

Candida Rosa - an utopic model of social systems based on self-organization and Jungian psychology

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Abstract. – Up to recent times, rationality has been the foundation of science. Rationality is a linear model of reasoning and hence requires an axiomatic beginning ("Letztbegründung"). In the case of sociology, the corresponding condition is the ethical behavior of the individuals. However, reality learns us that this assumption is far from being fulfilled universally. Luhmann circumvents the fallacies of rationality by adopting the autopoietic model of Maturana and Varela. However, as Viskovatoff has remarked, the autopoietic model can describe, but not explain, social processes, and it has enticed Luhmann to some conclusions which strongly limit the usefulness of his approach, e.g. to preclude human beings and psychology from his considerations. We propose to overcome the limitations of the previous models by replacing autopoiesis through self-organization and by introducing the psychology of C. G. Jung. We conclude that the problems of humanity can only be solved by the development of the spiritual component latent in the psyche of each human being followed by an emergence of spirituality at the level of society. This development can only be the result of a self-organization process.

Résumé. – Jusqu'à récemment, la rationalité a été le fondement incontesté de la science. Mais la rationalité est un modèle de raisonnement linéaire et, par conséquent, repose sur des suppositions axiomatiques ("Letztbegründung"). Dans le cas de la sociologie, cette base axiomatique ne peut être autre que le comportement éthique des individus. Cependant, la réalité nous apprend que cette condition n'est remplie que de façon imparfaite. Luhmann contourne les embûches de la rationalité en faisant appel au modèle autopoïétique de Maturana et Varela. Mais, comme Viskovatoff a remarqué, l'autopoïèse peut décrire, mais pas expliquer des processus sociologiques. En plus, elle a induit Luhmann à quelques suppositions, entre autres l'exclusion des individus et de la psychologie de ses considérations, suppositions qui limitent fortement l'utilité de son approche. Ces constatations nous amènent à proposer un modèle alternative en suggérant le remplacement de l'autopoïèse par le concept de l'autoorganisation et en faisant appel à la psychologie de C.G. Jung. Nous arrivons à la conclusion que les problèmes auxquels l'humanité est confrontée actuellement, ne peuvent être surmontés que par le développement de la composante spirituelle de la psyché humaine suivi par une émergence de la spiritualité à l'échelle de l'humanité dans son ensemble. Ce développement ne peut résulter que d'un processus d'autoorganisation.

The concept of rationality. - The goal of the early models of society was not to describe society as it is, but as it should be: a community free of conflicts. Sociology as theory of social systems was initially part and an essential subject of philosophy. Therefore, as philosophy itself, it was based on the principle of rationality, i.e. it supposed agents endowed with rational reasoning. A rational individual was supposed to know what is "good" and what is "just".

2500 years after Platon we must state that the result is ambiguous. On the one hand, we have legislations, constitutions, the United Nations and the Human Rights as conflict restricting structures, on the other hand new conflicts erupt every day. Therefore, one should expect that contemporary sociology is more sceptical regarding rationality as basis of social processes.

As part of modern science, the sociology of our days has a larger scope: it wants to explain the emergence and the functioning of social systems. What is the role of rationality in present theories of social systems? Habermas, one of the leading figures in this discipline, has submitted the concepts of rationality of his predecessors, especially Max Weber, Lukacs, Horkheimer and Adorno to a detailed analysis and severe critique¹. He recognized that rationality as a "linear" model of thinking is never able to supply a primary foundation ("Letztbegründung"). Nevertheless, Habermas is not ready to abandon the project of Enlightenment and undertakes a desperate attempt to save the concept of rationality by introducing the model of consensus oriented action: rational agents interact by communication in order to arrive at a consensus regarding the solution of a problem. To be admitted in this dialogue, participants

¹ Habermas, J., (1985), *Theory of Communicative Action*, Vol. 1, Beacon Press

must fulfill the conditions of the discourse ethics, i.e. be responsible ("zurechnungsfähig"), speak the "truth", respect the opinion of the other participants, etc. However, from my point of view, with this concept, Habermas does not escape the stumbling stone of the "Letztbegründung" because: who determines which person is responsible? And who is allowed to decide whether somebody speaks the truth?

Jürgen Habermas' counterpart, Niklas Luhmann, was the first sociologist to recognize that the rationality concept is a deadend road. He has the merit to have introduced systems theory into sociology - and even into the human sciences in general². Among the available systems theories, he chose the autopoietic model of Maturana and Varela³. This model defines the typical features and properties of a living entity, e.g. cells. According to this model a living entity is characterized by an enclosure which separates it from its environment and is determined entirely by internal processes (self-reference, organizational closure). The environment acts on the autopoietic unit as a perturbation to which the unit reacts by adaptation within the range of its possibilities.

However, the pioneering work of Luhmann has not been approved unanimously. For instance, Viskovatoff⁴ has criticized that the autopoietic model is purely descriptive, but does not comprise tools to understand the evolutionary processes which have brought life into existence and which maintain it. There is no mathematical model to derive general rules for emergence or adaptation under the influence of mutation and selection and the notion of paradox is lacking. Therefore, Luhmann's explanations of social processes, e.g. how society deals with ecology, remained superficial. Further, the autopoietic model generates a top-down perspective.

Thus, the choice of autopoiesis deprives Luhmann from a deeper understanding of social processes. In addition, by conforming strictly to his model, Luhmann has been led to some unfortunate choices regarding certain elements of his theory. In agreement with the system-environment-perspective, he considers the human beings as environment of the social system which they are constituting: they perturb the social system, but cannot determine its organization. The corresponding worldview is not only pessimistic and hopeless, but could eventually be interpreted as justification for totalitarian social order. It creates a climate of delimitation and exclusion.

Both Habermas and Luhmann have strictly excluded psychic systems from their considerations. For Habermas psychic is equal to irrational. He considers the middle-ages as irrational, modern society as rational⁵. From my point of view, this categorization is delicate. A medieval sociologist looking at our time could be led to draw exactly the opposite conclusion. According to Habermas "a rational being is ready and able to get rid of self-delusion". In the light of modern psychology it seems problematic to maintain such a statement, as we will see below. Luhmann, for his part, puts psychic equal to conscious. He declares: "We deal with social systems, not psychic systems. We presuppose that social systems do not consist of psychic systems, and certainly not of human beings."⁶

Towards a Revised Framework. – In the following, I want to suggest an alternative framework for sociology by proposing the following modifications:

- replacement of the autopoietic model by the model of self-organization (theory of complex dynamical systems)
- admission of psychology in the discourse

I hope to be able to show that, by these modifications, sociology can gain momentum regarding the understanding of both the functioning as well as the formation of social systems.

² Luhmann, N. (1995), *Social Systems*, Stanford University Press

³ Maturana, H. (1981), *Autopoiesis*. In: *Autopoiesis: A Theory of Living Organization*, Zeleny M. (ed.), Elsevier, New York; Varela, F. (1979), *Principles of Biological Autonomy*, Elsevier, New York

⁴ Viskovatoff, Alex, (Dec. 1999), Luhmann, Niklas -- Criticism & interpretation, *Philosophy of the Social Sciences*, Vol. 29 Issue 4, p481, see also: www.libfl.ru/Luhmann/Luhmann4.html

⁵ Habermas, *op.cit.*, chap.2, pp72(German edition)

⁶ Luhmann, *op.cit.*, chap.7, p346(German edition)

By proposing to replace autopoiesis by self-organization I don't intend to disqualify the autopoietic model the value of which is, for me, mainly an epistemological one. I suggest to choose self-organization, because I consider it to be a more useful concept in the present context. I am aware that self-organization as a concept is not accepted unanimously either, that there are many flavors of this concept and that, therefore, I must specify what I mean by it:

In the context of this paper, self-organization stands for:

- a paradigm, i.e. a perspective of science which replaces the linear reductionist causality based view of rationality by a circular one
- the typical behavior of complex dynamical systems (CDS)
- a collection of mathematical tools for the investigation of CDS

As we know, the tools developed for the study of CDS cannot describe these systems in an exact manner - that's why they are called complex -, but they provide a lot of useful information concerning the general behavior and evolution of these systems. In **Table 1** I have listed a selection of these tools together with results obtained with them. I will make use of these results below in order to demonstrate their usefulness in relation with psychic and social systems.

As we have seen, so far sociology has not been open to an interdisciplinary partnership with psychology. This refusal is astonishing since S. Freud (1856-1939) and C.G. Jung (1875-1961) had shown clearly already in the first half of the 20th century that our thoughts and actions are determined to a large extent by unconscious contents of our psyche. Freud was the first to develop a model of the human psyche as well as a therapeutic method for the treatment of mental disorders⁷.

I have chosen the psychology of C.G. Jung for my framework because it maps perfectly onto the systemic approach I want to use. I hope that this will become evident later. As Freud, C.G. Jung divided the psyche into an unconscious and a conscious part (**Fig. 1**)⁸. The unconscious is composed of the collective and the personal unconscious. The collective unconscious is the seat of the archetypes, i.e. a kind of psychic templates common to all human beings (**Table 2**)⁹. The archetypes concretize themselves in the personal unconscious in the form of complexes. These complexes manifest themselves as a reference system for thoughts and actions in the consciousness of the person (**Fig. 2**). Jung expressed this as follows: "Without any doubt, the archetypal images determine the destiny of each person. The unconscious psychology of man decides, and not what we think and speak in the garret of our brain."¹⁰.

In the first part of life until adulthood the primary task of psychic development is to establish a stable ego (consciousness). During this period the psyche is vulnerable and risks to loose the contact with the self (damaged ego-self-axis). The person falls under the influence of shadow and persona which may have catastrophic effects not only on the person itself but also on all social processes in which it is involved. Later in life the self claims its rights. The person gets the chance to raise the unconscious processes into consciousness and to integrate ego and self, a process which Jung called individuation. There are many famous descriptions of this process in art and literature, e.g. the Divine Comedy of Dante.

A psychic factor active in many social processes is existential anxiety. It may be surprising that Jung did not mention a corresponding archetype. Perhaps existential anxiety can be interpreted as a complex caused by lack of self. Therefore, existential anxiety is regularly found in relation with shadow and persona complexes and increases their destructive or autodestructive effects.

⁷ see an overview on www.freudfile.org

⁸ Jung, C.G., (1981) *Collected Works of C.G. Jung, Volume 9 (Part 1): The Archetypes and the Collective Unconscious*, Princeton University Press, see a comprehensive overview in: Edinger, Edward F., (1992) *Ego and Archetype*, Shambhala, Boston & London

⁹ Jung, C.G. (1979) *Collected Works of C.G. Jung, Volume 9 (Part 2): Aion: Researches into the Phenomenology of the Self*, Princeton University Press, see a comprehensive review in: Saunders, Peter, Skar Patricia, (April 2001) *Archetypes, complexes and self-organization*, *The Journal of Analytical Psychology*, Vol. 46, issue 2

¹⁰ Citation in: Steiner, Alex, (May 2000) *Der Fall Martin Heidegger, Philosoph und Nazi*, Teil 3, www.wsws.org/index.shtml

Neither Freud nor Jung have developed a psychology of society, but have made numerous remarks on this subject. We know Freud's notion of "man as a mass" ("Massenmensch")¹¹. The equivalent notion of Jung is the "participation mystique", a term taken over from Levi-Bruhl. This notion describes the tendency of people to join social groups or ideologies. This movement seizes persons which have a weak personality and, therefore, try to find a compensation in mass movements. Jung was convinced that society could only be "improved" by an enlarged consciousness of the individuals which compose it, i.e. by something like a "bottom-up" individuation process of society¹².

Some Applications of the Framework. - The components of the framework can be applied to social systems individually and in combination.

- *Self-organization*

It is rather obvious that psychic and social systems exhibit the same typical behavior than any other CDS, i.e. are subject to the formation of attractors and to bifurcations. Their behavior can be stable, oscillatory or chaotic. An example of an oscillatory psychic system is the famous double bind of G. Bateson, an oscillation between a consciousness and unconscious determined behavior.

All multi-agent models describe the emergence of new levels as bottom-up events: cells are first before there is a body and chemical compounds are first before there is an immune system, not vice versa. This does not preclude that the higher level system, the body or the immune system, does work back onto its constituents allowing them to evolve and to improve the system. The same reasoning should also be applied to the relation between human individuals and a social system.

Kauffman's simulations with models as Fitness Landscapes, Random Boolean Networks and Random Graphs have brought to light numerous general properties of multi-agent systems which can also be applied to psychic and social systems¹³. Here some first examples:

- According to Kauffman, evolution is kept alive by the polarity between order and chaos and seeks to attain stable configurations by evolving to the edge of chaos, an intermediate state between these two extremes. When humanity develops to a chaotic global social system, then polarity breaks down, since there is no more outside counterpart. Kauffman's principle can be taken as a founded alert against a dangerous evolution.
- Kauffman has shown that organisms whose genetic system is subject to a mutation rate much higher than the selection rate, decay to a low fitness level and do not evolve any longer. Kauffman has called this phenomenon the "error catastrophe". Apparently, humanity is already in this state: technological progress and social change have accelerated to such an extent that our mental and social structures cannot follow. As a consequence, we are no longer able to create durable and evolvable social structures. Humanity is on the way to a kind of evolutionary "thermal death".
- Another variant of this mechanism is the "complexity catastrophe" which occurs when the connectivity of a system or network becomes too high. In this case, too, fitness decays to a low level. In relation with social system this could mean that, for instance, the often claimed direct democracy where everybody participates directly in the political decision process (as Habermas had it in mind) is condemned to failure, because the multiplicity of opinions produces a chaotic situation.

In all three cases we have a diagnosis, but not yet a therapy.

- *Jungian Psychology*

¹¹ Sigmund Freud, (1921), *Massenpsychologie und Ich-Analyse*, Gesammelte Werke, Bd 13, 1955, London.

¹² Jung, C.G., (1968). *A study in the process of individuation. Conclusion*. In: Jung, C., *Collected Works of C. G. Jung*, Vol. 9, Part 1. 2nd ed., Princeton University Press, 1968. 451 p. (p. 348-354).

¹³ Kauffman, Stuart, (1993), *The Origins of Order*, Oxford University Press, and (1995) *At Home in the Universe*, Oxford University Press

Before discussing the application of Jungian psychology to social systems, I want to draw some general conclusions from Jung's theory.

If the unconscious is the reference system of our actions, then actions become the symbolic expression of psychic structures and not of rational reasoning. As a consequence, the conditions for responsibility as claimed by Habermas are no more given and there is no more freedom of will. If this is the case, then democracy, management and any other kind of leadership becomes doubtful, i.e. the justification for delegation of power is lacking.

If persona and shadow dominate, then the conditions for ethics are absent, for ethics is the product of the integration of the ego and the self and appears as the image of this integration in the reference system of the consciousness. If there is no ethics, then man loses the control of his actions which is taken over by a self-organizing process independent of his influence, leading to attractorlike autonomous structures with inhuman character.

We have seen that the individuation process is a mechanism which allows man to gain access to the unconscious processes which manipulated him until then. If this veil is lifted, he becomes able to act without the bias exerted by his unconscious and reaches a state which now really merits to be called rationality. However, when talking about the future of humanity, Jung himself got trapped in a contradiction. On the one hand, he urged man "to climb to a higher moral level", on the other hand he was aware that man cannot see this higher moral level as long as he is caught by the unconscious¹⁴. Yet individuation is initiated by the unconscious self and is inaccessible to human will. Is there any path out of this vicious circle from our present perspective?

- *Self-organization and Jungian Psychology Combined*

Jung died before self-organization appeared on the stage of science, but his model of the human psyche and its influence on our actions are very akin to the new paradigm and it can be assumed, that Jung would have welcome self-organization with enthusiasm as support of his theory.

When claiming that man should climb to a higher level of morality, Jung made the tacit assumptions that the psychology of the individual could be extrapolated to social systems. Indeed, it seems that social groups exhibit typical archetype based behavior, e.g. the "participation mystique" shows the typical features of collective shadow and persona complexes. These complexes produce collective existential anxiety which leads to the formation of superstructures like science and technology, the concept of rationality or globalization. At a lower level, the scape goat mechanism of R. Girard¹⁵ or the well-known mobbing also belong to this category. Are these findings confirmed by the laws of self-organization?

Indeed, Kauffman's Random Graph model of the origin of life¹⁶ shows that the emergence of a new quality occurs above a threshold of constructive interactions, e.g. in sufficiently dense networks of autocatalytic reactions. In analogy, this model can explain the formation of superstructures above a threshold of connectivity in a network of interconnected human beings. Due to the archetypal mechanisms, these structures adopt an autonomous attractorlike character and all attempts to get them under control seem condemned to failure. Hence it is not surprising that the repeated appeals to rational decision taking which we hear daily, produce no effect. If looked at from this perspective, Luhmann seems right when he denies any human influence on these superstructures. Is there an emergency exit?

If Kauffman's model works in a negative sense, does it work also in a positive way? For Jung, the occurrence of an individuation process as a spiritual experience was still a mystery. From our present perspective, it can be understood as the result of a self-organization process of the unconscious (refer e.g. to the memes of Dawkins¹⁷ and Gabora¹⁸). We can ask whether there is a way to promote or encourage

¹⁴ Jung, C.G., (1969), *Answer to Job*, In: Jung, C., *Collected Works of C. G. Jung*, Vol. 11. 2nd ed., Princeton University Press

¹⁵ Girard, R., (1972), *La violence et le sacré*, Grasset

¹⁶ Kauffman, Stuart, *op. cit.*, chap. 7 and fig. 7.4

¹⁷ Dawkins, Richard, (1976), *The Selfish Gene*, Oxford University Press

this process in each human being. Certainly not in a direct deterministic way: Self-organization processes can only be promoted indirectly according to H. v. Foersters statement "Watch that you always increase the number of possibilities!". As Eric Schwarz has shown with his "modèle de Neuchâtel"¹⁹, spirituality as basis for ethics seems to be the next step of evolution. Indeed, since Jung's individuation process is part of the psychic development of each human being, spirituality seems already present in man in a latent form ready to be developed. On this basis, the integration of ethical human beings to an ethical whole, an ethical society, by a self-organization process seems possible.

In his Divine Comedy Dante has transmitted to us the model of a spiritual society which he called "Candida Rosa"²⁰, the image of the celestial rose composed of angels. The angels represent beings which have realized the integration of ego and self and hence are completely autonomous personalities. In this state, they are able to subordinate their personality to the interest and the prosperity of the whole, the rose. In return, they nourish themselves from the nectar of the rose.

Let's become angels.

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¹⁸ Gabora, Liane, (1998), Autocatalytic Closure in a Cognitive System: a Tentative Scenario for the Origin of Culture, *Psychology* 9(67), Dec.1998

¹⁹ Schwarz, Eric, (1997), Toward a Holistic Cybernetics. From Science through Epistemology to Being, *Cybernetics and Human Knowing*, Aalborg (DK), Vol.4. No 1. p. 17-49,

²⁰ Dante, Alighieri, *The Divine Comedy*, Paradise, Canto XXXI

Figures: see separate document "Candida Rosa_Figures.doc"

Table 1 **Mathematical Tools for the Investigation of Complex Dynamical Systems**

- ▶ Attractors - Basins of attraction - Bifurcations - Phase transitions
- ▶ Domains of Order, Complexity and Chaos - Edge of Chaos
- ▶ **Fitness Landscapes** (NK landscapes)
Self-organization prevails over Darwin's selection
Error catastrophe: mutation rate \gg selection rate
Complexity catastrophe: $N = K - 1$, connectivity too high
Co-evolution: system-to-system, system-to-parts
- ▶ **Random Graphs**
Threshold of emergence of higher level qualities
- ▶ **Random Boolean Networks (RBNs)**
Extension of cellular automata to variable Boolean rules
- ▶ **Random Grammars**
Extension of RBNs: strings replacing Boolean operators
- ▶ **Game Theory**
- ▶ **Genetic Algorithms**

Table 2 **The Jungian archetypes**

- ▶ **Persona:** the "mask" which we present to the society in order to subsist and to be recognized.
- ▶ **Shadow:** dark side of the psyche, elements of the character which are refused by the persona (or the ego), the refused elements are projected onto external circumstances, persons or institutions; source of violence and hatred.
- ▶ **animus/Anima:** the component of opposite sexe in the psyche, determines sentiments, moods, intuitions, creativity, relation to the other sexe, "inner guide", combines with Self to guide i process.
- ▶ **Self:** Both archetype and (as guiding instance) totality of psyche, controls balance between conscious and unconscious (dealing with paradoxes), provokes individuation process, negative aspect of Self: inflation.
- ▶ **Note:** the **Ego** is not an archetype, but grows out of the Self as consciousness. Ego (consciousness) and Self (as unconscious archetype) are complementary. Psychic health is characterized by an intact Ego-Self-axis (see Edinger²¹).

²¹ Edinger, E. F., op.cit., chap. 1