

Taking the Perspective of the Third. A Contribution to the Origins of Systems Thinking [†]

Wolfgang Hofkirchner

The Institute for a Global Sustainable Information Society (GSIS), 1220 Vienna, Austria;
wolfgang.hofkirchner@gsis.at

[†] IS4SI Summit Berkeley 2019, Berkeley, CA, USA, 2–6 June 2019.

Published: 9 May 2020

Abstract: Robert K. Logan, Annette Grathoff and I agreed in late summer 2017 to start a research project on the origins of systems thinking. About a year later, we moved the project from the Bertalanffy Center for the Study of Systems Science to the only recently re-established Institute for a Global Sustainable Information Society (GSIS), of which I had become Director. Bob was a member of the Advisory Committee and Annette was a researcher. It was a GSIS project without funding and has been fed by voluntary contributions so far. The basic hypothesis was that systems thinking did not start with, say, Ludwig von Bertalanffy, but has been part and parcel of mundane thinking and, as such, goes back to the early days of mankind. The presentation at hand outlines three steps of anthroposociogenesis and how systems thinking might have emerged step by step. It connects to my Triple-C Model (Cognition—Communication—Co-operation) and to my characterisation of the current world situation as Great Bifurcation, making use of the term “Third” to depict an evolving anthropological feature.

Keywords: systems thinking; anthropogenesis; meta-level; concepts; normativity; dyads; triads

1. Introduction

Systems thinking is thinking in hierarchies, which means there are at least two levels (the level of the elements and their interaction and the level of the organisational relations of the system) and from one level to the next there is a qualitative leap. This qualitative leap has to do with the emergence of the (state of the) higher level from the (state of the) lower one—the lower builds a necessary condition but is not sufficient to yield to the higher one and the higher one cannot be reduced to the lower one.

Epistemologically, a true generalisation is thinking in hierarchies. You have an object level on which different elements appear in their diversity and you have a meta-level on which the unity of the elements appears because of the system’s relations. The latter appearance is an emergent of the human cognition process, which cannot be represented by deductive reasoning. A true generalisation is an act of leaping from empirical data to a theoretical insight.

It shall be argued that this capacity of human individuals was enabled by a new step of social co-operation—the advent of true social systems (societies) in anthroposociogenesis in which dyadic social systems (the interaction of individuals who know each other) began to become nested in triadic social systems (the interaction of individuals who need not to know each other). At this stage of the evolution of humanity, the interaction of individuals is mediated via social relations as a Third. These social relations (culture, morals) allow individuals to distance themselves from society and to take the perspective of the whole of society and, thus, to understand what society expects from them and what they can expect from another individual.

2. Discussion

The first part sheds light on how the Triple-C Model is useful to understand the origins of social information processes. The second part describes what kind of requirements social information had to fulfil in the first and second step in anthroposociogenesis, and the third part conjectures the requirements for a possible third step as of today.

2.1. A Complex Systems View on Social Information: Triple-C

Any complex system inheres cognitive and communicative information processes at its micro-level and co-operative information processes at its macro-level [1]. On the micro-level, elemental agency and the network of interaction of elements are situated; on the macro-level, the relations of organisation are situated. This holds also for social systems and their social information processes—human cognition and human communication are located in the actions of individual actors and the interaction network, while human co-operation is located in the social relations.

Despite ideologically biased attempts to focus on one of those social information processes, all of them have become indispensable features of humanness—human cognition as thought, human communication as language and human co-operation as work. Thought co-ordinates the devising and supervising of operations, language helps collaborate in designing and assigning tasks and work is based on consensualisation when constituting and instituting goals. Thought is for reflexion, language for dialogue and work for shared intentions.

The important insight is that thought is nested in language and language is nested in work. The one that is nested is a necessary condition for the nesting one and the nesting one feeds back on what it nests. Thus, self-reinforcing processes come about.

2.2. Steps to Anthroposociogenesis

In systems, leaps in quality emerge as a novel organisation. Thus, changes on the top-most levels are decisive. All of them are shifts in co-operation.

In the beginning, there was a shift from individual to joint intentionality. This shift was followed by a shift from joint to collective intentionality. Today, we can have a shift from collective to universally shared intentionality.

2.2.1. The First Step

The individual intentionality of the common ancestors of chimpanzees and humans was the point of departure about six million years ago [2,3]. As living together was driven by self-interest of animal monads, there was no need for the taking in consideration of common goals and no need for thinking on a level beyond the actual ego-centric perspective.

Joint intentionality emerged with early humans about 400,000 years ago. Hunters and gatherers developed dyadic co-operations driven by “second-person morals” [2,3]. Hence, there was a need for acknowledging a common goal, that is, an understanding that the partner shares the goal and both are committed to act according to its achievement.

2.2.2. The Second Step

Collective intentionality emerged with early humans about 150,000 to 100,000 years ago. Co-operation became triadic, driven by a Third, by “objective morals” [2,3] quite in the sense of George Herbert Mead’s “generalised other”. Since then, a need for group-thinking is characteristic of humanity; that is, knowing that any person belonging to the same group culture can be expected to share the same values and norms by constructing a meta-level such that any group member can imagine the whole of the group, the roles taken, and their own as well as others’ replaceability.

The following conditions can be assumed:

- Objective condition 1: The emergence of a new way of co-operation triggers the build-up of human/social systems.

- Objective condition 2: The build-up of human/social systems is hierarchical in that social relations exist on a macro-level that constrain and enable the interaction of actors on a micro-level. Those social relations are the Third that mediates any interaction of the actors as a Second and any action of an actor as a First.
- Subjective condition 1: Actors are able to distance themselves from the system they are elements of. They can reflect on the social macro-level (morals and else) in order to understand the functioning of the social system (its maintenance and its change). They are able to reflect on the build-up of social systems. They are able to reflect on the social relations as a Third. This is the origin of social systems thinking.
- Subjective condition 2: Actors can use their social systems thinking as a template for the understanding of the functioning of any other (non-social) part of the world. The organisational relations on which they reflect is the Third in those systems. This is the origin of systems thinking proper.
- Feature of systems thinking 1: Systems thinking needs to reflect the emergent property of any system, supervenient on the properties of its elements and not reducible to the latter. Thus, it needs to model emergence in a way that the emergent property is not derivable from premises that describe the properties of elements or their interaction. It has to acknowledge a leap in explaining/understanding according to the leap from a lower to a higher level in reality. It does so by introducing a meta-level in thinking. The level below the meta-level is a necessary condition for the meta-level but not a sufficient one. In that way, the meta-level is itself emerging from the lower level. It is the ideational Third that has the task to reflect the Third in reality.
- Feature of systems thinking 2: Systems thinking provides the basis for conceptuality. Concepts [4] are meta-level emergents. They emerge through generalisations. Any generalisation executes a leap from a finite number of phenomena to the class of all possible phenomena that are considered to belong to the same class of phenomena, which, as a rule, represents an infinite number of phenomena. The conclusion from the finite number to the infinite number is not a compelling one. (Only in case the class is set to a finite number can you execute a complete induction, which, in fact, is a deductive conclusion, since the truth value is transferred from the sum of the single instances to the class.) Concepts are the ideal means for transporting the meaning of systems. They are ideational Thirds.

2.2.3. A Possible Third Step

Universally shared intentionality is in reach with humans in the age of global challenges that started with dropping an atomic bomb on Hiroshima. “Omniadic” (all-encompassing) co-operation can be established when the scope of social information is extended to the whole of humanity and, thus, to a new level of the Third. The following conditions seem to apply here:

- Objective condition 1: The becoming of humans and humanity is not yet finished. No trans- or post-humanism that focus on the individual are needed. To cope with the global challenges that put our civilised existence at stake global citizens are needed. If global citizens succeed in coping with the challenges (and transform our societies into a single Global Sustainable Information Society as meta-/suprasystem), humanity would accomplish the third step to anthroposociogenesis.
- Objective condition 2: The third step might be achieved by complying with the social information imperatives for co-operation, communication and cognition.
- Subjective condition 1: In order to understand the necessity of those imperatives, global citizens need to reflect on the establishment of a higher-order world system through transnational relations that respect the social, ecological and technological commons on a planetary scale. Such relations are that Third global citizens need to design today.
- Subjective condition 2: To be able to reflect on a Third, systemic thinking is needed to master another step in our evolution.
- Feature of systemic thinking 1: Systemic thinking needs to focus on future social relations that are not yet actualised. It needs to anticipate them ideationally on a new meta-level and it needs

to anticipate the meta-/suprasystem transition of the social systems. Thus, the Third is a conjecture to be devised in order to represent a solution to real-world problems.

- Feature of systemic thinking 2: Systemic thinking does not only need to anticipate what is desirable but needs to explore that that which is desirable is also possible in the here and now. Only what is potential can be actualised. Thus, it looks in the space of possibilities now for the foreshadowing of something that might become a future Third [5].

3. Conclusions

Systems thinking has been a companion of humanity from the outset. Triadic co-operation, a living together according to social relations on the system's macro-level, required the reference to a Third, a normative meta-level, that mediated the entanglement of actors, which required communication about this entanglement by coupled actors, which required the (re)cognition of this entanglement and this coupling in their minds.

Today, systems thinking needs a next step of development to guide the next step of social evolution.

Funding: This research received no external funding.

Acknowledgments: I am indebted to Robert K. Logan with whom I share inspiring exchanges of ideas. Also, I thank Annette Grathoff for lending me an ear in talks about that topic at different occasions.

References

1. Hofkirchner, W. *Emergent Information*; World Scientific: Singapore, 2013; pp. 184–195.
2. Tomasello, M. *A Natural History of Human Thinking*; Harvard University Press: Cambridge, MA, USA, 2014.
3. Tomasello, M. *A Natural History of Human Morality*; Harvard University Press: Cambridge, MA, USA, 2016.
4. Logan, R.K. *The Extended Mind*; University of Toronto Press: Toronto, ON, Canada, 2007.
5. Bloch, E. *Das Prinzip Hoffnung*; three volumes; Suhrkamp: Frankfurt, Germany, 1967.



© 2020 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).