Emerging factors and irreversibility
Predictable future and events of becoming

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1. Functions and Roles

The paradigms of design are changing quickly because their role in designing human environment is changing profoundly. For this reason ISIA ROMA created years ago an international brand called "beyond the product" to communicate through some of its designs, the passage from the product towards more complex themes, towards scenarios studied and described by the Sciences of Complexity.
In dealing with the theme of the relationship between generative processes and irreversibility it is essential to clarify whether we are dealing with functions to resolve or new roles in emerging processes since systemics, Sciences of Complexity generally, adopt strategies aimed not so much at resolving specific functions, as much as identifying and managing relations. We think this is the vision in which to set design of the future - new designs, new objects, new spaces and services.

The economist Julian Simon (1) creating the theoretical premises for low cost flights, appliced a systemic strategy extraneous from the process of dominant economics to resolve a rather complex problem of airline companies for which it would never have been possible to find a solution using the variables of classical economics.

Nor is generative design a random event. Designing, talking about design, architecture, places, spaces or installations, airports and living-rooms of apartments, taking an interest in new functions nearer the needs of contemporary society today means having relationships in mind.

Having in mind a systemic model means cultivating a feeling of complexity and responsibility but at the same time not forgetting the role of subjectivity because the characteristic of abstraction, conceptualisation, communication and transmission, leaving a place for signification even when the message is addressed to no one in particular. As J. Lacan said, every letter is addressed to someone, even if it is never sent (2).

2. Future and becoming: the latent state.

Initially let us look at some of Jacques Derrida's reflextions (3) on the difference between Future and becoming, in the light of systemic principles.
The future, Derrida says, presents itself as what we think should happen on the basis of trends, processes which can be reconstructed and predicted, using precise models, based on growth and decline parameters, plans, economic analysis and so on.
Becoming, on the other hand, is more complex. It is simply what happens and what we have to come to grips with. In one way becoming is exactly that unpredictable

datum which determinist linear thinking is unable to explain. The definition of "future" is still a semantic, linear-type definition linked to the *governing of prediction*.

On the contrary, becoming is simply what comes, what happens with   all the sociosemiological human repercussions which give birth to new economies, new language, new life styles and ways of expression, networks of relationships unforeseeable before, with complex effects at other levels of society. This definition is closer to Systemic Emergences.

The most interesting thing is that because of its unpredictable nature becoming can occur *before the future*, even though the timeline includes both but in a profoundly different way. We can say then the future depends on us in a fairly visible way while becoming depends on us in a more invisible way.

The problem arises however when we realise that the knots to untie are not only very complicated but are also intertwined, *whole* interrelated *together*, because global, social change involves them in a complexity never seen before and this invisible fabric of problems has the power to involve the visible fabric.

The design of functions in general takes no interest in this but the design of relationships has to keep it in mind. It is another way of saying that the design of being is closely linked to the design of becoming which is what we are living. It is as though we were saying that we are living in two "nows" at the same time, the one that has been defined as "sliding doors".

The irreversibility or not of one is linked to, or coincides with the irreversibility of the other since Object and System are closely linked.

3. Controlling and learning together

For this reason we should clarify whether we are in some way calculating to what extent we can control the process in our architectural project or design or if we are learning the process at the same time.

This question is important because it highlights the contradiction between paradigms. Between the form-function paradigm typical of the product culture of modern times, and the immaterial paradigm of complexity where the visible and the invisible are intertwined in a relationship which will emerge as dominant.

Although this relationship is valid if we have in mind an addressee, it is impossible not to see how this involves practices and design categories which are very different from one another, instruments, in our opinion which are duty-bound to cooperate to provide answers as things change. This is a contradiction that those who are designing today are well acquainted with.

We have to reverse the point of view and from our role as *observer* become the *observed -* in a position to influence design processes from inside. Putting ourselves inside processes bottoms up gives us the benefit of a privileged *listening* position towards the relations of *use and efficacy* which is created on the edge of *order and chaos* (4),   that is, when the principle of coherence is beginning to take form.

In a wonderful essay, F. Nietsche (5) explains the role played in our lives by the different types of "histories" which we live constantly: the Epic, history of Antiquites, the Autobiography. In the end the course of history leads to this kind of present-day complexity where everything is interwoven and nothing can be resolved by isolating and separating. In other words we have to match our designs and generative protocols today with complex social phenomena, intertwined and in movement.

4. Irreversibility

If the structural stability which signals irreversibility can be verified in morphogenesis as for example in fractals and in the theory of catastrophes, in the social processes we are addressing, that stability involves an element of greater complexity because it depends on an emergence which contaminates and deviates the already far from simple morphogenetic process to a conceptual level.

The more generative the project the more complex it is. Not in the sense that its algorithmic potential is increased enormously but in that it tries to confer a significance to the processes it perceives and catches a glimpse of, using for example, the conceptual categories analysed by Nietsche, each time. Or remembering a speech by Derrida: Abstracting to see rather than insisting on enlarging the telescope?

For this reason recognising the emerging factors, the change of paradigm or Gestaltic reorentation (6) proposed by Tomas Kuhn is the first action to be carried out. Above all, observerer, system and emergence are an integral part of a precise theatre of possibilities and the role played by the observer influences which paradigm to adopt since it is a question of an observer-actor-observed. Not someone neutral.

There is therefore a moment in which, finding ourselves in a specific process we note the forming of a *situation in the situation* which shows a principle of coherence outside the generalised coherence which moves the whole system. Let us try to reflect upon some of the characteristics which should or could be present and observed as proveding rules in those circumstances.

What we are studying is how to design open and generative systems capable however of becoming self-formalising at every stage, that are capable of transmitting something that makes sense, keeping in mind the story of coherence of signs even when they can revert to being reversible.

A. Principle of Coherence
Suddenly, a relationship among some components of the system showing coherence is created. As we have said, it is an organising principle of a different nature, something which did not exist before, something different regarding which it is even difficult to express judgement. Something is being born. Exactly as the flight of a bird has no resemblance to the flight of a flock, and so studing the flight of a bird, one by one, doesn't explain the flight of a flock. (7)

B. Continuity of time and speed of propagation
This relational coherence resists and remains – therefore begins to have a time dimension. For this reason it is also subject to measurement which leaves a door open to the story of signs and to the geography of meanings, since the space component is certainly involved in this theatre of events.

C. Genome of the relationship at the micro, macro and meso level.
Emergence is neither magic nor esoteric but happens because something living in a latent state is able to link the components and at a certain point emerge. As a result of reciprocal interaction, the components become arranged in a different way but that does not mean that they do not have a structure even from the theoretical profile.

Gianfranco Minati for example talks of micro, macro and meso levels of emergence. (8)

D. Systemic inductions: a hypothesis

Let us try to look for something in the emergence - traces able to *create memory*. If we superimpose on these traces a pattern or a code, for example colour, we immediately lead it to assume a different conceptual meaning which can be "semantised" because emergence contains at this point a metadesign seed. It becomes a model.

We are inserting into a combination of phenomena, different in nature but linked by a principle still unknown, an elementary alphabet, patterns taken from a metadesign catalogue of primary design which acts as a catalyst for the initial elements. The initial principle of coherence is redesigned (and even highlighted) by the map, abstract, constructed and applied thanks to a colour-memory code. This map will make from the first coherent whole a second coherent whole, that can now be memorised. According to our vision, it is so important that the model applied to the emergence spring from a careful reading and interpretation of the history of signs.

The colour memory is a decidedly plausible systemic induction inasmuch as it expresses a relationship totally extraneous to the nature of all its components; for example no one will study an apple on the basis of the fact that it "could fall" but rather from the viewpoint of its organoleptic qualities. Not only. This second map already has *place* characteristics typologically similar to those places where memory of past works is generally kept - a Museum or a Library. A library of Emergence.

The memory produced becomes readable thanks to the fact that it is written, inscribed, or rewritten in a pattern which has the power to attract a future user who is no longer the giver of the systemic induction but another person.

This new user is expanding and implicitly organising a new emergence library.

E. Ability to change from reversibile to irrerversible

The new paradigm for reading reality comes close to the theory of complex systems which teaches that we are always living in the same scenario at different spatial and temporal levels, between future and becoming. The intersections of these levels are not always predictable and "anything" can happen ever before the "future". Design guides reversibility according the nature of emergence and not according to the nature of control also because we would not have the certainty that the design tool of control which we use is the suitable instrument.

Note

(1) "Can't get on a Flight? There Should Be No Problem" Julian Simon, The Wall Street Journal, Apr 9, 1987; of the same author: "The Ultimate Resource2" Princeton University Press,1999
(2) "La lettera rubata " J. Lacan; Einaudi, 1976
(3) "L'écriture et la difference"Jacques Derrida; Seuil,1979
(4) "At Home in the Universe" Stuart Kaufmann; Oxford University Press, 1995
(5) "Dell'utilità e il danno della Storia per la vita" F. Nietsche; Adelphi, 1974
(6) "The Structure of Scientific Revolutions" Thomas Khun; Chicago   University Press, 1962
(7) "La teoria generale dei sistemi, Sistemica, Emergenza: un'introduzione" Gianfranco Minati; Polimetrica, 2004
(8) G. Minati; Op cit