The International Society for the Systems Sciences: Contributions to the Future World

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Abstract

The International Society for the System Sciences (ISSS) is a microcosm model of the global human social system (HSS, our species). The unprecedented crisis presented by the COVID-19 pandemic is causing major disruptions to the 'normal' processes and has triggered a spasm of self-reflection and self-realization that what had been thought of as "the normal" was not sustainable, both for the larger HSS and for the ISSS. Both the greater HSS and the ISSS have had their capacity for resilience in the face of the crisis challenged. Under the proposition that complex adaptive systems are resilient, and evolvable systems are sustainable, members of the ISSS have set out to use our knowledge of systems theory and practice to renew the society, to make it more systemic in structure and function. We are proposing to create a new core working group that will find purpose in doing a dual level deep systems analysis of the ISSS itself and then, using the insights gained in that process, turn to doing the same for the HSS. Deep systems analysis can expose the dysfunctions in subsystems as well as identify missing subsystems and requisite communications. All societies share certain systemic properties since all involve the interactions among groups of human actors. And all long-term sustainable systems have been shown to operate in specific fashions to be self-sustaining (autopoietic) and produce products or services to the larger embedding supra-system. For the HSS this is the Earth as a whole. For the ISSS this is the HSS. Key questions that the ISSS needs to consider as context for its place in the HSS: What product(s)/service(s) should the HSS produce that would benefit the rest of our planet? How should the HSS be structured/organized? The turning that question on the ISSS, what products/services should the ISSS produce that would benefit the HSS. Since the knowledge that is represented within the ISSS pool of expertise is system knowledge, if follows that how the HSS should be structured/organized after the pandemic crisis is in the rearview mirror could be answered by deep systems analysis of what the HSS should be in the future. Key questions to be addressed in this report: With all humbleness how should the ISSS and system societies in general come together to effectively meet the purpose of system science? Indeed, should they and to what purpose? What product(s)/service(s) would the enterprise of system science produce that would benefit the HSS and broader, life on this planet? We report on the plan and the effort undertaken to find answers to these and related questions. This is part of our mission to bring greater unity to the field of systems science and reach out to the wider field of systems thinkers; it is an invitation to participate.

Keywords: Resilience, systems science, systems analysis, organization viability, human social system

Introduction

This paper describes a phenomenon of a society becoming self-aware and self-reflective leading to a realization of a need for regeneration of its original purpose but reflecting the new conditions of the larger world society it is meant to serve. Daniel Christian Wahl (2016) speaks to the need for societies to embody regenerative capacity:

"A regenerative human culture is healthy, resilient and adaptable; it cares for the planet and it cares for life in the awareness that this is the most effective way to create a thriving future for all of humanity. The concept of resilience is closely related to health, as it describes the ability to recover basis vital functions and bounce back from any kind of temporary breakdown or crisis. When we aim for sustainability from a systemic perspective, we are trying to sustain the pattern that connects and strengthens the whole system. Sustainability is first and foremost about systemic health and resilience at different scales, from local to regional to global." (p43).

We, the ISSS, see this as reflective of what seems to be going on around the world today in light of the COVID-19 pandemic. As economies everywhere are suffering as a result of shut-downs many are recognizing the full breadth of how many aspects of the human social system (HSS) have become strongly interdependent to the point of being brittle and un-adaptive under the radically changed conditions. As with society writ large, the ISSS, responded with the question: what can we systems scientists, systems practitioners, and systems engineers do to improve the resilience of our HSS capability to pandemics and knock-on effects? In a series of on-line meetings with a group of members participating we had already been exploring the structure and function of the ISSS and how it serves the larger global society. The pandemic brought into sharp focus that the society had not been doing so and could not, likely, find an answer to the question owing to what this group perceived as its lack of systemicity. Through this process one could say that the ISSS had become self-conscious and self-aware of its shortcomings.

The listed authors along with many other members of the ISSS have conceived of a self-similar process to use systems science to explore how a global HSS could be designed such as to achieve the goals of sustainability (longevity and persistence), resilience (adaptability when the environment changes), and supportive of psychological well-being of its human members (Wallerstein, 2004; Mobus, 2017, 2018). It will accomplish this by starting with itself – it will apply the same intentions to its own organization. "Physician, heal thyself[1]."

The work reported here is in its early stages but several parallel developments will help accelerate the process. Many of the pieces of the puzzle are already in place so that a focus on organizing the effort to assemble and integrate the parts.

After describing a brief history of the ISSS we will describe its current organization and functioning, showing how it has lapsed into with respect to its once understood mission. We will then describe the process of analysis we propose to apply in order to revitalize the society. This will be the same analysis that can be applied to the HSS. We will then describe the

[1] Biblical: Luke 4:23 (King James Version)

proposal to do a *deep systems analysis* on the ISSS itself and the nature of a proposed reorganization that will fulfill the society's purpose.

A Brief History of the ISSS

Origin Story

The text below has been transcribed from the ISSS website.

In December of 1954, under the auspices of the American Association for the Advancement of Science (AAAS), a meeting of some seventy people was held in Berkeley to form a society for the exploration and development of the ideas that von Bertalanffy, Boulding, Rapoport, and Gerard had come together to discuss earlier that year in Palo Alto at the Center for Advanced Study in the Behavioral Sciences (a newly established Ford Foundation enterprise).

The International Society for the Systems Sciences (ISSS) is among the first and oldest organizations devoted to interdisciplinary inquiry into the nature of complex systems, and remains perhaps the most broadly inclusive. The Society was initially conceived in 1954 at the Stanford Center for Advanced Study in the Behavioral Sciences by Ludwig von Bertalanffy, Kenneth Boulding, Ralph Gerard, and Anatol Rapoport. In collaboration with James Grier Miller, it was formally established as an affiliate of the American Association for the Advancement of Science in 1956. Originally founded as the Society for General Systems Research, the society adopted its current name in 1988 to reflect its broadening scope.

The Society was originally formed as the Society for the Advancement of General Systems Theory, which was then changed to the Society for General Systems Research in the fall of 1955. The name was changed again in 1986 to the International Society for General Systems Research, and then finally, in 1988, to the International Society for the Systems Sciences.

The initial purpose of the society was "to encourage the development of theoretical systems which are applicable to more than one of the traditional departments of knowledge," with the following principal aims:

to investigate the isomorphy of concepts, laws, and models in various fields, and to help in useful transfers from one field to another;

to encourage the development of adequate theoretical models in areas which lack them;

to eliminate the duplication of theoretical efforts in different fields; and

to promote the unity of science through improving the communication among specialists.

In the intervening years, the ISSS has expanded its scope beyond purely theoretical and technical considerations to include the practical application of systems methodologies to problem solving. Even more importantly, it has provided a forum where scholars and practitioners from across the disciplinary spectrum, representing academic, business, government, and non-profit communities, can come together to share ideas and learn from one another.

Over the Years

One of the central organizing features of the ISSS that emerged was to establish a set of Special Integration Groups (unaptly referred to as SIGs, even though they were explicitly not supposed to be *special interest* groups). The intent was that these groups would be the foci for applying

systems science to areas of particular interest to their participants. SIGs have been formed to cover the nature of systems science itself, but also to consider applications of systems science and systems thinking[1]. Over the years from their inception the SIGs have tended to evolve and internalize, the groups became more like subject silos, each using its own definition of systems concepts such as complexity or hierarchy, to their narrower field of interest. As a result, the cross-communications and integration of systems ideas that was defined to be their purpose has not substantially been realized.

The ISSS holds an annual conference, each year in a different part of the world, where the SIGs organize paper/presentation sessions[2]. This has been beneficial in terms of the social aspects of having a "community of interest". But it became somewhat opaque as to how 'rigorous' these presentations or papers were. There were no clear guidelines for acceptance (only abstracts were being submitted). Each SIG adopted its own criteria for accepting the abstracts as well as the way it is presented at meetings. Some SIGs organize traditional paper presentation sessions, but others use it to explore ideas after each presenter briefly describes her/his ideas. In part the problem may have been due to the lack of systems science as a recognized academic subject onto itself, except in isolated cases. Participants were not necessarily associated with a rigorous academic tradition so there was no 'model' that was being followed. There were, of course, academicians from established fields with track records in academic publication who did attempt to follow the traditions. Every year a few papers presented at the conference were selected for publication in a special issue of the associated journal, *Systems Research and Behavioral Science* (Wiley On-line[3]) based largely on how well the papers supported the 'theme' of the conference. Even so, these papers are not unified in any sense of, say, how they show the expression of larger systems science principles within a coherent framework for shared orientation.

Some cross-fertilization between SIGs does occur in that a member is free to attend any one of the SIG presentation meetings and engage in informal conversations with members of the SIG. But there was never any attempt to capture and record these conversations, nor analyze their content as candidates for integration.

To Today

We are left with a concern today. The ISSS has been losing it vitality, passive in response to what is now obvious in terms of changing circumstances, continuing along fragmentary paths in more or less open loop mode. It does not covey a sense of unified purpose or a vision and strategy of how it will pursue and achieve its purpose. Indeed, what is the purpose of the ISSS; what is its place in the HSS, what is its strategy to achieve its purpose[4]? Questions like these have been periodically raised over the years but answers have not surfaced. Up until recently, the only activity that brought the membership together has been the annual conferences, and those are mainly devoted to SIG meetings. There did not appear to be any body, other than the Board of Directors (all volunteers), that examined these questions in an on-going process of

[1] A list of current SIGs can be found at the ISSS website: https://www.isss.org/special-integration-groups-sigs/, Accessed 6/23/2020.
[2] The 2020 conference, slated to be held in Cape Town South Africa in July, had to be cancelled, the first time this has happened in the history of the society.
[3] See https://onlinelibrary.wiley.com/journal/10991743a, accessed 5/27/2020.
[4] The ISSS has a stated purpose, or rather had a stated purpose but acknowledges on their website that the nature of that purpose has morphed from a systems theory-based research program to incorporate more practitioner-based applications. See the About page at: https://www.isss.org/about-isss/. Accessed 6/23/2020.

self-reflection. As long as the external environment of the ISSS remained essentially stable it could continue to operate in this manner. But that environment has indeed changed dramatically. The ISSS has woken up! How will the ISSS adapt, become resilient and rekindle the flame that the founders sparked?

Fragmentation

There is a natural tendency in all areas of knowledge to fragment into sub-topics and for specialists to become somewhat isolated from those working in other sub-topic areas. This is the case of discipline silos in academia, for example. So, it is not surprising that as the subject areas loosely coupled in the early days of general systems theory (e.g. cybernetics, hierarchy theory, and many others) produced their own bodies of knowledge, that they should begin to take on independent existences and, indeed, come to view their topics as the core of systemness. It is ironic that this should have happened to a field that originated in the ideas of conciliation of the sciences, wholeness of the idea of a system, and recognition of the interconnectedness of topical areas. Personalities and egos may have been involved and contributed to this over the years.

However, it may have evolved, today there are a number of related (in principle) societies globally that are devoted to specific aspects of a general systems framework. These include the aforementioned cybernetics, but also complexity theory, network theory, and system dynamics to name a few. Happily, it turns out that some members of these other societies are also members of the ISSS providing some communications bridges to hold the overarching subject of systemness together. Thus, there is an existing network of interconnections between these societies that counts as a strength of the community moving forward. Additionally, the International Federation for System Research (IFSR, https://ifsr.org/) is a formal aggregation of many of these systems-related organizations (a federation) to facilitate information sharing. Finally, the International Council on Systems Engineering (INCOSE, https://www.incose.org/) is the largest organization devoted to the development and furtherance of systems engineering in the world. The ISSS and INCOSE have been working in tandem to get a better definition of the systems sciences as the foundations of systems engineering principles and practices. They have a memorandum of understanding that allows members of either organization to participate in workshops directed toward this common effort.

So, even though the field seems to be fragmented and disparate, there are hopeful signs that some kind of reintegration is taking place.

On the other hand, within the systems community there remains major disagreements about what would constitute a general systems theory and even one could be possible! One major area of disagreement is over terminology (the lexicon of systems). Many researchers have independently discovered similar phenomena and assigned terms based on their own proclivities and histories. It often happens that when these researchers share findings, they use terminology that others do not understand. This remains a major hurdle to overcome if reintegration of the subject is to move ahead.

Nevertheless, the ISSS is uniquely positioned in the larger systems community to provide a nexus for reintegration of the various facets of the systems sciences. What is missing is an in-depth understanding of the ISSS organization as a complex system and a clear sense of the

purpose of the ISSS and, in fact, the purpose of the larger systems community with respect to the whole Earth.

Reflections on the Current Organization

As mentioned above, self-reflection questions about the organization have come up from time to time, but have not led to any kind of resolution. In part this may have been simply due to the way the organization conducts business. A once-a-year, five-day conference with little else going on except getting prepared for the next conference is not conducive to the kind of deep reflection that is necessary.

Prior to the 2019 conference held in Corvallis OR, the then president Peter Tuddenham had started an on-line discussion group to explore the nature and workings of the various SIGs. The intent was to have the SIG chairs present a short summary of what the SIG was, what the subject of interest was, and what sorts of results or products it produced. What had been bothering Peter and other members for some time is that, by the titles and short descriptions of the SIGs, it was hard to see any kind of pattern suggesting that there were crossover linkages and integration going on. From a high-level view the SIGs appeared to be insular. But the weekly meetings to discuss the SIGs didn't throw any real light on the issue. At the Corvallis meeting, Peter, along with Gary Smith and Jennifer Makar organized several group meetings to attempt to find relations between the SIGs that might be the basis for encouraging more cross-communications. There were a number of "patterns" suggested, but nothing that seemed actionable. They also conducted a preliminary review based on Stafford Beer's (1972) Viable System Model (VSM), asking the pointed question: Is the ISSS a viable system[1]? Some immediate findings seemed to suggest the answer was "probably not."

Subsequent to the Corvallis meeting the SIG discussion group continued to meet finishing off reviews of all the SIGs. At some point after, the regular discussions continued but began to focus on whether the SIG organization itself was the right one to foster the intended integration and production of systemic knowledge of systems. In short, the organization, or a subset of it, began reflecting on its own efficacy. That effort was timely. The onset of the COVID-19 pandemic was to thrust a major test of resilience on the organization and, indeed, the whole world.

Parallel Developments

What the Crisis Has Revealed about the ISSS

Over the last several years there has been a growing realization that the current form of the ISSS was not addressing finding systemic solutions to the growing existential threats to humanity and the Earth ecosystem (Ecos) even while dedicating annual conferences to themes related, such as the Anthropocene (Berlin, 2015[2]). It's not that some members were not involved in various aspects of these threats or applying systems thinking to solving some kinds of, for example, environmental problems. Many definitely were, and reporting their work at the annual conference. However, the ISSS itself was not organized to leverage these works, integrate their findings, and engage in a practical and influential way to address the global system.

[1] Viable meaning that it is fit for long-term sustainable and resilient life-cycle.
[2] See the Annual Meetings page at: https://www.isss.org/annual-meetings/, accessed 6/24/2020.

The COVID-19 pandemic brought these issues into sharp focus. A subgroup of the larger discussion group, the listed authors among them, formed a dedicated discussion focused on the future of humanity in the aftermath of the pandemic. We realized that the HSS is dysfunctional, possibly beyond repair, especially within its set of establish paradigms. Talk of returning to "normal" is delusional in light of the accumulating disruptions and the yet-to-be fully grasped impacts of global climate chaos, its related sea level rise, ocean acidification, and peak net fossil fuel energy just at the time when humanity will need substantial energy to do the work of mitigation and/or adaptation. Thus, we began a discussion about what could the ISSS do, not necessarily to 'solve' the pandemic problem, but rather, to prepare humanity for a transition to a more systemic design for the HSS. How could we apply our systems knowledge, resident in so many members and a rich history of systems science and practice to develop a roadmap for this transition, a transition toward sustainable development of systems knowledge and resilience?

A Book on the Theory and Methods for Deep Systems Analysis for Deep Understanding

For the last five years one of us (Mobus) had been working on a book that seeks to provide a unified framework for gaining a deep understanding of real-world systems, from particles to societies. It starts with chapters on a unified way to look at systems in general, the theory of systemness, and proceeds to develop a set of methods and descriptions of tools that would support those methods in doing a principled analysis of any system of interest. The intent was to provide scientists, practitioners, and engineers with a model framework for deep understanding and, in the case of the latter two audiences, designing whole functional systems. The book then addresses these methods and theories to large-scale complex systems to show how it would work. In the process of applying the methods to the study of the extant human social system – motivated by the impending needs to address the issues of the Anthropocene – the author uncovered some deeply disturbing aspects of the human social system (HSS) of the modern world that were very much linked to, and causally responsible for those issues. Many other thinkers and writers had noted similar problems (e.g. with capitalism and "free markets") and we know through works such as (Capra and Luisi, 2014), that these problems are all intertwined, related, and mutually causal. The outcome of a collective analysis (with examples provided in the text) led to the author considering the methods necessary to determine what an intentional system design for a sustainable, resilient, and psychically supportive social system might be like (Mobus, 2017, 2018).

Providing a Framework for Integration – the Complex, Adaptive, and Evolvable Systems Archetype Model

A central feature of the book (in progress) is the development of a generic or archetypical model of a complex, adaptive, and evolvable system (CAES[1]), which addresses all living and supra-living (human activity systems such as organizations) systems, with the ISSS and HSS being examples at different scales. This model is comprised of three basic interrelated sub-models, all of which can be found in real systems. These are an archetype model of an agent and agency (human or otherwise), a model of an archetypical economic system (where the work gets done), and a model of an archetypical governance system (Figure 1).

[1] A complex adaptive system (CAS) is a CAES but without the capacity to evolve.

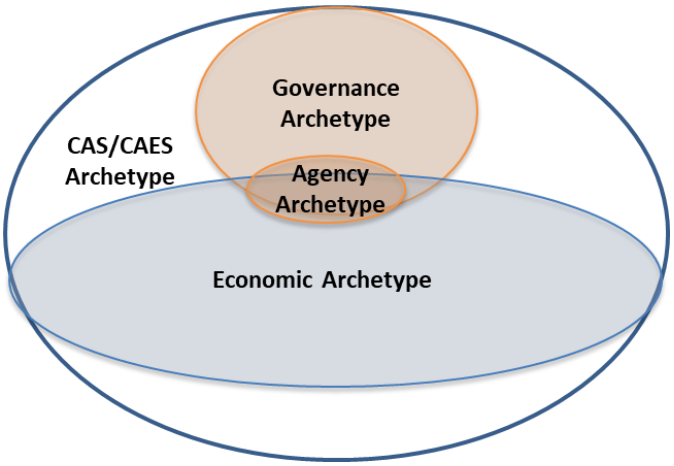

Figure 1. The three archetype sub-models of a CAES interoperate in nested hierarchies

The first model considers the data processing, information extraction, and decision-making aspects that will be embedded in the second two models. The economic model describes a generalized economy that extracts resources from the environment, produces goods and service, and exports products and by-products to the environment. Other examples of economies are cellular metabolism, multicellular organism physiologies (that support metabolism), and ecosystem food webs. The governance model, similarly, describes the regulation and coordination of work processes (in the economy), the logistical management of production chains, and the tactical management of obtaining resources and exporting products – coordination with entities in the environment. The strategic management of CAESs arises with mental capabilities as in the human brain, and in human organizations, such as corporations and nation states.

The CAES archetype is an integration of concepts from many workers (several listed below) in systems theories. It covers a lot of territory and yet it has a highly defined structure and functioning. It provides a skeletal framework for guiding the analysis of real systems, existing already or to be designed.

As mentioned above, the CAES archetype model was derived from an integration of the works of many previous workers who had developed models, especially of particular kinds of systems. The CAES model derives from the work of many systems thinkers. A partial list would include: Ashby (1958), Beer (1959, 1966, 1972), Boulding (1956), Checkland (1999), Churchman (1960, 1968a, b), Churchman, Ackoff, & Arnoff, (1957), Forrester (1961), Fuller (1968, 1970, 1982), Klir (2001), Koestler (1967), Miller (1978), Morowitz (1968, 1992, 2002), Odum (1983, 1994, 2007), Prigogine (1984), Rosen (1985, 1991), Shannon & Weaver (1949) Simon (1957, 1991, 1998), von Bertalanffy (1968), Wiener (1950, 1961). It is an amalgamation, integration, and synthesis of some of the best features of these works, from many decades of study along with more recent understandings from the sciences (particularly neuropsychology).

The CAES model then constitutes both a framework and a template pattern. As the working groups' analyses proceeds, this will be both guided by the requirements of a CAES and have a

place to attach what is discovered and developed. Below we discuss the use of this model in the analysis of the ISSS we propose to conduct.

What the Pandemic Has Revealed About the HSS

There has been a growing realization that the current HSS was not prepared for the pandemic, nor resilient in its wake (c.f., Packer, 2020). With the global response to COVID-19 being, primarily though not consistently, self-quarantine and consequently to shut down major segments of the economy, a number of dysfunctions in the way the HSS is organized and worked have come to light. Many people already realized that, for example, capitalism with its emphasis on growth and profit (with concomitant high salaries for the captains of industry and banking) was a major contributor to global warming (Klein, 2014). However, the vast majority of people firmly believed that the economies (whether centralized or distributed governance prevailed) existed and worked the way they did for the benefit of all, even whilst those economies were failing to provide for basic human needs, including and importantly human satisfaction with life (psychical well-being). Many other parts of the current global economic designs have become equally disrupted due to interdependencies that most have taken for granted.

The inabilities of most governments (with several notable exceptions), especially in the supposed democratic west, to respond quickly and sufficiently to minimize the effects of the pandemic also reveal major deficiencies in the design of the governance architecture as well as the corruption in government agents' decision processes. Not only did many governments fail to *react* adequately, they had ignored informed warnings that something like this could happen and did not *anticipate* the impact or prepare in a preemptive fashion to respond when it did happen.

It is recognized that while the pandemic has a frightening mortality rate, it by itself would not spell the doom of humanity per se. In the global reaction to it however, in the quarantining and shut down of large segments of the economies of nations, it is now revealed just how fragile and, in many cases, dysfunctional many aspects of our economic (so-called) system and governance processes are. They were not designed to be resilient in the wake of such a pandemic and as these institutions break down, but what we do witness that individual human beings are capable of adapting to the stressful conditions. Humans are resilient – up to a point.

Toward a Systemic Organization

Regeneration

The original intentions and operations of the ISSS were formed in a different world than the one we are currently entering. The emphasis was originally on research into the nature of systems and the application of what was known to real-world, but limited in scope, systems. Any complex system that intends to be sustainable in the long-run has to either adapt to changing conditions, or, when those changes are severe, evolve new capabilities that make it more adaptive to the new environment. The ISSS must now consider this aspect. The world we are entering is very different from where we have been. If there is a collapse of societal subsystems such as the economy, then the ISSS must quickly develop structures and functions to meet the challenges. It must anticipate how those changes are likely to affect its current form and use those scenarios to design new capabilities – it must perforce evolve.

At the same time, there is an on-going structure that embodies a rich history in terms of people and ideas. So, the changes that must be pursued cannot, and should not, tamper with what is of value in the existing organization. What we envision is a process of regeneration, to reinvigorate the original ideals of the society, while developing the mechanisms needed to meet the needs of becoming sustainable in a rapidly changing world.

Our approach to regeneration and evolution will be in accord with The International Futures Forum (IFF), a registered charity with a human development mission to enable people to thrive in powerful times. They address complex, messy, seemingly intractable issues – local, global and all levels in between – fostering practical hope and wise initiative. They support people making a difference in the face of all that stands in the way of making a difference, rising to the challenge of the moment.

The IFF has found the 'three horizons model' (IFF, 2008) useful and practical.

Horizon 1 is the Dominant System at present: "business as usual" or "the world in crisis", Horizon 2 is the time innovations become more effective than original systems: "the world in transition", and Horizon 3 is the new way of doing things or the successor to business as usual: "the viable world". (IFF website, https://www.internationalfuturesforum.com/three-horizons)

The application of the model facilitates a systems approach in maintaining the essential infrastructures of H1 (the ISSS as we find it today), providing pathways through H2 (ways to transition gracefully), whilst building up the capabilities of H3 (the ISSS we seek to build).

This model is again useful in the context of the ISSS transformation. We must maintain what works and identify what does not, secure the essentials, provide new foundations, prepare for the future and importantly imagine what that future target is. This needs to be a learning endeavor, since as we progress to the future, our experience and understanding will grow and the circumstances of the world will change around us.

Systems Analysis of the ISSS

The methods of deep systems analysis and the CAES framework described briefly above provide an approach to the analysis of the ISSS organization. This analysis will provide two results. The first is the identification of the various subsystems and processes within the ISSS organization as they are today. The second is the identification of gaps or holes relative to what we know a fully functional CAES would posses. For example, according to the CAES framework, sustainable, resilient, and self-regenerative organizations – that is viable organizations – produce products and/or services that benefit the larger supra-system in which they are components. The method of analysis starts by looking at that aspect of the system of interest (SOI) to determine if that is happening. It looks at the benefactors (customers) of the output of the system to see if the products produced are actually benefiting. It also considers other possible benefactors that need to be served by its products.

The method of deep analysis, as described in the forthcoming book, is itself a system of processes and procedures. The core of analysis uses a top-down functional and structural decomposition of the SOI following an algorithmic recursive procedure with well-defined stopping conditions. The analysts are guided in what to look for and questions to ask internal agents by reference to the CAES model. For example, the analysts know in advance that there will be specific kinds of management and governance functions that must be fulfilled and what

kinds of information the management agents require in order to make the decisions they are responsible for. They can home in quickly on the relevant questions posed to the internal agents to determine if they are currently functioning in the way the CAES model requires. This model requires, for example, that there is a set of tactical management decisions needed in order to coordinate the organization with its external suppliers and customers (i.e. regulate the flow of materials, energy, and information into and out of the SOI). Once the analysts have identified an agent as filling that agency (tactical manager) they can focus on questions about sources of information, timing, etc. to determine if the agent can be as effective as needed.

Creating a New SIG: Future Human Social System

So as to not disrupt the current organization and membership with some kind of wholesale redesign, the group has centered on a plan to create a new SIG under the current structure. This SIG would be devoted to the subject of applying systems science to the understanding of what a sustainable, resilient, and dynamically stable HSS would be. The envisioned mechanism for doing so is to use the complex, adaptive, and evolvable (CAES, Mobus, 2019) archetype model described above as a unifying framework and to have members of this new SIG take on different aspects of the CAES model, such as governance and economy particularized to the HSS. Each of these members would conduct a deep analysis of their particular subsystem models and forward results to the community of practice management team for incorporation into the system science knowledge base.

While the ultimate goal of the new SIG would be to explore the issues for a future HSS, it would start by first analyzing the ISSS itself. This would serve to provide a roadmap to ISSS evolution toward a more resilient, sustainable, and dynamically stable ISSS organization. The process of self-analysis would give the SIG members the opportunity to learn how to use the CAES model and the analytic methods in a laboratory-like situation. We envision an initial membership of perhaps a dozen, of which only five or six would take on active roles in performing the analysis and data gathering. But the experience and the products of the work should attract other individuals to join the SIG and take active roles in the work as it turns toward the analysis of the HSS.

Conclusion

The ISSS is undergoing an internal self-organizing process by which it is recognizing that the society needs to evolve to become resilient in the world as we find it. The world is in an unstable state and will result in a phase transition in the human social system of some kind. Our fate as a species is still within our collective wisdom if we choose to act together. Some members of the ISSS seek to formalize a process of analysis and redesign of the society itself, with the intent that the society will be organized to serve a useful purpose in the network of systems-oriented organizations.

The purpose of this paper was to explore if we could make progress towards the unification of the ISSS and systems science as a coherent system in service to the HSS and the wider Ecos.

We are facing a time of complex interrelated crisis that threatens the very viability of humanity on our planet. Our societal systems, underpinned by our traditional sciences and technologies are proving inadequate to deal with these challenges.

Our situation urgently demands coherence in our collective effort. The larger systems community has developed and applied some very effective methodologies. Through the

application of a systems approach, taking advantage of synergistic methodologies, these various threads of knowledge can be woven together into a more integrated understanding of the global threats and designs for systemic solutions not just to the threats per se, but to the very design of the HSS and its place in the whole Earth system.

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