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Reason and Strategy in Human Affairs

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Addressing Complexity : Weaving Together, Reason and Strategy in Human Affairs

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Abstract: In a context of increasing entanglement with our environment, X-Sciences de l'Homme et de la Société (X-SHS) and Welcome Complexity, intend to promote the principles and practices of thinking and acting in Complexity within society at large. The objects of this association are any action likely to: contribute to learning modes of living and working together, with attention to complexity in a global, open context; Develop and catalyse the propagation and transmission of conditions favourable to learning, collective exploration and co-construction of vision and pathways; Provide operating environments rooted in, continuously regenerating with, pluri-disciplinary scientific research; this research tending toward trans-disciplinarity within the paradigm of complexity, thereby fostering regenerated links between sciences, arts and philosophy.

Keywords: physico-chemistry-bio-psycho-socio-anthropological approach; paradigm shift; epistemology; constructivism; systemic approach;; systemic approach teaching & research; governance systems; collective action systems; multi-disciplinary research; eco-systems;

Introduction

A challenge: Complexity¹ as Praxis²

The perceived challenge is to learn to work and live in complexity, with a global, open context. The growing complexity of our environment presents a major challenge to citizens, whether leaders or followers: the fundamental questions facing each of us become more intense at the very time when traditional modes of thinking and acting progressively lose their power. *We realise that our lives henceforth must accommodate a paradigm of continuous transformation.*

The challenge of complexity primarily arises within our heads. Here is an *epistemological* challenge: complexity is not a feature of reality "*per se*", but of our relationship to reality. Complexity is not just a challenge. It is an opportunity as well, if one chooses to accept it and face it. The evolution of our environment calls for a new art of moving and continuously evolving according to context:

❓ We need to develop and integrate renewed ways of thinking and acting in complexity, at all scale levels (local, regional, national, international and global),

❓ We need to bring about *inter-culturality*, including inter-generationality, inter-disciplinarity and inter-nationality. *Inter-* is a key to thinking and acting in complexity: relationships among elements prevail over elements.

¹ See Appendix 1 for a brief introduction to the concept of complexity

² We mention praxis, rather than practice, because the practitioner is also involved. It is customary to make use of a triptych, knowledge, know-how, social skill. A praxis requires knowledge, which can be taught, and a know-how, which can be practiced; but it also involves social skills, a knowing to be with others, necessary for practical application: this has an ethical and moral dimension. Said triptych turns out to be inappropriate, on two counts: it dissociates three headings which form an inseparable whole; it assigns all three components to a common, reducing category of knowledge. The use of praxis underscores the necessity of conjunction and integration: action and knowledge are inseparable from the being capable of action and knowledge.

Older generations who, from their standpoint of experience, observe the shifting environment and the effervescence of youth, have the charge of passing on to new generations their knowledge of frameworks and processes that can support them in the conscious construction of a world capable of inspiring them.

Such frameworks and processes require sponsors, of watchers and of guides within multidisciplinary scientific research on complexity, as well as of epistemological and ethical roots for the proposed practices.

1. HOW? : our aims.

Our project: to regenerate feedback loops between *how* and *why* by means of argument and critical inquiry

There are many who, each in their specific context, feel, experience, infuse meaning, construct a vision, then walk on local paths within a complex global world.

X-SHS & Welcome Complexity are not one more solution to a predefined problem; neither are they the statement of a problem for which a solution is sought. *The point is not to add one more element to the ubiquitous effervescence – whether individual or associative – which is emerging organically in the widening cracks opening in the classical modes of thought and action.* *X-SHS & Welcome Complexity* are offering a new scene: we propose to take position in the cracks of the effervescence itself, which is the precursor of an emerging paradigm, that is, a regeneration of the old modes of thought and action.

The project of *X-SHS & Welcome Complexity* is to *enhance and catalyse the propagation and transmission of conditions favourable to learning in any useful mode, to collective exploration of possible worlds, to rapid co-construction of the desired world and of pathways for its advent.*

This project is not to *intellectualise* the world, but to provide for operating conditions rooted in – and continuously regenerating with – scientific thought, reflection and research.

Our Culture: scouts and designers

Our culture engages scouts and journeymen in practices of complexity, who are also able to do concept work and to establish the roots of their practice in a renewed perspective on research. One main characteristic is the search for excellence in adapting to variable environments:

- ☐ on-going questioning of discrepancies between the proposed framework and our perception of reality: we seek to harmonise,
- ☐ a challenging of established situations when it seems required: we seek to transform,
- ☐ a life experience in many organisations where we have demonstrated our ability for research, for creation, for design, for entrepreneurship and for adopting new practices which better fit the context: we seek to explore and walk forward,
- ☐ an institutional posture of trusted advisor, of *King's jester*, even of *Jiminy cricket* or busybody: we seek to challenge and awaken,
- ☐ an ability to combine so-called *hard sciences* and human disciplines called *soft sciences*: we seek to refute such divisions and bring about a different, conjoining perspective,
- ☐ an ability to use a pragmatic approach by trial and error, exploring possibilities, building and refining responses until they are seen to be *satisfactory*: we grope and stumble around.

What moves us:

To regenerate together those arts which in the past were tested and renewed

As scouts and designers, we observe that there are ways of everyday life which are a lot more satisfying than what shows up daily in our organisations. Thinking and acting in complexity is an activity that emancipates and contributes to better living and working together.

We want to enable and catalyse the creation of fertile ground for present and future agents of transformation.

We want to be a space committed to the development of autonomy in persons – as they become actors in complexity – *in the context of their organisations.*

We want to be a space where research becomes the root of a common shared corpus of

Action in complexity. The multiplicity of methods hinders their clarity and diffusion: yet they are only aspects – albeit singular – of the same corpus. The list is long, and a symptom of the fragmentation which obfuscates an underlying unity. In Appendix 2, we give both details and an insight into their common stem.

To advance these goals, we want to instigate and maintain a relationship with deciders and agents of transformation, concerning:

The art and practice³ of navigating a complex world;

The art and practice of design and construction;

The operating frameworks in which members grow, which enables them to face tomorrow's world;

The continuous enhancement of these practices by the feedback of the learners' experience and by their rooting in renewed research

More generally, any contribution to their ability to face the challenges of complexity⁴

2. WHY ? : Our hope: to create a living environment, sustaining exchanges to bring fresh air, resources and new insights

The most beautiful story that could one day be told of us is that we were acknowledged as a living place, whence no one ever returned without some new idea, some new contact, some new practice to apply at home; a place steeped in multi-, inter- and trans-disciplinary study.

We shall have made progress toward this goal when:

☐ This place becomes the rallying point for those who wish to develop renewed ways of thought and action, allowing anyone to step forward confidently and consciously, using robust tools, rooted in research and tested in practice,

☐ Life, thought and action in complexity shall be communicated as an art, experienced as a solidarity, thought of as a science, just as are the traditional practices of art and philosophy,

☐ The system which is currently considered as education and teaching shall have undergone transformation to the extent of offering a lifelong training in this art and this science, beginning from early childhood.

What we aim for:

to develop the art of *rejoining*⁵ and the art and science of *working and living together*

Enabling the X-SHS & Welcome Complexity Association's ecosystem to:

☐ Extract itself from the rut of blinkered thinking, unable to renew itself,

☐ Discover, experiment, acquire renewed ways of thinking and acting in complexity,

☐ Continue learning thought and action in complexity throughout life, from early childhood to death,

☐ Practice *katas*, or *scales*, of the art of navigating complexity,

☐ Adopt an adequate language,

☐ Investigate complex problems as they arise and formulate them in a way that opens up satisfactory pathways.

To achieve this, we intend to:

☐ Establish a forum for fruitful encounters, weave relationships among people, connect cultures and facilitate dialog, between disciplines, between scale levels (local to international), between generations, etc.

³ Some readers may be surprised to find the word 'art' in a domain where they would know only practices. Here is a preliminary argument on this point. A common feature of art and practice is that they are sensitive to concrete reality and life experience and draw on resources and competencies. Both require skill in the driving of action and the construction of complex artefacts, which are contingent, doubt-ridden, ambiguous, uncertain, yet viable and efficient in their relevant context. The grasping of a situation by a human being – an organic whole – can only be a hybrid of many features: rational, sensible, ethical, aesthetic, ... It is possible to distinguish art from practice, but not to dissociate them. The notion of art emphasizes the uniqueness of a composition and displays a wide variety of personal or collective expression. The notion of practice emphasizes the will to act (the project) and those processes which organise action in its context.

⁴ Thinking in complexity, among other things, insists on conjoining indeterminacy and contingency, and at the same time the fact that not every event is equally possible. The sciences of complexity, particularly work on stochastic processes and critical self-organising states, are useful heuristics to understand such situations.

⁵ We see rejoining as an interpersonal relationship, emphasizing the psychosocial need for information, a state of interconnectedness of persons, the insertion of a person in a system of connections with a rich load of meaning and finality.

? Stimulate resonances between diverse cultures and sensibilities (both antagonistic and complementary), catalyse the emergence and the growth of projects and initiatives, weave connections among them,

? Connect agents of transformation who share a concern for renewal into a community of *journeymen of complexity*,

? Establish a centre for the development of a science of action and design in complexity, more particularly a science of intelligent orchestration of individual intelligences at all scale levels.

How we act to foster understanding of complex physico -bio -psycho -anthropo -socio -economic systems

X-SHS & Welcome Complexity act on several axes to enable regenerated ways of acting and thinking:

? Conferences : reflexive practitioners and researchers within transdisciplinary fields

? Publishing : publishing books

? Events: event to foster networking

? Observatory : interviews of people in charge in order to publish a report on the ways to deal with complexity

? Tools: approach & methods associated with complexity

? Intelligence: collecting and curating information on complexity

Our ambition is to become a think & do tank addressing complexity on all subject of interest concerning citizens.

Along our history, through our speakers and members, we weaved a network with all main centres of research in France as shown in the following map, but as well with major associations working on key issues for citizens.

3. X-SHS & Welcome Complexity research & association ecosystem:

Tables 1 and 2

Our main activity for the moment is about conferences and videos. We have a record of 62 organised conferences covering complex physico-bio-psycho-anthropo-socio-economic systems where we survey experience, praxis, ethics and epistemology of those systems. Some of them with internationally recognised researchers : Maurice Godelier, Giuseppe Longo, Mioara Mugur-Schachter, Philippe Lorino, Paul Bourguine, Pierre Bricage, François Flahault, Bernard Stiegler, Corine Pelluchon,...

Speaker	Year	Month	Title
Jacques Tencé	2021	may	Constellations in organisations
Robert Kaddouch	2021	April	Conductivity and human presence in the world
Corine Pelluchon	2021	march	Animal condition, human condition
Corine Sombrun et Francis Tautelle	2021	February	Shamanic practice understood by science
Julien Loyer	2021	January	Transformation in practice
Michel Habib	2020	December	Hidden intelligence
Justine Laurent	2020	November	The circular economy in practice
Patrick Clervoy	2020	October	Lucifer effect and vital energy
Marc-André Selosse	2020	September	Scientific ecology
Anne-Sophie Chevasson	2020	April	Governance regeneration experience
Janine Guespin	2020	February	Dynamics of non-linear systems
Philippe Silberzahn	2019	December	Effectuation
Isabelle Delannoy	2019	November	Symbiotic economy
Jean-Hughes Barthélémy	2019	October	The society of invention
François Délivré	2019	September	The human condition
François Flahault	2019	June	Man, a confused hope - General anthropology
Serge Grudzinski	2019	may	The " Unanimous Big Laugh "
Patrick Vincent	2019	April	Threats AND opportunities: becoming aware of our situation
Etienne Klein	2019	march	What is the void full of?
Mioara Mugur Schachter	2019	February	Epistemology of quantum mechanics: relativised conceptual modelling
Hervé Glasel	2019	January	Cognitive sciences, pedagogy and learning.
Thierry Gaudin	2018	November	Technique, society, religion
Giuseppe Longo	2018	October	The stakes of chance: maths, physics, biology.
Maurice Godelier	2018	June	From the understanding of socio-cultural invariants to a geopolitical reading of the world or "Following Jesus and doing business"

Hervé Zwirn	2018	April	Does the world exist?
Hugues Duffau	2018	march	Broca's error: from the non-localisation of brain functions to neural networks; from neurosurgery to social neurosciences.
François Taddéi	2018	February	Adapting learning to the challenges of the 21st century: towards lifelong multidisciplinary personal and professional development.
Jean-Paul Gaillard	2018	January	Societal and psycho-social changes: their systemic effects.
Didier Pourquery	2017	December	Truth, trust and the media: what paths for journalism?
Michel Bitbol	2017	November	The blind spot of science and its overcoming
Arnaud Banos	2017	October	Hypersensitivity and industrial logics: what is at stake, what is at stake?
Michel Authier	2017	September	Knowledge economy
Philippe Courroye	2017	June	What are the lessons of the trial of the Rwandan genocidaires?
Dominique Sciamma	2017	May	"Design is humanism".
Henri Verdier	2017	March	The digital revolution of the state: feedback from practice.
Frederic Decremps et Mehdi Khamassi	2017	February	Learning to think critically in the sciences: concrete feedback from the first year at Paris-Sorbonne.
David Chavalarias	2017	January	"Beyond economic streetlights: a model of social cognition".
Michel Hervé	2016	December	"Feedback from a lifetime of practice in collaborative governance, empowerment and self-management, as entrepreneur and politician".
Jean-Louis Dessalles	2016	November	"Information: simplicity, relevance and minimal description".
Pierre Bricage	2016	October	Session 2, " Levels of organisation and evolution of living systems" : qualitative and quantitative approach, laws of emergence.
Pierre Bricage	2016	September	Session 1, " Associations for the reciprocal and mutual sharing of advantages and disadvantages" (ARMSADA) and evolution of living systems.
Paul Jorion	2016	May	"Sideration and awareness: the human race and the threat of its extinction".
Emmanuel Sander	2016	March	The analogy at the heart of knowledge.
Jean-Louis Vullierme	2016	January	Nazism, Islamism, and Civilisation.
Paul Bourguine	2015	November	"Facing the societal challenges of our modern society: the UNESCO-'Complex Systems Digital Campus' (CS-DC) cooperation programme and the new paradigms of complex systems science".
Pierre Baudot	2015	October	Topology of Perception and Mathematics of Cognitive Sciences.
Alain Cardon	2015	May	Towards an Artificial Consciousness Morphogenetic engineering: new horizons for the design of self-organised systems.
René Doursat	2015	March	Morphogenetic engineering: new horizons for the design of self-organised systems".
Yves Caseau	2015	January	The 'paradigm shift' for business and management is a very concrete reality.
Michel Volle	2014	November	Iconomy: computerisation at the heart of the actual revolution
Philippe Lorino	2014	September	How can we rethink the way we think about organisations?
Thierry Gaudin	2014	June	The imperative of the living
Hervé Lefèvre et Marc Smia	2014	April	Socio-dynamic transformation and silent transformation.
Pierre-Yves Oudeyer	2014	January	Emergence of language and developmental robotics.
Jacques Fradin et Pierre Moorkens	2013	December	The contribution of neuroscience to motivation
François Délivré	2013	December	Coaching in companies: the foundations of practice.
François Flahault	2013	October	Western conception of the individual: a blind spot to be highlighted.
Bernard Stiegler	2013	June	From creative destruction to destructive destruction.
Henri Cesbron-Lavau	2013	April	The mathematics of Jacques Lacan
Robert Branche	2012	October	Act within uncertainty
Marc Idelson	2012	December	China-Western Comparative Approach
Jean-Louis Le Moigne	2012	June	The new sciences of Man and Society

Table 1: X-SHS Speakers

Currently, X-SHS & Welcome Complexity have developed its member base from 0 to over 700 members:

Items	Figures
Total Members	Over 700
YouTube Channel Audience	1626 subscribers 11 100 unique viewers
Viewing	53 000 hours 160 000 views

Table 2: X-SHS audience

Welcome Complexity has published a Manifesto “*Addressing complexity: Weaving Together - Reason and Strategy in Human Affairs*”.

Our core **bibliography** is as follow:

- 1 Ashby, W. Ross, *An introduction to cybernetics*. New York: J. Wiley, 1956.
- 2 Atlan, Henri, *Entre le cristal et la fumée*. Paris: Seuil, 1986.
- 3 Bateson, Gregory, *Mind and Nature: A Necessary Unity*. Hampton Press, New edition, 2002.
- 4 Benkirane, Réda, *La complexité, vertiges et promesses*. Paris: Pommier, 2013.
- 5 Dumouchel, P., and Dupuy J.P., “L’auto-organisation, de la physique au politique.” In *Colloque de Cerisy*. Paris: Seuil, 1994.
- 6 Genelot, Dominique, *Manager dans (et avec) la complexité: réflexions à l’usage des dirigeants*. Paris: Eyrolles, 2017.
- 7 Jullien, François, *The Silent Transformations*. Chicago: University of Chicago Press, 2011.
- 8 Kuhn, Thomas Samuel, *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press, 1970.
- 9 Le Moigne, Jean Louis, *Le constructivisme - Tome 1 Les enracinements*. Paris: Harmattan Collection Ingenium, 2002.
- 10 Le Moigne, Jean Louis, and Morin Edgar. “Intelligence de la complexité : épistémologie et pragmatique.” In *Colloque de Cerisy*. La Tour d’Aigues: Editions de l’Aube, 2005.
- 11 Montuori, Alfonso, *Complex Thought: An Overview of Edgar Morin’s Intellectual Journey*. Metaintegral Foundation Resource Paper.
- 12 Morin, Edgar, *La Méthode - tome 3 La Connaissance de la connaissance*. Paris: Seuil, 2013.
- 13 Morin, Edgar, *Science avec conscience*. Paris: Poche, 1990.
- 14 Morin, Edgar, *Introduction à la pensée complexe*. Paris: ESF , 1990.
- 15 Morin, Edgar, *La méthode, tome 1. la nature de la nature*. Paris: Seuil, 1981.
- 16 Poteete, Amy R., and Marco A. Janssen, Elinor Ostrom. *Working together. Collective action, the commons, and multiple methods in practice*. New Jersey: Princeton University Press, 2010.
- 17 Ostrom, Elinor, *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge, UK: Cambridge University Press, 1990.
- 18 Piaget, Jean, *Genetic Epistemology*. New York: Columbia University Press, 1970.
- 19 Prigogine, Ilya, and Isabelle Stengers, *La nouvelle alliance*. Paris: Gallimard, 1979.
- 20 Senge, Peter M., *The fifth discipline: the art and practice of the learning organization*. New York: Doubleday, 1990.
- 21 Simon, Herbert, *The Sciences of the Artificial*. Cambridge, MA: MIT Press, 2019.
- 22 Simon, Herbert, *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organization*. New York: Macmillan Inc., 1947.
- 23 Simon, Herbert, *Models of Thought, Volume II*. New Haven, CT: Yale University Press, 1989.
- 24 Varela, Francisco, and Thomson, E., Rosch, E., *The Embodied Mind: Cognitive Science and Human Experience*. Cambridge, MA: MIT Press, 1991.
- 25 Von Foerster, Heinz, *Observing Systems: Selected Papers of Heinz Von Foerster*, Intersystems Publications, 1981.
- 26 Von Glasersfeld, Ernst, *Key Works in Radical Constructivism*. Intersystems Publications, 1981.