

# Towards Ecologised Thought.

## Interview with Edgar Morin

**Maria-Àngels Roque.** Editor-in-chief of *Quaderns de la Mediterrània*

Edgar Morin is one of the great living thinkers whose interdisciplinary method has acquired great importance given the new demands for understanding and action resulting from the problems that surround us. This method also responds to the current growing demand for quality education, mainly through his work *Seven Complex Lessons in Education for the Future*. The interdisciplinary method is based on the theory of complex thought, conceived by Morin himself, which argues that reality is understood and explained simultaneously from all possible perspectives. Therefore, a specific phenomenon can be analysed from the most diverse areas of knowledge, through “transdisciplinary understanding”, avoiding the usual reduction of the problem to an exclusive question of determined science. This new approach has very important consequences in the panorama of sciences, education, culture and society.

*Method* is Edgar Morin’s key work, consisting of six volumes published between 1972 and 2004, in which the author outlines a discursive loop that goes from the human to the natural and from the natural to the human. One can approach the work from any of its volumes and find this discursive loop. In the same way, Edgar Morin gives us clues about complex thought and the need to link nature and culture in the following interview.

**Maria-Àngels Roque:** In an article you wrote for *Le Monde diplomatique* in 1989 you suggested that there was no longer time to regret ecological catastrophes or to imagine that the development of technologies would be enough to remedy them. Moreover, you said that the solution can only come from a radical transformation of our relations with man, with

other living beings and with nature. In this way, the ecological problem does not only concern us in our relations with nature, but also in our relation with ourselves. Why do you think that ecological awareness as a social phenomenon did not emerge until 1970s?

**Edgar Morin:** Ecology, as a scientific discipline, was created at the end of the 19th century with the German biologist Ernst H. Haeckel. In 1935, the central notion of “ecosystem” appeared with Tansley, who distinguished the type of object of this science from most other fields of research. But it was in California, in 1969, when the union took place between scientific ecology and awareness of the degradations of the environment, not only local (lakes, rivers, cities) but globally thereafter (ocean, planet), which affect food, resources,

health and the psychism of human beings. This is how the passage from ecological science to ecological awareness occurred. Moreover, the union took place between ecological awareness and a modern version of the romantic feeling about nature that had developed, mainly among youths, during the 1960s. This feeling found a rational justification in the ecological message. Until then, any return to nature had been seen, in modern western history, as irrational, utopian and in contradiction with the evolution of “progress”. In fact, the aspiration to nature does not only express the myth of a lost natural past, it also expresses the *hic et nunc* needs of beings that feel harassed, tormented and oppressed in an artificial and abstract world. The defence of nature is one of the most personal and most profound defences, which is born and developed in the increasingly more technified, bureaucratised, timed and industrialised urban environments. Ecological science and awareness have been essential to discover its rationality.

**M.À.R.:** However, the reports compiled in the 1970s were perhaps too simplistic, such as the commission by the Club of Rome. This generated certain wariness towards apocalyptic ecological theories.

**E.M.:** Certainly, the calculation methods of these reports were simplistic, but it was a first attempt to understand human and biological future together on a planetary scale. Analogously, the first geographical maps established in the Middle Ages by Arab sailors contained enormous errors in the location and size of the continents, but were the first effort to conceive the world.

The ecologist prophecy of the 1970s has partially self-destructed: the quite rapid diffusion of awareness of contaminations, local or provincial degradations, has brought about the implementation of legal and technical instruments that to some extent have amended

or questioned its cataclysmic character. The ecological threat ignores borders. Chemical contamination of the Rhine concerns Switzerland, France, Germany, Holland and the coastal countries of the North Sea. But a good prophecy is precisely one that provokes the reactions and struggles that avoid the catastrophe predicted.

However, the catastrophist prophecy was only deferred: fifteen years later it was verified by several spectacular accidents, such as those of Seveso and Chernobyl. We have also recently seen the fragility of Fukushima after the tsunami. This has all caused great alarm about the biosphere. Today, from a distance, it is easier to see what was of secondary and primary importance in becoming ecologically aware. What was secondary, and some regarded as primary, was the energy alarm. Many in the first ecological wave believed that global energy resources would be dilapidated very quickly. In fact, the unlimited potential of nuclear and solar energy indicates that the fundamental threat did not lie there. The second mistake was the myth of a nature that represents a kind of ideal, static balance, which it was essential to respect or re-establish. The fact that ecosystems and the biosphere have a history of ruptures of balance and rebalances, of disorganisations and reorganisations, was overlooked.

What is important in ecological awareness? First, the reintegration of our environment into our anthropological and social awareness; second, the ecosystem resurrection of the idea of nature; and, third, the decisive contribution of the biosphere to our planetary awareness.

**M.À.R.:** At the end of the 1970s, the scientific environmentalist James Lovelock proposed the Gaia hypothesis: the Earth and the biosphere constitute a regulating whole that itself fights and resists the excesses threatening to degrade it. This idea can involve the euphoric version of environmentalism with respect to



Edgar Morin.

the pessimistic version of the Club of Rome. However, it has a terrible point given that, as the Latin naturalist Pliny the Elder said in the 1st century AD, mother nature can also be at the same time a stepmother.

**E.M.:** Lovelock believes that Gaia possesses natural regulations against the growth of carbon dioxide in the atmosphere, and can find for itself natural means to fight against the holes in the ozone which appeared at the poles. However, no system is immortal, not even the best regulated, and an organism, even if it is self-repairing and self-regenerating, dies when a poison touches it at its weak spot. It is the problem of Achilles' heel. The biosphere, which is a living being, albeit not as fragile as

might have been believed, can also be mortally wounded by human action.

The idea of Gaia personalises the Earth at a moment when, for twenty years, the whole planet, in its profundities and physical existence, has entered the era of systemic sciences. Before the 1970s, there was no communication between these multiple sciences (climatology, meteorology, volcanology, seismology, geology, etc.). Nevertheless, the explorations of the tectonics of underwater plates has revived the idea of the drift of continents, launched by Wegener in the early 20th century, and has revealed that the Earth as a whole is a complex system, animated by multiple movements and transformations. Thus, the Earth can be conceived as a living being, not in the

biological sense, with DNA, RNA, etc., but in the self-organising and self-regulating sense of a being that has its history; in other words, that is formed and transformed while maintaining its identity.

**M.À.R.:** You have been a great defender of the ecosystem and the ecosystem paradigm, not only applied to the natural sciences but to all fields, including humanities. Please explain the notion of ecosystem.

**E.M.:** In a given environment, the geological, geographical, physical, climatological (biotope) components and living beings of all kinds, unicellular, bacteria, vegetable, animal (biocoenosis), interact retroactively to endlessly generate and regenerate an organising system (or ecosystem) produced by these same inter-retro-actions. Put another way, the interactions between living beings are not only of conflict, competition, competence, degradation and predation, but also of interdependence, solidarity and complementarity. The ecosystem self-produces, self-regulates and self-organises quite extraordinarily as it has no control centre, no regulating head, no genetic programme. Its process of self-regulation integrates death into life, life into death.

Until a recent time, all sciences arbitrarily limited their object of study in the complex fabric of the phenomena. Ecology is the first to deal with the global system, with its physical, botanical, sociological, microbial constituents, each one of which concerns a specialised discipline. Ecological knowledge requires multiple skills in these different ambits and, above all, an understanding of the interactions and of their systemic nature.

**M.À.R.:** So we are looking at a new kind of science referred to a system that uses the particular interactions and the global whole and that allows mutually advantageous inter-

ventions between men and nature? Is this the “ecologised” thought we must arrive at?

**E.M.:** To answer that, we can begin by examining the paradigmatic aspect of “ecologised” thought. I give the term “paradigm” the following meaning: “Logical relation between the key concepts that govern all the theories and all the discourses dependent on them.” Thus, the great paradigm of western culture from the 17th to 20th centuries unlinks the subject and the object, the first referred to philosophy, the second, to science. Everything that is spirit and freedom concerns philosophy; everything that is material and determinist concerns science. This same paradigm entails the disjunction between the notion of autonomy and that of dependence: autonomy has no validity in the framework of scientific determinism and, in the philosophical framework, it substitutes the idea of dependence. However, “ecologised” thought must necessarily be freed from this yoke and referred to a complex paradigm where autonomy of the living being, conceived as a self-eco-organising being, is inseparable from its dependence.

The organism of a living being (self-eco-organising) works without respite, and degrades its energy to maintain itself. To renew it, it extracts it from its environment, on which it thus depends. Therefore, we need ecological dependency in order to ensure our independence. Put another way, the ecological relation quickly leads us to an apparently paradoxical idea: to be independent, you have to be dependent. And the more independence we want to achieve, the more we must pay with dependence. Therefore, the material and spiritual autonomy of human beings depends on cultural nourishment, on a language, on a knowledge, on a thousand technical and social things. The more we allow our culture to know distant cultures and past cultures, the more probabilities our spirit will have of developing its autonomy.

Self-eco-organisation also means, at a deeper level, that the organisation of the exterior world falls within our own living organisation. Put another way, the external cosmic rhythm of the seasons reappears inside living beings, just as we have taken the organisation of time, which is that of our calendar and our festivals, from the cosmos to integrate it into our societies. Consequently, the world is in us, just as we are in the world.

**M.À.R.:** In Antiquity, the sophists dealt extensively with the dichotomy between nature and culture from the comparison between the “natural” and the “conventional”. Later, we find those who believe that everything must yield to nature and those who believe that nature is already subordinated to freedom, to culture or the “spirit”, which will end up “absorbing” it. Others prefer to speak of reciprocal complementation, according to which freedom, culture or the spirit do not properly oppose nature but complement or complete each other.

**E.M.:** Like all living beings, we are also physical beings. We are constituted by complex macromolecules which go back to the pre-biotic era of the Earth: the carbon atoms of these molecules, indispensable for life, were formed in the crucible of suns that preceded ours, in a clash of helium nuclei. In short, all particles that came together in helium date from the first seconds of the universe. Therefore, at the same time that we are in a physical world, this physical world, in its physicochemical organisation, is constitutively in us. This then is a fundamental principle of ecologised thought: not only is it impossible to separate an autonomous being (*autos*) from its cosmophysical and biological habitat (*oikos*), but we must also think that *oikos* is in *autos* without, however, *autos* ceasing to be autonomous. In fact, we are integrally the children of the cosmos. However, through evo-

lution, through the particular development of our brain, through language, through culture, through society, we have become strangers to it; we have become distanced and marginalised from it.

To understand our situation, I will use the parable of the mathematician George Spencer-Brown. This went more or less: “Let’s suppose that the universe wanted to be aware of itself. What would it do? It would be obliged to extract from itself a kind of peduncle, a kind of octopus tentacle that would distance it from itself so it could look at itself. But, in the moment this tentacle moves away, when the extremity of this arm turns around to look at the universe, it ceases to really form part of it and becomes outside it. Thus, the universe fails where it has triumphed: the moment it manages to know itself, it is too late; that which knows itself has become, in some way, autonomous.” Some have thought to define man through his disjunction and opposition to nature; others, through his integration into nature. However, we must also define ourselves by mutual insertion and by our distinction with respect to nature. We are experiencing this paradoxical situation.

**M.À.R.:** From the myth of continuous development we have passed to the concept of sustainable development and to a more tempered change of mentality considering that economic development means human, mental and cultural development. In this respect, you have helped us to see the coarseness of the concept, as well as the danger and damage that it has caused in diverse areas of the planet.

**E.M.:** We must stop seeing man as a supernatural being and abandon the project formulated by Bacon and Descartes, and then by Marx, of conquest and possession of nature. This project became ridiculous from the moment we realised that the immense cosmos, in its infinitude, is beyond our reach. It became

crazy from the moment when we realised that the promethean coming of techno-science leads to the ruin of the biosphere and, consequently, the suicide of humanity. The divinisation of man in the world must cease. We must certainly value the human being man, but today we know that we cannot do so without also valuing life: profound respect for man involves profound respect for life. The religion of the insular man is an inhuman religion. The pressure of the complexity of events, and the urgency and magnitude of the ecological problem drive us to change our thoughts, but we also need an interior drive aimed at modifying the principles themselves of our thought. We now know that the small lost planet is more than a habitat: it is our home, *casa*, *heimat*, it is our *matria* and, even more, it is our Earth-patria. We have learnt that we will turn into smoke in the suns and into ice in space. Undoubtedly we can leave, travel, colonise other worlds. But it is here, in

our home, where our plants, our animals, our deaths, and our lives are. We need to conserve, we need to save the Earth-patria. Under these conditions, truths from the most diverse horizons can converge within us: the sciences, humanities, faith, ethics or our awareness of living the planetary Iron Age.

It is on this Earth lost in the astrophysical cosmos, this Earth as “living system” of Earth science, Gaia-biosphere, where the humanist idea of the Age of Enlightenment can materialise thereafter, which recognises the same condition in all men. This idea can ally itself with the feeling of nature of the romantic era, which recovered the umbilical and nutritious relation with the mother-Earth. At the same time, we can make the Buddhist sympathy for all living beings, the internationalist Christian brotherhood (secular and socialist heir of Christianity) converge in the new planetary awareness of solidarity that must link humans together and with terrestrial nature.