of these mental processes are acting in concert or in rapidly alternating phases. The fourth educational step is to apply skills, knowledge, and sophisticated mental processes to particular areas of concern and interest so as to advance knowledge and to responsibly improve the quality of human life. The scientific process emerges in this final step.

Unfortunately, the cultures in different complex societies place different emphasis on both these educational steps and the information offered within them which results in their promoting very different worldviews. These diverse worldviews are represented by the extremes of secular materialism vs. religious fundamentalism, or hyper individualism vs. super communalism, or authoritarianism vs. democracy. The consequence of these fundamental differences is a huge impediment to these societies cooperating and agreeing to support a global government with the power to oversee universal education. But without universal education to support a common worldview, there is no ongoing basis to sustain a unified global government with the ability to address global human challenges.

12) **Manage Information Responsibly.** In the age of the Internet and social media, humans are awash in access to information and to unregulated sources of information. The problem is in determining what of this flood of information is valid and reliable. And with no adequate constraints, it becomes relatively easy for individual, state, and national “actors” with sophisticated computing capabilities to manipulate this information stream to achieve illegitimate results. In this context, it is essential to develop tools to evaluate all public information for the validity and reliability of its visual and verbal content. This is a difficult task at the global level, but a global government cannot be effective if it does not create an independent agency to do it. All information that is disseminated through public channels can be rated on a 1 – 10 scale for its reliability and the authority of its sources so the public can avoid being influenced by fake news,

propaganda, and opinion masquerading as established fact. This evaluative tool can be very important in controlling communications in all media forms that attempt to foster divisiveness by making unsubstantiated claims with respect to the character, motivations or actions of one group with respect to another.

Conclusion

Yes, the 12 elements above constitute a Grand List – idealistic from a current perspective! But, in fact, attending to the equivalent of all of these issues is what humans do when they operate within their networks of personal relations – especially when they live in a mutual territory and share in ongoing everyday activities as is the case for bands and tribes. If humans want a global version of complex society that exhibits these same characteristics, they have to commit to cooperation at this same level. So, if our fix must come from within existing complex society, anything short of making the comprehensive effort identified in the list above will leave humanity at risk of not cooperating at the level required.

In a fix/solution coming from within complex society, #1 – Create a Global Government in the list above is foundational. Without it, making piecemeal progress on many of the other elements will not add up to a solution, especially a timely solution!! If we are to continue to overcome our natural limitations on cooperation, humanity's next move must be to a fully empowered global government that completely integrates and fairly represents all nations.

Most of humanity's current major challenges are global in nature [climate change, pandemics, nuclear and biological holocaust, cyber conflict, excessive population, generalized inequality, etc.]. So, the time has come for nations to re-conceive themselves as if they are states within an international global level government. And in this regard, a fractured, veto entangled, and mostly voluntary United Nations in its current formulation is totally inadequate. On the other hand, the United Nations can be entirely reconstituted to become the Government of GAIA responsibly composed of representatives from all nations. Unfortunately, history demonstrates that nations only seriously entertain overall global integration after experiencing catastrophic global events [WWI,WWII]. Acting in anticipation of such events [eg. nuclear war, climate change] has not happened and so, shamefully, seems unlikely to occur. But, we can at least announce the paramount need for this goal to be pursued!

Making real and timely progress on all other issues before humanity rests on humanity's ability to make this shift to a fully empowered global government!

Unfortunately, humanity has not even begun to seriously consider it. As individually important as they are, currently humans are consumed by the many symptoms related to the issues in the above list as they impact states and nations: migration/refugees, conservative populism/isolationism, severe droughts and storms, frustrated middle class, religious fundamentalism, authoritarianism, etc. The ability to actually address all of these important symptoms by focusing on the really Big Requirement of creating a global government is at this point just a shadow floating in the background. But, if complex society – upon which civilization depends – is to sustain, it seems that our only real choice is to continue to overcome our natural limitations to cooperate, leave competitive nationalism behind, and "Go Global"!

In the 1970s and early 1980s, I began putting together the framework for an overall conception of society and reality, which I call "Dynamic Humanism." This conception is encompassing and constitutes what amounts to a worldview, which in its most recent form appears as the document Dynamic Humanism: Balancing Complementary Human Perspectives and Mental Faculties, Science and Spirituality, Intellect and Intuition, 2007. In this overall conception the dynamic opposition of competition versus cooperation is an important component, and it receives a good deal of consideration in much of my writing since I completed that work. Dynamic Humanism taken together with this essay and the other essays that appear under the "Cooperation" subheading under the "Topics" section on my website, www.dynamic-humanism.com] constitute the totality of my thoughts to date on the critical need to increase cooperation and to reduce the level of competition in modern complex societies. Different significant variables are focal in different essays. Taken together, these materials may amount to a larger study: "On Cooperation."